

BRANDED

#breakfreefromplastic

BRAND AUDIT REPORT
2021

VOL IV

HOLDING CORPORATIONS ACCOUNTABLE FOR THE PLASTIC & CLIMATE CRISIS

Executive Summary

FOR THE FOURTH YEAR IN A ROW, BREAK FREE FROM PLASTIC HAS IDENTIFIED THE WORLD'S TOP PLASTIC-POLLUTING CORPORATIONS.

Thanks to 11,184 volunteers in 45 countries, 440 brand audits were conducted across six continents. A brand audit is an initiative that involves counting and documenting the brands found on plastic waste to help identify the companies responsible for plastic pollution. In total, 330,493 pieces of plastic pollution were collected and analyzed in order to identify the companies polluting the most places with the most plastic waste.

Participants documented brands from 7,762 parent companies this year. Our analysis found that the top plastic-polluting corporations of 2021 are: The Coca-Cola Company, PepsiCo, Unilever, Nestlé, Procter & Gamble, Mondelēz International, Philip Morris International, Danone, Mars, Inc., and Colgate-Palmolive.

In 2021, the mission to hold corporations accountable for their pollution has particular significance as the world's leaders come together at the United Nations Climate Change Conference (COP26) to negotiate how to limit global heating to 1.5°C. Plastic is made from fossil fuels, and the world's addiction to single-use plastic is a serious contributor to the climate crisis. If the entire plastic lifecycle were a country, it would be the fifth largest emitter of greenhouse gases¹ in the world. Fast moving consumer goods (FMCGs) companies such as Coca-Cola, PepsiCo, Nestlé, Mondelēz, Danone, Unilever, Colgate-Palmolive, Procter & Gamble, and Mars buy packaging² from manufacturers supplied with plastic resin from fossil fuel companies like ExxonMobil, Shell, Chevron Phillips, Ineos, and Dow. The corporations behind the plastic pollution crisis are also contributing to the climate crisis³.

The Coca-Cola Company has retained its dirty crown as the world's top polluter for the fourth

year in a row, despite voluntary commitments started in 2018 to collect one bottle for every one sold⁴. In fact, brand audits recorded more Coca-Cola products than the next two top polluters combined—as has been the case each year since 2019—suggesting that Coca-Cola's pledge is having little impact on the environmental pollution caused by their products.

PepsiCo's ranking remains steady, as the company has been in the top three plastic polluters every year since 2018. PepsiCo recently announced new voluntary commitments⁵ to halve its use of virgin plastic by 2030. But without a more ambitious shift towards more reusable containers, their status as a top plastic polluter is unlikely to change.

For the first time since we began conducting global brand audits in 2018, Unilever has risen to #3 Top Polluter. This is a particularly egregious development as the company is serving as a Principal Partner for the COP26 in Glasgow⁶ this year.

Young people have the most to lose from the world failing to tackle both the climate and plastic pollution crises, despite having done the least to cause them. Youth in the Global South are living with the heaviest consequences of both the climate crisis and plastic pollution, making it harder for them to tackle either. This is why this year's brand audit report highlights youth voices from around the world, and why 20% of all brand audit events were youth-led.

It is more important than ever that national governments hold corporations accountable for their pollution, as voluntary corporate commitments are failing to reduce pollution. The world cannot continue to rely on fossil fuels, including the significant portion of fossil fuels being turned into plastic.

FMCGs need to REVEAL the full extent of their plastic footprint, REDUCE it significantly by setting and implementing ambitious targets, and REINVENT their packaging to be reusable and plastic-free.

DEDICATION

We dedicate this report to the new generation of youth activists around the world fighting for a livable planet, especially our Break Free From Plastic Youth Ambassadors, whose leadership demonstrates a bold model of resistance which we believe in and support wholeheartedly.

May we succeed together in building a plastic-free future in your lifetimes.



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Acknowledgments

Our deepest gratitude goes out to everyone in the global Break Free From Plastic movement who participated in this year's brand audit.

Thank you for mobilizing your communities to gather this essential data in order to hold corporate polluters accountable. We are also grateful for the pioneering efforts of the original groups who collaborated in 2017 to design the foundational brand audit methodology we still use today: the Global Alliance for Incinerator Alternatives (GAIA), Mother Earth Foundation, Citizen consumer and civic Action

Group (CAG), and Greenpeace Philippines. Thank you to our editorial team for their time and expertise in developing this collaborative report to represent the global Break Free From Plastic movement: Yuyun Ismawati of Nexus3 Foundation, George Harding-Rolls of the Changing Markets Foundation, Claire Arkin of GAIA, Jen Fela of Plastic Pollution Coalition, Nikhilesh Paliath Vinod of Green Army International, and the Break Free From Plastic communications hub and global coordination team. A special thank you to all of the translators who have helped make this report's key takeaways accessible to audiences around the world. Finally, we would like to extend our sincere thanks to the Flotilla Foundation and Plastic Solutions Fund for their generous financial support in making the brand audit coordination and report possible.

Introduction

Plastic is a significant contributor to the climate crisis. If plastic's life cycle were a country, it would be the fifth largest emitter of greenhouse gases⁷ in the world. Even more concerning, left unchecked, plastic production is expected to double within the next 20 years⁸. Petrochemicals, the category of fossil fuels that are made into plastic, now account for 14% of oil use⁹ and are expected to drive half of oil demand growth between now and 2050¹⁰. With the electric vehicle market rapidly expanding¹¹ and 2020 breaking records for renewable energy¹², the fossil industry is increasingly relying on plastics as its lifeline¹³.



PHOTO CREDIT: ZERO WASTE LVIV, ANDRIANA SYVANYCH, 2021

According to new research¹⁴, top polluting consumer goods companies like Coca-Cola, Nestlé, and PepsiCo are enabling the fossil fuel industry's expansion of plastic production. Corporate decisions to continue producing ever more plastic packaging significantly undermine humanity's chances of limiting global temperature rise to no more than 1.5°C above pre-industrial levels, as recommended by the Intergovernmental Panel on Climate Change (IPCC)¹⁵ to avoid catastrophic climate change.

Enough is enough. We will not accept tomorrow's sea level rise and disappearance of coastal communities in exchange for today's single-use plastic cutlery. We will not accept tomorrow's droughts, heat waves, and forest fires in exchange for today's disposable plastic bags. We will not accept tomorrow's super storms and other extreme weather events in exchange for today's individually wrapped consumer goods. The "convenience" of today will cause chaos tomorrow: unless corporations act now, young people will inherit a world in climate turmoil fueled by short-term, profit-driven reliance on single-use plastics.

These single-use plastics are produced by corporations, and these corporations have a name and address. Break

Free From Plastic's mission with our annual global brand audit is to identify these top polluting corporations to hold them accountable and demand real solutions.

Corporations must: reveal the specifics of their plastic use and associated greenhouse gas emissions; significantly reduce the quantity of plastic they produce; and reinvent their product delivery to embrace reuse and refill systems, which have already been proven to win¹⁶.

By collecting data on plastic waste collected at community cleanups around the world, brand audits allow members and supporters of the Break Free From Plastic movement to challenge the plastic industry's story, hold plastic polluting companies accountable, and build a global movement for change. Our movement unites over 2,300 organizations representing millions of supporters around the world. We campaign for systemic change through a holistic approach that tackles plastic pollution across the whole plastics value chain—from extraction to disposal—focusing on prevention rather than cure, and providing effective solutions.

Personal lifestyle changes alone will not solve the plastic or climate crises¹⁷. A report from the International Energy Agency estimates that individual behavioral changes would only account for about 4% of the reductions needed to avert catastrophic climate

change¹⁸. Structural, systemic changes are needed to radically address the interconnected crises of climate change and plastic pollution at the source. This is our reason for conducting brand audits: 69 of the 100 largest economies¹⁹ in the world are companies – not countries. Corporate actors must lead the way to a plastic-free and climate safe future, because they have the power, the means and resources to transform this vision into reality.



PHOTO CREDIT: ZERO WASTE LVIV, ANDRIANA SYVANYCH, 2021

CHAPTER 01

THE PROBLEM

Plastic Pollution is a Climate Justice Issue.

More than 99% of plastics are made from fossil fuels. As such, plastic production also exacerbates climate change²⁰, the defining existential crisis of our time. Greenhouse gases are emitted at every stage of the plastic life cycle²¹, significantly undermining our ability to limit global temperatures to 1.5°C above pre-industrial levels (as recommended by the IPCC²²). Despite people demanding that corporations move away from plastic, industry projections²³ suggest continuing growth. If plastic production proceeds according to industry projections, by 2050 the accumulation of greenhouse

gas emissions from plastic could use 10-13% of our entire remaining carbon budget²⁴. By 2100, plastic's cumulative emissions would be well over half²⁵ of the world's carbon budget.

If we want to truly "turn off the tap" on plastic pollution, we must stop corporations from producing so much plastic in the first place, and keep fossil fuels in the ground.

The corporations behind the plastic pollution crisis are also contributing to the climate crisis²⁶. Big consumer goods brands like Coca-Cola, PepsiCo, Nestlé, Mondelez, Danone, Unilever, Colgate-Palmolive, Procter & Gamble, and Mars all buy packaging²⁷ from manufacturers supplied with plastic resin or petrochemicals from well-known companies like ExxonMobil, Shell, Chevron Phillips, Ineos, and Dow. The carbon footprint behind this supply chain involving the leading purveyors of throw-away plastics (Coca-Cola, Nestlé, PepsiCo) and their fossil fuel company suppliers (Aramco, Total, Exxon, Shell) is often hidden but too significant to be ignored. As the world grapples with the need to move away from fossil fuels, consumer goods companies would be ill-advised to ignore the carbon footprint embedded in their packaging and supply chains.



Those most responsible for creating the twin crises of plastic pollution and climate change need to lead in solving them rather than wasting time and resources in publicity stunts and illusory solutions to greenwash their image. For example, in 2019 top plastic polluter Coca-Cola invested \$4.24 billion for advertising and marketing²⁸, compared to just \$11 million on a river cleanup initiative²⁹ that same year, appearing more like a PR stunt. The best way for Coca-Cola to address its plastic footprint is by producing less of it in the first place, not by cleaning it up once it is already in the environment. Top plastic polluters like Coca-Cola would rather spend money on greenwashing instead of redesigning their product packaging or system of delivering their products to consumers. By failing to take real

action to address the problem at source, these corporate polluters are passing the burden to those least responsible for the climate and plastic crises – especially young people, low-income communities, and countries in the Global South.

We have less than nine years to halve global carbon emissions if we have any chance to limit catastrophic climate change. The time is now for corporate polluters to radically transform their business models and embrace climate justice.

Climate justice is a framework for seeing the climate crisis through a human rights lens (UN Sustainable Development Goals³⁰).

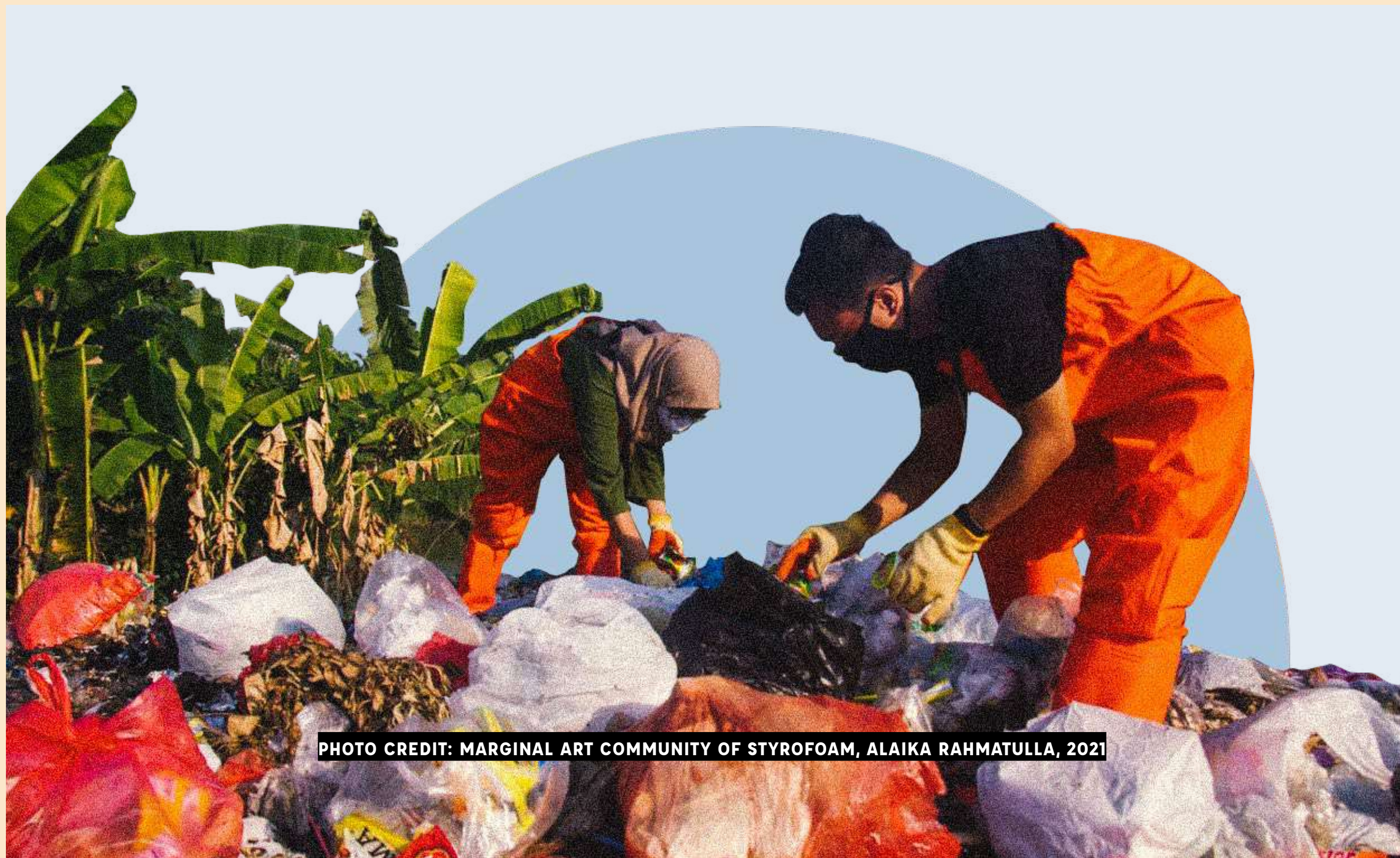


PHOTO CREDIT: MARGINAL ART COMMUNITY OF STYROFOAM, ALAIKA RAHMATULLA, 2021

Corporations that continue to rely on the extensive production and use of throwaway plastics in their business model and operations are guilty of committing human rights transgressions and climate injustices at every step of the plastic lifecycle. Furthermore, the people and sectors most impacted by these offenses have the least ability to enact the sweeping structural change needed to solve it. Here's how corporations' bad decisions burden low-income communities, people of color, Global South countries, and youth the most:

01

When fossil fuels are extracted and transported to make plastic, this process releases significant greenhouse gases³¹ – approximately 108 million metric tons of CO₂e per year³². Next, these raw materials undergo refining. Plastic refining is among the most greenhouse gas-intensive industries³³ in the manufacturing sector. In fact, the vast majority of annual plastic emissions occur at the stage of production³⁴. Furthermore, the fracking boom has fueled an expansion³⁵ of plastic production. In 2015 alone,

global emissions from cracking to produce ethylene were equivalent to 45 million cars³⁶ driven for an entire year!

Corporations most often locate plastic production and manufacturing facilities in low-income communities and communities of color³⁷ who bear the greatest risk of illnesses and health issues associated with exposure to plastic byproduct pollutants. Turning fracked gas into plastic pollutes air and water and causes serious harm to the health of frontline and fenceline communities.

02

Plastics and the toxins they carry can leach from the products we buy into our food, water, and ultimately our bodies³⁸. Despite the documented harm these chemical additives pose, only a miniscule portion of them are currently regulated. In the United States, only 250 of the ~80,000 chemicals registered for commercial use have been directly tested for safety by the EPA³⁹.

Corporations subject us to double standards, offering fully recyclable options for their brands in Global North countries, while similar products sold in Global South countries come packaged in the lowest value packaging⁴⁰ (non-recyclable, with many chemical additives)

under the guise of being “pro-poor”. This creates significant health impacts for people and communities in the Global South, particularly in Southeast Asia, that are being flooded with sachets and other low value plastic packaging.

03

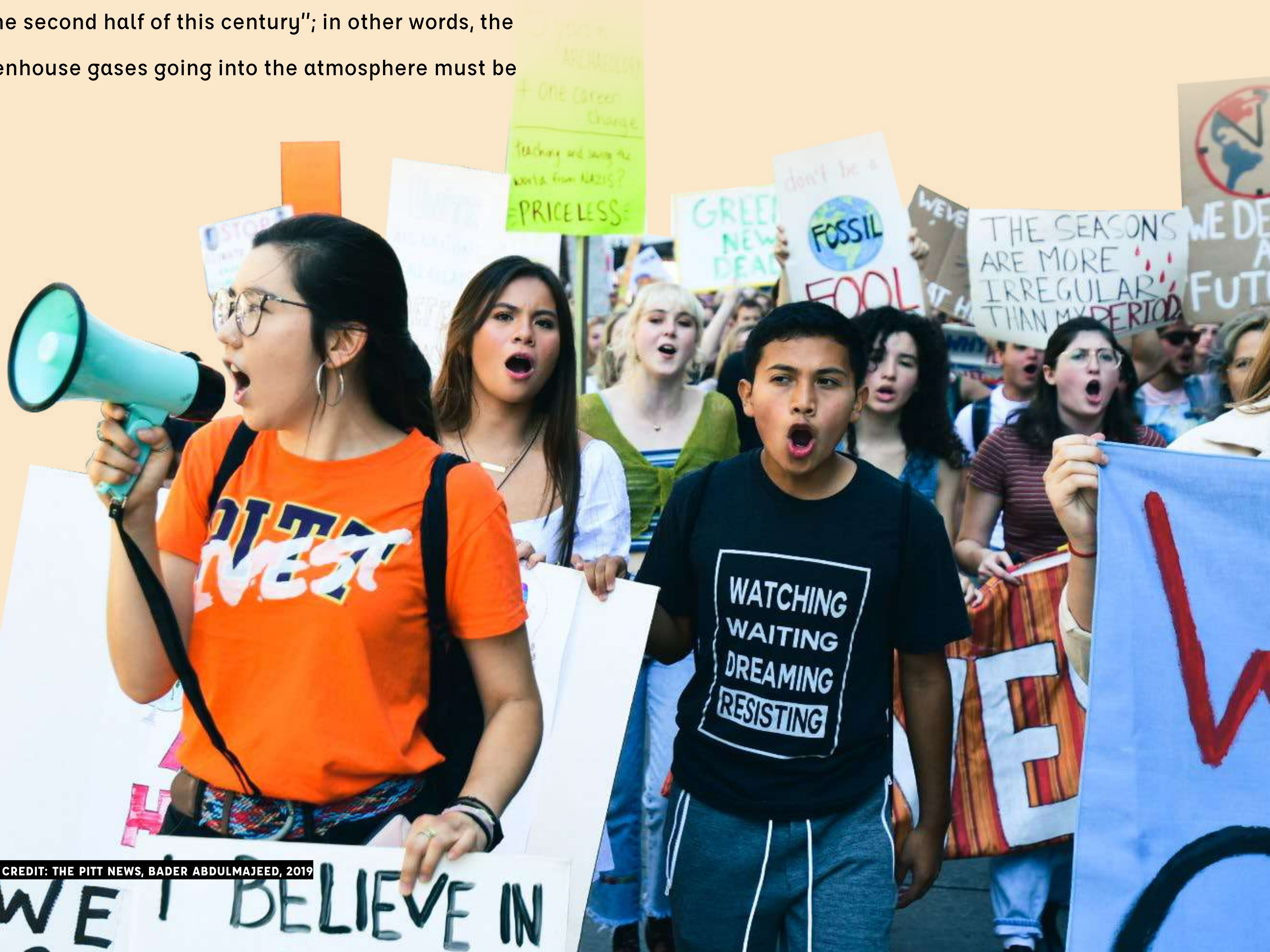
Once disposed of as waste, plastic is primarily landfilled or incinerated – both of which produce greenhouse gas emissions⁴¹. The shipping of low-value, often non-recyclable plastic waste to Global South countries⁴² also generates tons of emissions. Incineration, however, is the primary driver of emissions from plastic waste management and emits more greenhouse gases than coal-fired power plants⁴³. For low-income communities in the Global South, this often takes the form of open burning, with high risks to public health⁴⁴. Global emissions from the incineration of plastic packaging—which represents 40 percent of plastic demand—totaled 16 million metric tons of CO₂e⁴⁵ in 2015. What's worse: the use of incineration in plastic waste management globally is projected to grow dramatically⁴⁶ in the coming decades.

Corporations have failed us by designing flawed products with short-sighted packaging choices that enable the rise of climate-polluting waste management approaches including incineration and its modern thermal waste-to energy variants. Corporations like Coca-Cola, Nestlé, Unilever, and PepsiCo have partnered with fossil fuel companies⁴⁷ for decades to promote plastic recycling as a panacea for the plastic problem, despite the clear limitations of recycling. Unilever and Nestlé have gone a step further, partnering with cement companies in the Philippines and other countries to use their plastic packaging as fuel feedstock for cement kilns⁴⁸. While these corporations line their pockets, the true costs of single-use plastic packaging are externalized, delayed, and deflected. This will most heavily burden poor communities and younger generations, particularly in the Global South, who are inheriting the cumulative impacts of bad corporate decisions that will impact their entire adult lives.

Corporations must be held accountable for the full impacts of the plastic they produce, from extraction to disposal. Focusing solely on waste management and recycling does nothing to address the upstream climate impacts of plastic production, while other interventions—such as burning plastic waste in cement kilns—actively contribute to the climate emergency. The fossil fuel

industry and allied corporations even try to present plastics as part of the solution to climate change (e.g. as a carbon sink) in order to justify their investments in fracking and petrochemical expansion projects, and using the cover of "net zero" emissions. "Net zero" refers to a requirement in the Paris Agreement⁴⁹ for states to "achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century"; in other words, the greenhouse gases going into the atmosphere must be

balanced by removing an equal amount from the atmosphere. However, according to Corporate Accountability's Not Zero report⁵⁰, the world's biggest polluters and governments use the "net zero" concept as a facade to evade responsibility and disguise their inaction or harmful action on climate change". Let us be clear: "Net zero" is not zero, and plastics are a key contributor to climate change.



CHAPTER 02

THE POLLUTERS

Corporate Plastic Polluters Are Contributing to the Climate Crisis.

For the fourth consecutive year, Break Free From Plastic changemakers organized brand audits around the world.

The Top 10 Plastic Polluters ranking reveals the corporations polluting the most places with the most pieces of plastic waste. Our methodology since 2018 has been to first prioritize the total number of countries in which a company's branded waste was recorded, and then companies are ranked by the quantity of branded plastic pieces. Through brand audit data, we determine which companies are polluting the most countries with the most plastic pollution.



POWER TO THE PEOPLE

440 EVENTS WORLDWIDE

IN 45 COUNTRIES



1 IN 5 EVENTS WERE

YOUTH-LED



330,493

PIECES OF PLASTIC WASTE

11,184

VOLUNTEERS

The data that forms the basis of this year's report comes from a collaboration amongst Break Free From Plastic members and allies who mobilized 11,184 volunteers to conduct 440 brand audits in 45 countries.

1 in 5 brand audit events in 2021 were youth-led, in large part thanks to our BFFP Youth Ambassadors.

The brand audits recorded 330,493 pieces of plastic waste, 58% of which was marked with a clear consumer brand. Despite having fewer volunteers than last year, brand audit events in 2021 recorded nearly the same amount of data – 95% as much as the 346,494 pieces of plastic waste gathered in 2020.

Our analysis of this year's data reveals the following corporations as the 2021 Top 10 Corporate Plastic Polluters: **The Coca-Cola Company, PepsiCo, Unilever, Nestlé, Procter & Gamble, Mondelēz International, Philip Morris International, Danone, Mars, Inc., and Colgate-Palmolive.**

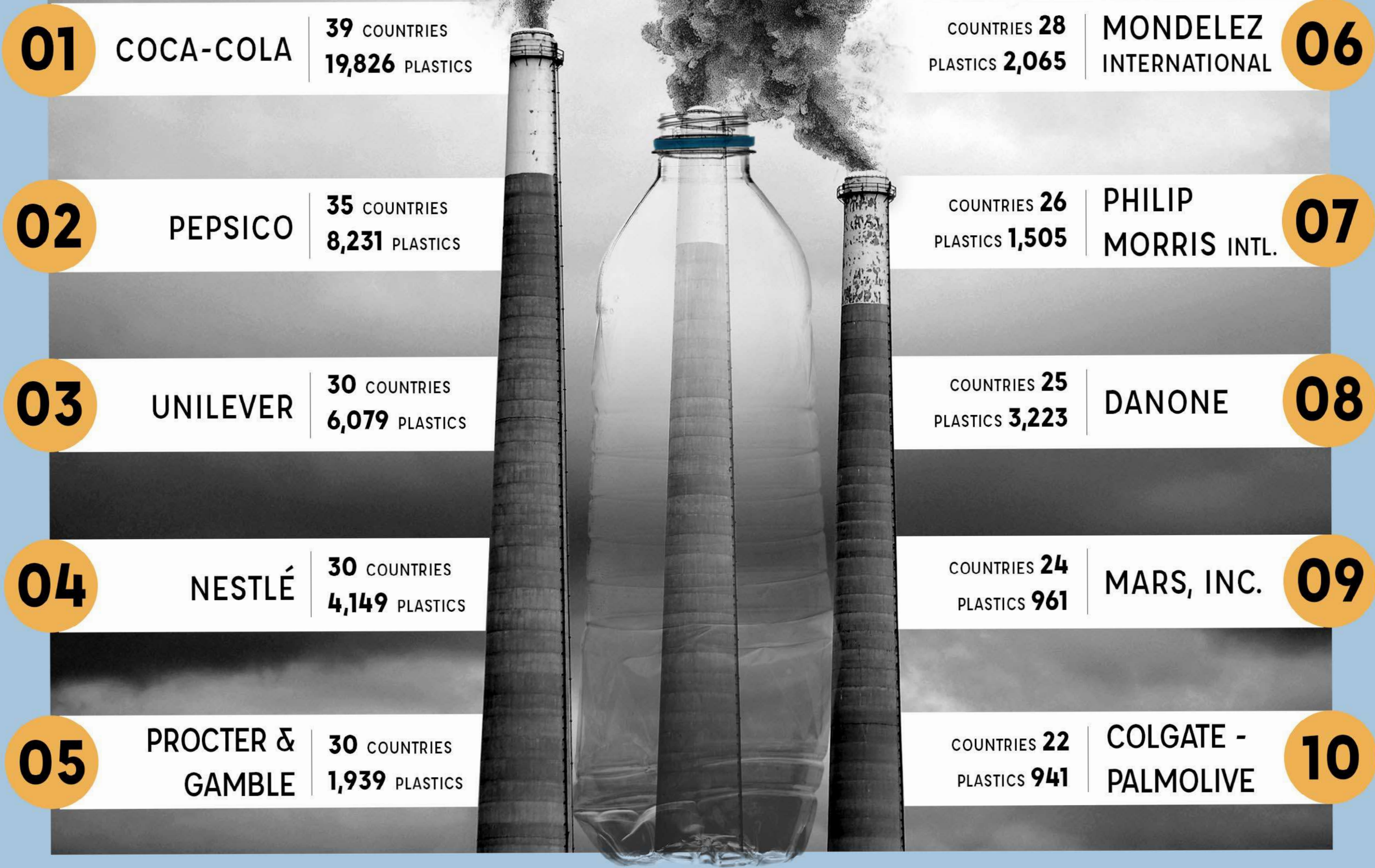
FIGURE 02

2021

TOP 10

CORPORATE PLASTIC POLLUTERS

CORPORATE PLASTIC POLLUTERS ARE FUELING THE CLIMATE CRISIS.



For the fourth year in a row, The Coca-Cola Company continues to dominate as the world's Number One Top Plastic Polluter.

As has been the case each year since 2019, brand audits recorded more Coca-Cola branded plastic waste items than the next two top polluters combined, suggesting that the company's pledge to collect one bottle for every bottle they sell⁵¹ is having little impact on the environmental pollution caused by their products. PepsiCo's ranking has remained steady in the top three every year since 2018. For the first time since we began conducting brand audits in 2018, Unilever has risen to #3 Top Polluter – the very same year that the company is serving as a Principal Partner for the UN climate change summit COP26 in Glasgow⁵².



Many Break Free From Plastic member organizations have published national brand audit reports of their own, revealing the same top polluting companies and reinforcing the fact that Coca-Cola, PepsiCo, Unilever and the others are trashing communities around the world.

In April 2021, Gwinnett Recycles published its findings after conducting brand audits for nine months in the state of Georgia, United States—home of Coca-Cola's global headquarters—and revealed PepsiCo and The Coca-Cola Company as its two top polluters⁵³. Nestlé and Mars were also included in its top ten polluters list. In September 2021, End Plastic Pollution Uganda's national brand audit report⁵⁴ also revealed that its top two polluters were The Coca-Cola Company and PepsiCo, with Unilever in its top ten. Bangladeshi organization Environment and Social Development Organization (ESDO) recently published its brand audit report as well⁵⁵, similarly revealing The Coca-Cola Company as the top polluter, with PepsiCo ranking in third and Unilever also featured in their top ten.

It comes as no surprise that across all 2021 brand audits globally, 10% of branded plastic waste belonged to The Coca-Cola Company – the company that produces the most plastic, according to the Ellen MacArthur Foundation's New Plastics Economy Global Commitment 2020 Progress Report⁵⁶. The Coca-Cola Company topped the list of all publicly disclosed data in the "packaging producers and users" category with almost 3 million metric tons of plastic packaging used in 2020⁵⁷.

New evidence shows us which fossil fuel companies are supplying these fast-moving consumer goods (FMCG) companies, allowing us to uncover where plastic pollution really begins. A recent Greenpeace USA investigation revealed "plastic supply chain connections between every single FMCG company researched and at least one major fossil fuel and/or petrochemical company. Coca-Cola, PepsiCo, Nestlé, Mondelēz, Danone, Unilever, Colgate-Palmolive, Procter & Gamble, and Mars all buy packaging from manufacturers supplied with plastic resin or petrochemicals by well-known companies including ExxonMobil, Shell, Chevron Phillips, Ineos, and Dow."⁵⁸

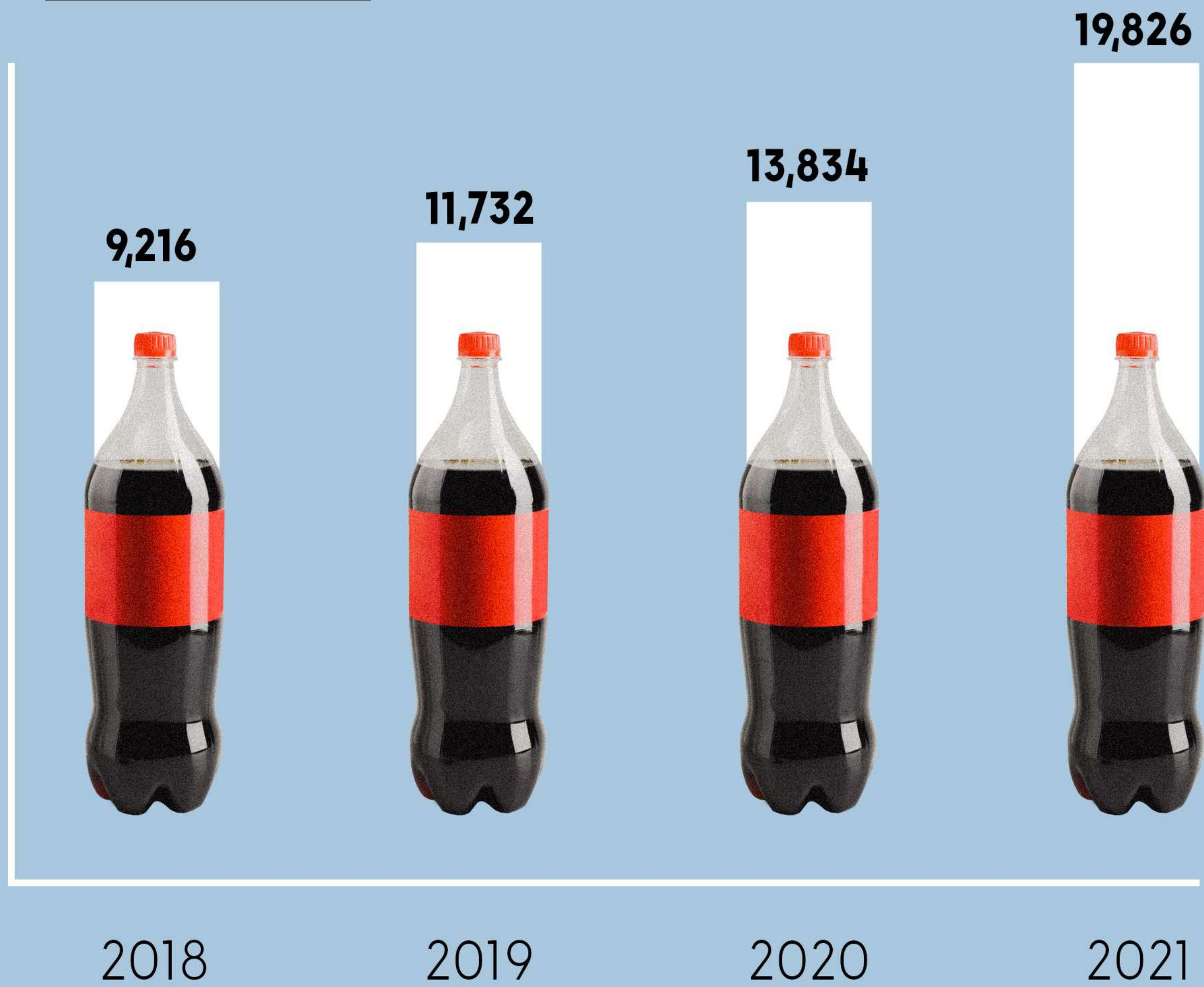
By following plastic packaging's raw materials straight to the source, we now know that the worst plastic polluters are propping up the fossil fuel industry. FMCG companies like those on our top polluter list rely on fossil fuels to conduct their business.



FIGURE 03

TRACKING TOP POLLUTER COCA-COLA OVER TIME

PIECES OF
PLASTIC
WASTE
RECORDED
BY GLOBAL
BRAND AUDITS



SOURCE

FIGURE 04

PLASTIC'S LIFE CYCLE

IF PLASTIC'S LIFE CYCLE WERE A COUNTRY, IT WOULD BE THE

FIFTH
LARGEST
EMITTER

OF GREENHOUSE GASES IN THE WORLD.

Just after China, United States,
India, and Russia.



EXTRACTION



WASTE MGMT



TRANSPORT



MANUFACTURE



REFINING

SOURCE

STRATEGIES TO REDUCE THE GLOBAL CARBON FOOTPRINT OF PLASTICS, NATURE CLIMATE CHANGE (2019)

THE 5 COUNTRIES THAT PRODUCE THE MOST CARBON DIOXIDE (CO2), INVESTOPEDIA (2021)

These corporations' reliance on pumping out massive quantities of single-use plastic packaging also results in pumping out massive amounts of CO₂ emissions into the atmosphere.

In 2020, Coca-Cola produced 2,981,421 metric tons (mT) of plastic.⁵⁹

This amounts to 14,907,105 mT of CO₂ emissions⁶⁰ – equivalent to 3,241,996 passenger vehicles driven for one year.⁶¹

FIGURE 05

THE REAL COST OF PLASTIC

*COCA-COLA
ANNUAL
REVENUE
IN 2020:*

\$33 BILLION

US DOLLARS

COST OF GHG
EMISSIONS
FROM ACROSS
THE PLASTIC
LIFECYCLE:

OVER

\$171

BILLION

US DOLLARS

**THE
SOCIAL
LIFETIME
COST** OF
PLASTIC
PRODUCTION
ESTIMATED
FOR
2040:

\$7.1

TRILLION

US DOLLARS

SOURCE

COCA-COLA, FORTUNE (2021)

PLASTICS: THE COSTS TO SOCIETY, THE ENVIRONMENT AND THE ECONOMY, WWF (2021)

PHOTO CREDIT: JP VALERY / UNPLASH

The cost of collecting, sorting, disposing and recycling the huge quantities of plastic waste generated globally in 2019 alone was over us\$32 billion⁶² – almost the same amount that Coca-Cola raked in as annual revenue the following year⁶³.

But these numbers pale in comparison to the cost of greenhouse gas emissions (GHG) from across the plastic lifecycle (over us\$171 billion)⁶⁴ or the societal lifetime cost of plastic production estimated for 2040 (us\$7.1 trillion)⁶⁵.

**THESE
SOCIAL
LIFETIME
COSTS
INCLUDE:**

The costs of GHG emissions from production and waste management processes; costs to governments and citizens based on taxes used to fund waste management; costs of plastic pollution to marine ecosystems including effects on fisheries and tourism, and more.

Most importantly, the biggest price tag for plastic pollution is costing young people their future, as entire generations will pay the ultimate price by inheriting a world in climate chaos.

1 IN 5 BRAND AUDITS IN 2021 WERE YOUTH-LED.

*Here are some of
their stories:*



A YOUNG VOLUNTEER WITH LIMPANDO TRILHAS HELPS OUT AT A BRAND AUDIT NEAR RIO DE JANEIRO, BRAZIL

PHOTO CREDIT: LIMPANDO TRILHAS, RENATO ERREJOTA, 2021

12-YEAR-OLD NINA, AN ENVIRONMENTAL ACTIVIST WITH ECOTON AND RIVER WARRIOR IN EAST JAVA, INDONESIA, PULLING PLASTIC WASTE FROM THE ROOTS OF MANGROVES.

[LEARN MORE ABOUT NINA HERE](#)

PHOTO CREDIT: ECOTON, PRIGI ARISANDI, 2021

“

The biggest brand audit that I participated in was conducted on the west side of Rio de Janeiro, with more than a hundred participants. Within a few hours, we collected about 1580 kg of waste from the Joatinga Canal and audited 3268 plastic waste items. Everyone in the event was stunned about the pile of plastic trash, mostly made by beverage bottles and food packaging. We found a bag of crisps from 1996 – it is even older than me! One of the organizers tried to use his own jet ski to support the activities, but he couldn't. The large amount of plastic pieces in the canal damaged the jet ski's engine.

- RAFAEL EUDES, AGE 24, BRAZIL

”

“

We did a brand audit four times in different locations in Indonesia. In the Malang Regency River we found a lot of personal care products from Unilever. We also had an adventure in a mangrove park that was entangled in single-use plastic. What was unforgettable from this brand audit activity was that we found a lot of packaging from around 1990 until early 2000 that was still intact, only the colors were faded. This provides clear evidence we really have to avoid single-use plastics.

- SOFI AZILAN AINI, AGE 21, INDONESIA

”

CHAPTER 03

THE POSSIBILITIES

Change Can Only Happen if Corporations and Governments Take Meaningful Action Now.

The solutions to the climate crisis and the plastic pollution crisis are one and the same. Cutting fossil fuel use is essential, and in order to do this, corporations must reduce plastic packaging. The top plastic-polluting companies have made voluntary commitments that they claim will shrink their plastic footprint, but to date these are making little difference. Plastic production is set to triple by 2050⁶⁶, and as 42% of all non-fiber plastic made so far has been used for packaging⁶⁷, the bulk of this new plastic is likely intended for use as packaging for FMCG companies like Coca-Cola, PepsiCo, Unilever, Nestlé, and Procter & Gamble.

Without meaningful change in their business models, corporate polluters risk facing serious legal and financial consequences. Many FMCG companies are failing to report information about material risks⁶⁸ to their investors and other stakeholders, which could lead to legal action⁶⁹. And according to the current projected growth

of the plastic industry, the societal lifetime cost estimates of plastic production for 2040 could reach US\$7.1 trillion⁷⁰. Corporations urgently need to commit to ambitious changes to reduce plastic and redesign their packaging – changes that must be enforced and supported by national and international policies.

Here's what corporate and government action can look like:

01 Plastic-polluting corporations must reveal their total global plastic footprint, make an absolute reduction in the amount of plastic produced, and redesign their product delivery systems for refill & reuse.

REVEAL THE TOTAL GLOBAL PLASTIC FOOTPRINT - INCLUDING TOTAL GHG EMISSIONS ASSOCIATED WITH THEIR PLASTIC USE

To measure progress on reducing plastic, companies first need to know how much they are making – and they need to share that data publicly. Companies must be transparent about the number of units of plastic packaging they produce, and not only report weights



PHOTO CREDIT: ESDO, HRIDITA FERDOUS, 2021

(as is mostly the case now). Reporting plastic use per item is important to ensure that plastic reductions are not only achieved through light-weighting, i.e. reducing the amount of plastic per

item while still producing the same number of items.

Moreover, the same companies must account for and disclose the greenhouse gas emissions associated with the production, management and disposal of their plastic products and packaging. ** To date: eight of this year's top ten worst corporate plastic polluters have disclosed their plastic packaging volume in metric tons⁷¹ as signatories to the Ellen MacArthur Foundation's New Plastics Economy Global Commitment. The Coca-Cola Company topped the list of all publicly disclosed data in the "packaging producers and users" category with almost 3 million metric tons of plastic packaging used in 2020⁷².*

REDUCE THE AMOUNT OF PLASTIC PRODUCED

Companies must drastically reduce their plastic use in absolute terms—by weight and by units—and set clear, measurable targets that are tracked publicly. ** To date: Although some corporations have made modest reductions, The Coca-Cola Company and Mars actually increased plastic production in 2020⁷³.*

REDESIGN PRODUCT DELIVERY SYSTEMS FOR REFILL & REUSE

The only way to really cut plastic use is to find an alternative method for delivering products to customers without single-use plastic. The answer is reuse! Reusable packaging has been around for centuries, and, combined with modern technology, it is already being used by many companies today. The top polluting corporations need to redesign their business models to focus on reusable packaging that is safe, affordable and accessible to all. ** To date: Only 1.9% of plastic packaging used or produced by top polluting corporations in 2019 was reusable, demonstrating virtually zero progress from 2018⁷⁴.*

02

National governments must work together to enforce meaningful regulations on plastic polluting corporations through international climate policy.

International climate policy, such as those negotiated at the 26th United Nations Climate Change Conference (COP26), offers a critical opportunity for world leaders to take bold action on plastic, waste, and climate simultaneously. As governments begin to solidify their nation-

ally determined contributions (NDCs) in line with the Paris Agreement, it is important to avoid misleading measures masquerading as climate solutions under the framework of "net zero". The burning of plastic waste, investments in unproven technologies like chemical recycling, and continuing production of fossil fuel-based plastics would result in massive carbon emissions and seriously undermine the world's ability to limit global heating to 1.5°C. Plastic emits greenhouse gases throughout its life cycle, and expanding plastic production through loopholes such as carbon offsets/trading schemes and unproven technologies (e.g. carbon capture and storage, chemical recycling, and geoengineering) only serves to delay and distract from the action needed to implement real solutions to the twin crises of climate change and plastic pollution.

INSTEAD, WE URGE GOVERNMENTS TO:

→ Commit to real zero targets, with increased ambition to ensure a just transition towards a truly circular economy. This requires closing the emissions gap and ensuring global temperatures do not rise above 1.5°C.

→ Invest in waste reduction measures and zero waste systems in national climate action plans, including reuse-based alternative product delivery systems. This requires excluding waste-to-energy incineration from NDCs and other climate plans.

→ Hold petrochemical and FMCG companies accountable for plastic pollution and their enormous contribution to global heating, in line with the "producer pays" principle. This requires stopping petrochemical expansion, reducing plastic production, phasing out single-use plastic and packaging across different sectors, and leaving fossil fuels in the ground.

→ Finance a just transition model with robust social protection and decent income and benefits for workers, including waste pickers engaged in recycling, reuse, and waste prevention. This requires excluding the current reliance on offsets, carbon trading, carbon removal or carbon capture and storage schemes to reach "net zero" targets.

It is vital that governments hold fossil fuel companies and corporate plastic polluters accountable. Break Free From Plastic is calling on COP26 Delegates: Our Climate is Not Disposable!

03 Member States of the United Nations Environment Program (UNEP) must negotiate a global plastics treaty.

Plastic pollution arises from every step of the plastic lifecycle, but existing efforts to tackle it have mainly focused on regional and local waste management. The United Nations Environment Assembly (UNEA) conducted a study of existing legislation and actions on plastic pollution and concluded that efforts are fragmented and inadequate. Thankfully, there is already considerable support from the international community for a global plastics treaty. Almost 70% of UN member states have indicated support for a treaty⁷⁵, while more than 30 countries so far have co-sponsored a motion to open talks that will be voted on in the 2022 UNEA session. Furthermore, there is also a substantial business case for companies to support such a treaty⁷⁶, with a range

of economic and reputational benefits, including reduction of operational complexity and compliance risk across markets.

Break Free From Plastic is calling on UNEP Member States to agree to develop a legally binding treaty that tackles plastic pollution along the full life cycle. The treaty must reduce the production and use of plastic, and ensure that plastic is free from harmful chemicals and able to be recycled and disposed of safely.



PHOTO CREDIT: END PLASTIC POLLUTION UGANDA, NIRERE SADRACH, 2021

CHAPTER 04

THE PRICE TO PAY

Young People Are Demanding Corporate Accountability to Reclaim Their Futures.

Children under the age of 15 make up 26% of the world's population⁷⁷ today, and they will inherit the climate crisis which is caused in part by the world's addiction to fossil fuel-based plastic. According to the IPCC, we have only until 2030 to cut carbon emissions by half in order to limit catastrophic climate change. Many of the top corporate plastic polluters that are driving these trends are evading the full costs of their industry and transferring the environmental, social, and health costs onto the next generation to deal with in their lifetimes.

Plastic affects the lives of young people across production, use and disposal. Youth in Global South countries will likely be more affected than those in developed countries. This chapter spotlights what the world will look like for

some of these young people if corporations are not held accountable and business continues as usual. Break Free From Plastic's young leaders come from different countries around the world, many from Global South countries. In the year 2030, they will be 25-33 years old, young adults building a livelihood and perhaps starting families of their own. The climate impacts of plastic throughout its life cycle threaten their ability to lead healthy, fulfilled lives.



Extraction and Production

UNITED STATES

The United States produces 20% of the world's fossil fuels⁷⁸ - the biggest share globally. If business continues as usual, petrochemicals will account for nearly half of global oil demand growth by 2050⁷⁹ - thanks largely to an increase in plastic production. Climate change will mean more extreme weather events and other forms of climate chaos. But if corporations act now to transition toward clean energy and waste reduction, leaving fossil fuels in the ground, younger generations could have a fighting chance to live in safe climate conditions.

"Growing up, I was used to seeing the detrimental impacts caused by the continual extraction of fossil fuels near my home in Houston, Texas. Witnessing oil spills, chemical leaks, and hurricanes fueled my decision to join the Break Free From Plastic Movement. Young people across the Gulf and the world are now taking a stand against these industries so we can create a future where our generation can thrive."

- ALEX GORDON, AGE 21

PROGRAM COORDINATOR FOR FLORIDA PIRG STUDENTS AT ECKERD COLLEGE



Manufacturing

INDIA

Plastic manufacturing has become among the most energy - and emissions - intensive industries in the manufacturing sector⁸⁰ – and the fastest growing. While scientists tell us that we need to transition away from fossil fuels, corporations like Adani Enterprises are investing billions into manufacturing more plastic from the dirtiest of fossil fuels: coal⁸¹. This coal-to-polyvinyl chloride (PVC, a type of plastic) project aims to ship coal from Australia and other countries to a manufacturing plant in India to produce two million tons of PVC plastic per year. For a country like India already grappling with extremely high levels of air pollution⁸², this decision is unjustifiable. Young people deserve clean air, instead of a world where millions of people die⁸³ from poisoned air.

“At the current rate of plastic production, we cannot dream of a future. What we need now is for companies to find suitable replacements and build circular systems without plastics.”

- AKHILESH ANILKUMAR, AGE 21

BFFP YOUTH AMBASSADOR FROM INDIA AFFILIATED WITH BRING BACK GREEN AND FRIDAYS FOR FUTURE



Distribution

PHILIPPINES

The Philippines is flooded with single-use plastic. Sachets are the most concerning type of packaging, comprising around 52% of residual plastic waste, as Filipinos dispose of ~164 million sachets⁸⁴ daily. Due to their small size, they clog waterways, harm wildlife and threaten tourism and fisheries that many Filipinos depend on for their livelihoods. Corporations are aggressively marketing sachets into Global South countries by claiming they allow low-income people to buy small quantities at low prices. But this is only because "their true costs are externalized, unaccounted for by corporations that have profited handsomely from the sachet economy, and disproportionately paid for by society⁸⁵". Zero waste is the way of the future. Filipino communities have already had impressive success going zero waste⁸⁶, and have even utilized zero waste systems as a climate mitigation strategy⁸⁷.

"I feel disappointed that the leaders we elected to serve the people chose to side with big corporations that pollute our environment when it is their duty to provide the communities with a healthful ecology. What's even worse is that they don't get to feel and experience the gravity of plastic pollution that our communities are going through right now. I personally feel robbed of our future healthy environment just because of their neglect in saving it."

- MARK KRYLLE PAITAN, AGE 20

BFFP YOUTH AMBASSADOR FROM THE PHILIPPINES AND PRESIDENT OF ZERO WASTE YOUTH NEGROS ORIENTAL



Point of Sale

GHANA

In Ghana, like many countries in West Africa, many people access clean drinking water in water sachets⁸⁸. These are small sealed plastic packages that are produced and disposed of in such large quantities that they often end up clogging drains, breeding mosquitoes, and causing floods⁸⁹. In 2021 brand audits organized by Green Africa Youth Organization (GAYO), data from across Ghana revealed 50 different brands of water sachets. Drinking water could be made available through the tap, or water cooler stations instead of individual single-use sachets. We know this is possible, because GAYO already made it happen at their brand audit event this year! Now it's the corporations' turn to follow their lead.

“If I could meet the CEOs of this year’s top plastic polluting companies, I would ask them: Is it okay to prioritize profit over nature’s loss?”

- BETTY OSEI BONSU, AGE 24

BFFP YOUTH AMBASSADOR FROM GHANA AND PROJECT COORDINATOR WITH GREEN AFRICA YOUTH ORGANIZATION (GAYO)



Consumption

BRAZIL

One of the most concerning aspects of the plastic pollution crisis is that it affects human bodies from the moment we are born. Babies in the womb can be exposed to microplastic in their mother's placenta⁹⁰. Plastic additives in daily products and packaging can contribute towards declining fertility⁹¹ due in part to endocrine-disrupting chemicals⁹².

“If current trends continue, by the time I’m 53 years old in 2050, I will live in a world with four times⁹³ the amount of plastic that we have today. I no longer want to live in a world in which plastic causes as many harmful effects to human health and environment as it does currently. It’s time for corporations to stop promoting false solutions and focus on the real one: immediately eliminate single-use plastic and move from a throwaway culture to a circular economy.”

- RAFAEL EUDES, AGE 24

BFFP YOUTH AMBASSADOR FROM BRAZIL AFFILIATED WITH REUNI/CIRCULACT



End of Plastic's Life Cycle

INDONESIA

In Indonesia, about 9 million tons of plastic waste is generated every year and only 11% is recycled⁹⁴. Additionally, Indonesia imports about 800,000 metric tons⁹⁵ of plastic waste annually. This is part of a global waste trade, in which plastic trash from Global North countries are exported to Global South countries for recycling, but it can often overwhelm the infrastructure. In Indonesia, 81% of waste is mismanaged⁹⁶. As this plastic waste piles up in landfills or incinerators, the chemical additives used in packaging can be released into the environment. Recent studies have found plastic chemical additives entering our food chains⁹⁷, raindrops⁹⁸, and even babies' feces⁹⁹!

“I hope that the industry and government will soon open their eyes, hearts and minds to immediately stop the exploitation of fossil fuels and stop the climate crisis as well as redesign plastic packaging.”

- SOFI AZILAN AINI, AGE 21

BFFP YOUTH AMBASSADOR FROM INDONESIA AND FOUNDER OF NETWORK OF WOMAN ACTION TO SAVE THE EARTH

(NOWASTE) SURABAYA



Conclusion

CORPORATIONS

Plastic-polluting corporations must REVEAL their total global plastic footprints and greenhouse gas emissions, REDUCE the amount of plastic produced by ending their reliance on single-use packaging, and REDESIGN their products and delivery systems for refill & reuse.

NATIONAL GOVERNMENTS

National governments must work together to develop and enforce meaningful regulations. It is vital that governments hold fossil fuel companies and corporate plastic polluters accountable for their contributions to the climate crisis. National governments must also avoid climate-polluting false solutions to the plastic crisis, such as incineration and chemical recycling.

INTERNATIONAL COMMUNITY

Member States of the UNEP must develop a legally binding treaty that tackles plastic pollution across the life cycle, with a particular focus on design of products

and the upstream pollution from fossil fuel extraction, refining, and plastic production. Without meaningful change in their business models, corporate polluters risk facing serious legal and financial consequences.

LEGAL CONSEQUENCES

Despite legal obligations in some jurisdictions to disclose material risks to investors and other stakeholders, many FMCG companies are not reporting information about these risks¹⁰⁰. Ignoring warnings from market specialists, rating agencies, investors and financial institutions, corporations are instead mostly treating plastics as a public relations problem rather than as a material risk to their business¹⁰¹. These polluters could mitigate risks by reducing reliance on single-use plastics, but they are currently failing to do so. These failures could lead to legal action¹⁰². In fact, Break Free From Plastic members in the United States have filed three different lawsuits in 2021 alone against The Coca-Cola Company for public nuisance and defective product liability¹⁰³, false and deceptive advertising¹⁰⁴, and misleading consumers on plastic bottle recycling¹⁰⁵.

FINANCIAL CONSEQUENCES

The cost of plastic to both the environment and society

is at least 10 times higher than its market price paid by primary plastic producers¹⁰⁶. This generates significant costs to countries, where the financial burden is unjustly shouldered by taxpayers. The cost of GHG emissions from across the plastic life cycle amounts to more than US\$171 billion, in addition to US\$32 billion spent to collect, sort, dispose and recycle the huge quantities of plastic waste generated in 2019 alone¹⁰⁷. Unless urgent action is taken to stop the current projected growth of the plastic industry, the societal lifetime cost estimates of plastic production for 2040 could reach US\$7.1 trillion¹⁰⁸; this is equivalent to approximately 85% of global spending on health in 2018 and greater than the 2019 gross domestic product (GDP) of Germany, Canada, and Australia combined.

The world's top plastic-polluting corporations—Coca-Cola, PepsiCo, Unilever, Nestlé, and Procter & Gamble, together with the others named in this report—are the leading contributors to the global plastics crisis. These fast-moving consumer goods companies are driving the fossil fuel industry's expansion at a time when we need to shift towards clean energy and circular systems.

It is not enough for top polluters to make voluntary commitments: national governments and international decision makers must hold corporations accountable through regulations and a legally binding global plastic treaty that recognizes plastic production and pollution as part of the climate crisis.



Methodology

FOUNDATIONS

The foundational brand audit methodology was designed by the Global Alliance for Incinerator Alternatives (GAIA), Mother Earth Foundation, Citizen consumer and civic Action Group (CAG), and Greenpeace Philippines. These pioneering groups collaborated in 2017 to organize the first large-scale brand audit on Freedom Island in the Philippines. Our current methodology remains mostly unchanged apart from a few simplifications.

RECRUITMENT

Throughout 2021, Break Free From Plastic (BFFP) mobilized people around the world to organize brand audits in their communities. During this timeframe, participants were recruited through our BFFP social media channels, email listservs, newsletters, and our movement members who spread the word across their networks and communities. All participants took part in the brand audit on a voluntary basis.

TRAINING

BFFP provided live online training webinars for leaders to support them with everything from event

planning logistics to data collection details. In addition, BFFP developed a new training platform with extensive tutorial videos, answers to frequently asked questions, and an option to sign up for additional support as needed. We also provided a short animated training video with subtitles available in 16 languages.

COVID-19

Due to the coronavirus pandemic, extra steps were taken to prioritize the health and safety of participants. Brand audit event organizers were asked to follow a Cleanup and Brand Audit Coronavirus Risk Assessment Guide and adhere to the safety procedures. When outdoor cleanup and brand audit gatherings were not deemed safe due to COVID-19, we encouraged individual outdoor brand audits. We also presented the option for indoor brand audits at home as a last resort.

SITE SELECTION

Participants chose their preferred site for the clean-up and brand audit. Brand audit sites have ranged from urban city streets, parks, forests, beaches, coastal areas, and any other place where plastic pollution accumulates. Due to pandemic restrictions against large public gatherings in some places, participants also had the option of conducting indoor brand audits at home. This involved designating a collection container for all the plastic

packaging they disposed of during one week and auditing the total at the end of the 7th day.

DATA RECORDING

Participants used the [brand audit toolkit](#), [data card](#), and visual guide, available in 13 languages, to guide their data collection process in a standardized manner. The data card required participants to document the following categories about the plastic pollution collected:

- BRAND NAMES
- ITEM DESCRIPTIONS
- TYPES OF PRODUCTS
- TYPES OF MATERIALS
- LAYERS

DATA ANALYSIS

Participants submitted their data using one of three standardized digital platforms: the [BFFP online form](#), the [TrashBlitz](#) web app, or an [Excel spreadsheet](#). Outdoor data and indoor data were analyzed together to calculate the top 10 global corporate polluters. From Break Free From Plastic's perspective, all plastic is pollution - not just the plastic litter collected outdoors.

While outdoor brand audit data tells us about plastic that has escaped the waste stream, indoor brand audit data as well as waste picker data reveal that plastic within the

waste stream is also problematic. As a fossil fuel product, single-use plastic packaging causes pollution from the moment it is produced. Even if it does end up being properly collected, plastic packaging is often incinerated or exported to other countries unequipped to manage it.

ACCESSIBILITY

42 participants qualified for funds ranging from \$300 to \$500 USD to help cover the expenses associated with hosting a brand audit event.

LIMITATIONS

This report relies on self-reported data submitted by diverse participants from all over the world. The data submitted is a sample of global plastic waste and cannot claim to be fully representative of all plastic pollution. It is possible that some brands not captured in this report may produce even more plastic pollution than those listed in this report. The data reflect the plastic brands most commonly found in Asia, Europe, and North America where BFFP has a strong presence. Taking into account the 45 countries represented, the brand audit data results give us a good indication of the most common brands found polluting communities around the world.



BREAK FREE
FROM PLASTIC

References

1. Zheng, J., & Suh, S. (2019). Strategies to reduce the global carbon footprint of plastics. *Nature Climate Change*, 9, 374–378.
2. Greenpeace (2021). The Climate Emergency Unpacked: How Consumer Goods Companies are Fueling Big Oil's Plastic Expansion. <https://www.greenpeace.org/usa/reports/the-climate-emergency-unpacked/>
3. Ibid.
4. The Coca-Cola Company. (n.d.). Sustainable Packaging. The Coca-Cola Company. <https://www.coca-colacompany.com/sustainable-business/packaging-sustainability>
5. Packaging Getaway. (2021). What is PepsiCo hoping for from 'pep+'? <https://www.packaging-gateway.com/features/what-is-pepsico-hoping-for-from-pep/>
6. Cabinet Office, & Sharma, A. (2021). Unilever joins COP26 as a Principal Partner. Gov.Uk. <https://www.gov.uk/government/news/unilever-joins-cop26-as-a-principal-partner>
7. Zheng, J., & Suh, S. (2019). Strategies to reduce the global carbon footprint of plastics. *Nature Climate Change*, 9, 374–378. <https://www.nature.com/articles/s41558-019-0459-z>
8. Lebreton, L., & Andrady, A. (2019). Future scenarios of global plastic waste generation and disposal. *Nature Palgrave Communications*, 5. <https://doi.org/10.1057/s41599-018-0212-7>
9. International Energy Agency. (2018). Petrochemicals set to be the largest driver of world oil demand, latest IEA analysis finds. <https://www.iea.org/news/petrochemicals-set-to-be-the-largest-driver-of-world-oil-demand-latest-iea-analysis-finds>
10. Ibid.
11. International Energy Agency. (2020). Global EV Outlook 2020. <https://www.iea.org/reports/global-ev-outlook-2020>
12. International Renewable Energy Agency. (2021). World Adds Record New Renewable Energy Capacity in 2020. <https://www.irena.org/Newsroom/Pages/Press-releases/2021/APR/World-adds-record-new-renewable-energy-capacity-in-2020>
13. Deutsche Welle. (2021, February 7). Plastic: A lifeline for the fossil fuel industry? <https://plastic-pollution-crisis-and-fossil-fuel-industry.dw.com/>
14. Greenpeace. (2021). The Climate Emergency Unpacked: How Consumer Goods Companies are Fueling Big Oil's Plastic Expansion. <https://www.greenpeace.org/usa/reports/the-climate-emergency-unpacked/>
15. The Intergovernmental Panel on Climate Change. (2018). Global Warming of 1.5°C: An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty. <https://www.ipcc.ch/sr15/>
16. Upstream. (2021). Reuse Wins: The environmental, economic, and business case for transitioning from single-use to reuse in food service. <https://upstream-solutions.org/reuse-wins-report>
17. International Energy Agency. (2021). Net Zero by 2050: A Roadmap for the Global Energy Sector. <https://www.iea.org/reports/net-zero-by-2050>
18. Ibid.
19. Global Justice Now. (2018). 69 of the richest 100 entities on the planet are corporations, not governments, figures show. <https://www.globaljustice.org.uk/news/69-richest-100-entities-planets-are-corporations-not-governments-figures-show/>
20. Center for International Environmental Law, Environmental Integrity Project, FracTracker Alliance, Global Alliance for Incinerator Alternatives, 5Gyres, & Break Free From Plastic. (2019). Plastic & Climate: The Hidden Costs of a Plastic Planet. <https://www.ciel.org/plasticandclimate/>
21. Greenpeace. (2021). The Climate Emergency Unpacked: How Consumer Goods Companies are Fueling Big Oil's Plastic Expansion. <https://www.greenpeace.org/usa/reports/the-climate-emergency-unpacked/>
22. The Intergovernmental Panel on Climate Change. (2018). Global Warming of 1.5°C: An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty. <https://www.ipcc.ch/sr15/>
23. Sparrow, N. (2021, May 19). Solid Growth Forecast for the Plastics Industry. *Plastics Today*. <https://www.plasticstoday.com/industry-trends/solid-growth-forecast-plastics-industry>
24. Center for International Environmental Law, Environmental Integrity Project, FracTracker Alliance, Global Alliance for Incinerator Alternatives, 5Gyres, & Break Free From Plastic. (2019). Plastic & Climate: The Hidden Costs of a Plastic Planet. <https://www.ciel.org/plasticandclimate/>
25. Ibid.
26. Greenpeace. (2021). The Climate Emergency Unpacked: How Consumer Goods Companies are Fueling Big Oil's Plastic Expansion. <https://www.greenpeace.org/usa/reports/the-climate-emergency-unpacked/>
27. Ibid.
28. TPT Bureau. (2020, March 4). Coca-Cola Spent 4.24bn for Advertising in 2019, 20bn in the Last 5 Years. *The Policy Times*. <https://thepolicytimes.com/coca-cola-spent-4-24bn-for-advertising-in-2019-20bn-in-the-last-5-years/>
29. The Coca-Cola Company. (2020, January 15). Benioff Ocean Initiative and The Coca-Cola Foundation Announce \$11 Million in Funding to Clean Up Rivers and Stem Flow of Waste to Oceans. The Coca Cola Company. <https://www.coca-colacompany.com/press-releases/benioff-ocean-initiative-and-the-coca-cola-foundation-announcement>
30. United Nations. (2019). Climate Justice. United Nations Sustainable Development Goals. <https://www.un.org/sustainabledevelopment/blog/2019/05/climate-justice/>

31. Center for International Environmental Law, Environmental Integrity Project, Frac-Tracker Alliance, Global Alliance for Incinerator Alternatives, 5Gyres, & Break Free From Plastic. (2019). Plastic & Climate: The Hidden Costs of a Plastic Planet. [HTTPS://WWW.CIEL.ORG/PLASTICANDCLIMATE/](https://www.ciel.org/plasticandclimate/)
32. Ibid.
33. Ibid.
34. Center for International Environmental Law. (2019). Annual Plastic Emissions to 2050. [HTTPS://WWW.CIEL.ORG/WP-CONTENT/UP-LOADS/2019/05/CIEL-FIG-2-EMISSIONS-GROWTH-SUMMARY-01.PNG](https://www.ciel.org/wp-content/uploads/2019/05/CIEL-FIG-2-EMISSIONS-GROWTH-SUMMARY-01.PNG)
35. Break Free From Plastic. (2021). The Petrochemical Industry. [HTTPS://DRIVE.GOOGLE.COM/FILE/D/11PJCDB-9FOJVLKAW7ZSJSGIDKQUQC_OJI/VIEW](https://drive.google.com/file/d/11PJCDB-9FOJVLKAW7ZSJSGIDKQUQC_OJI/view)
36. Center for International Environmental Law, Environmental Integrity Project, Frac-Tracker Alliance, Global Alliance for Incinerator Alternatives, 5Gyres, & Break Free From Plastic. (2019). Plastic & Climate: The Hidden Costs of a Plastic Planet. [HTTPS://WWW.CIEL.ORG/PLASTICANDCLIMATE/](https://www.ciel.org/plasticandclimate/)
37. Bell, J. (2016, April 25). 5 Things to Know About Communities of Color and Environmental Justice. Center for American Progress. [HTTPS://WWW.AMERICANPROGRESS.ORG/ISSUES/RACE/NEWS/2016/04/25/136361/5-THINGS-TO-KNOW-ABOUT-COMMUNITIES-OF-COLOR-AND-ENVIRONMENTAL-JUSTICE/](https://www.americanprogress.org/issues/race/news/2016/04/25/136361/5-things-to-know-about-communities-of-color-and-environmental-justice/)
38. Spink Health. (2018). Microplastics discovered in human stools across the globe in "first study of its kind." EurekAlert! [HTTPS://WWW.EUREKALERT.ORG/NEWS-RE-LEASES/812659](https://www.eurekalert.org/news-releases/812659)
39. Center for Effective Government. (n.d.). Reducing Our Exposure to Toxic Chemicals: Stronger State Health Protections at Risk in Efforts to Reform Federal Chemical Law. [HTTPS://WWW.FOREFFECTIVEGOV.ORG/REDUC-ING-CHEMICAL-EXPOSURE](https://www.foreffectivegov.org/reducing-chemical-exposure)
40. Global Alliance for Incinerator Alternatives. (2020). SACHET ECONOMY: Big Problems in Small Packets. [HTTPS://WWW.NO-BURN.ORG/WP-CONTENT/UPLOADS/SACHET-ECONOMY-SINGLE-PAGE.PDF](https://www.no-burn.org/wp-content/uploads/sachet-economy-single-page.pdf)
41. Center for International Environmental Law, Environmental Integrity Project, Frac-Tracker Alliance, Global Alliance for Incinerator Alternatives, 5Gyres, & Break Free From Plastic. (2019). Plastic & Climate: The Hidden Costs of a Plastic Planet. [HTTPS://WWW.CIEL.ORG/PLASTICANDCLIMATE/](https://www.ciel.org/plasticandclimate/)
42. Global Alliance for Incinerator Alternatives. (2019). DISCARDED: Communities on the Frontlines of the Global Plastic Crisis. [HTTPS://WASTETRADESTORIES.ORG/](https://wastetradestories.org/)
43. Center for International Environmental Law, Environmental Integrity Project, Frac-Tracker Alliance, Global Alliance for Incinerator Alternatives, 5Gyres, & Break Free From Plastic. (2019). Plastic & Climate: The Hidden Costs of a Plastic Planet. [HTTPS://WWW.CIEL.ORG/PLASTICANDCLIMATE/](https://www.ciel.org/plasticandclimate/)
44. Velis, C. and Cook, E. (2021). Mismanagement of Plastic Waste through Open Burning with Emphasis on the Global South: A Systematic Review of Risks to Occupational and Public Health. Environmental Science & Technology 55 (11), 7186-7207. DOI: 10.1021/acs.est.0c08536 [HTTPS://PUBS.ACS.ORG/DOI/ABS/10.1021/ACS.EST.OC08536](https://pubs.acs.org/doi/abs/10.1021/acs.est.0c08536)
45. Center for International Environmental Law, Environmental Integrity Project, Frac-Tracker Alliance, Global Alliance for Incinerator Alternatives, 5Gyres, & Break Free From Plastic. (2019). Plastic & Climate: The Hidden Costs of a Plastic Planet. [HTTPS://WWW.CIEL.ORG/PLASTICANDCLIMATE/](https://www.ciel.org/plasticandclimate/)
46. Ibid.
47. Greenpeace. (2021). The Climate Emergency Unpacked: How Consumer Goods Companies are Fueling Big Oil's Plastic Expansion. [HTTPS://WWW.GREENPEACE.ORG/USA/RE-PORTS/THE-CLIMATE-EMERGENCY-UN-PACKED/](https://www.greenpeace.org/usa/reports/the-climate-emergency-unpacked/)
48. CEMEX Holdings Philippines (21 Jan 2019). CEMEX partners with Unilever for TSEK Clean Community Program. [HTTPS://WWW.CEMEXHOLDINGSPHILIPPINES.COM/-/CEMEX-PARTNERS-WITH-UNILE-VER-FOR-TSEK-CLEAN-COMMUNITY-PRO-GRAM](https://www.cemexholdingsphilippines.com/-/cemex-partners-with-unilever-for-tsek-clean-community-program)
49. United Nations (2015). Paris Agreement. Article 4.1. [HTTPS://UNFCCC.INT/FILES/ESSENTIAL_BACK-GROUND/CONVENTION/APPLICATION/PDF/EN-GLISH_PARIS_AGREEMENT.PDF](https://unfccc.int/files/essential_background/convention/application/pdf/english_paris_agreement.pdf)
50. ActionAid, Corporate Accountability, Friends of the Earth International, Global Campaign to Demand Climate Justice, Third World Network, & what next? (2020). NOT ZERO: How 'net zero' targets disguise climate inaction. [HTTPS://WWW.CORPORATEACCOUNTABILITY.ORG/RESOURCES/EXPLAINER-NOT-ZERO/](https://www.corporateaccountability.org/resources/explainer-not-zero/)
51. The Coca-Cola Company. (2021). Sustainable Packaging Collection Strategy. [HTTPS://WWW.COCA-COLACOMPANY.COM/SUSTAINABLE-BUSINESS/PACKAGING-SUS-TAINABILITY/COLLECT](https://www.coca-colacompany.com/sustainable-business/packaging-sustainability/collect)
52. Cabinet Office, & Sharma, A. (2021). Unilever joins COP26 as a Principal Partner. Gov. Uk. [HTTPS://WWW.GOV.UK/GOVERNMENT/NEWS/UNILEVER-JOINS-COP26-AS-A-PRINCIPAL-PARTNER](https://www.gov.uk/government/news/unilever-joins-cop26-as-a-principal-partner)
53. Gwinnett Recycles. (2021). On the Ground in Gwinnett: Plastic Litter Report. [HTTPS://WWW.GWINNETTRECYCLES.COM/PLAS-TIC-LITTER/](https://www.gwinnettrecycles.com/plastic-litter/)
54. End Plastic Pollution Uganda, & Break Free From Plastic. (2021). [HTTPS://ENDPLASTICPOLLUTIONNOW.BLOGSPOT.COM/P/BRAND-AUDIT-2021_7.HTML?M=1](https://endplasticpollutionnow.blogspot.com/p/brand-audit-2021_7.html?m=1)
55. Environment and Social Development Organization. (2021). The Bitter Truth of Plastic Pollution. [HTTPS://ESDO.ORG/THE-BITTER-TRUTH-OF-PLASTIC-POLLUTION-BRAND-AUDIT-2021/](https://esdo.org/the-bitter-truth-of-plastic-pollution-brand-audit-2021/)
56. Ellen MacArthur Foundation. (2020). The Global Commitment 2020 Progress Report - Organisation Reports. [HTTPS://ARCHIVE.ELLENMACARTHURFOUNDA-TION.ORG/RESOURCES/APPLY/GLOBAL-COM-MITMENT-PROGRESS-REPORT/ORGANISA-TION-REPORTS](https://archive.ellenmacarthurfoundation.org/resources/apply/global-commitment-progress-report/organisation-reports)
57. Ibid.
58. Greenpeace. (2021). The Climate Emergency Unpacked: How Consumer Goods Companies are Fueling Big Oil's Plastic Expansion. [HTTPS://WWW.GREENPEACE.ORG/USA/RE-PORTS/THE-CLIMATE-EMERGENCY-UN-PACKED/](https://www.greenpeace.org/usa/reports/the-climate-emergency-unpacked/)
59. Ellen MacArthur Foundation. (2020). The Global Commitment 2020 Progress Report - Organisation Reports - The Coca-Cola Company. [HTTPS://ARCHIVE.ELLENMACARTHURFOUN-DATION.ORG/RESOURCES/APPLY/GLOB-AL-COMMITMENT-PROGRESS-REPORT/ORGANISATION-REPORTS/REPORT/PPU/REC9MNY2TTZWOIKE8](https://archive.ellenmacarthurfoundation.org/resources/apply/global-commitment-progress-report/organisation-reports/report/ppu/rec9mny2ttzwoike8)

60. Greenpeace (2021). The Climate Emergency Unpacked: How Consumer Goods Companies are Fueling Big Oil's Plastic Expansion. <https://www.greenpeace.org/usa/reports/the-climate-emergency-unpacked/>
61. United States Environmental Protection Agency. (2021). Greenhouse Gas Equivalencies Calculator. United States Environmental Protection Agency. <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>
62. World Wildlife Fund. (2021). Plastics: The Costs to Society, the Environment and the Economy. https://www.panda.org/wwf_news/?3507866/these-costs-for-plastic-produced-in-2040-will-rise-to-us71-trillion-unless-urgent-action-is-taken
63. Fortune. (2021). Coca-Cola. Fortune 500. <https://fortune.com/company/coca-cola/fortune500/>
64. World Wildlife Fund. (2021). Plastics: The Costs to Society, the Environment and the Economy. https://www.panda.org/wwf_news/?3507866/these-costs-for-plastic-produced-in-2040-will-rise-to-us71-trillion-unless-urgent-action-is-taken
65. Ibid.
66. Center for International Environmental Law, Environmental Integrity Project, FracTracker Alliance, Global Alliance for Incinerator Alternatives, 5Gyres, & Break Free From Plastic. (2019). Plastic & Climate: The Hidden Costs of a Plastic Planet. <https://www.ciel.org/plasticandclimate/>
67. Geyer, R., Jambeckand, J., & Lavender Law, K. (2017). Production, use, and fate of all plastics ever made. *Science Advances*, 3(7). <https://www.science.org/doi/10.1126/sciadv.1700782>
68. Client Earth. (2021). Material Issues: Big Food and the rise of plastic-related risk. <https://www.clientearth.org/media/hsm-jmull/material-issues-big-food-and-the-rise-of-plastic-related-risk.pdf>
69. Ibid.
70. World Wildlife Fund. (2021). Plastics: The Costs to Society, the Environment and the Economy. https://www.panda.org/wwf_news/?3507866/these-costs-for-plastic-produced-in-2040-will-rise-to-us71-trillion-unless-urgent-action-is-taken
71. Ellen MacArthur Foundation. (2020). The Global Commitment 2020 Progress Report - Organisation Reports. <https://archive.ellenmacarthurfoundation.org/resources/apply/global-commitment-progress-report/organisation-reports>
72. Ellen MacArthur Foundation. (2020). The Global Commitment 2020 Progress Report - Organisation Reports - The Coca-Cola Company. <https://archive.ellenmacarthurfoundation.org/resources/apply/global-commitment-progress-report/organisation-reports/report/ppu/rec9mny2ttzwoike8>
73. Changing Markets. (2020). With a combined plastic footprint of 9.7m tonnes, here's how the top 10 polluters stack up this year. Some have cut down, but @CocaCola and @MarsGlobal have actually increased their plastic use. It's time they stop #TalkingTrash and commit to reduction! <http://talking-trash.com>. <https://twitter.com/changingmarkets/status/1330898884919500802>
74. Ellen MacArthur Foundation. (2020). The Global Commitment 2020 Progress Report. <https://emf.thirdlight.com/link/ilomcm-1dqjtn-knjubr/@/preview/?o>
75. Pickstone, S. (n.d.). Does the world need a 'Paris Agreement for plastics'? Ends Report. <https://www.endsreport.com/article/1716639/does-world-need-paris-agreement-plastics>
76. World Wildlife Fund for Nature, Ellen MacArthur Foundation, & Boston Consulting Group. (2020). The Business Case for a UN Treaty on Plastic Pollution. https://www.plasticpollutiontreaty.org/un_treaty_plastic_poll_report.pdf
77. Szmigiera, M. (2021). World population by age and region 2021. Statista. <https://www.statista.com/statistics/265759/world-population-by-age-and-region/>
78. Desjardins, J. (2019). Mapped: fossil fuel production by country. World Economic Forum. <https://www.weforum.org/agenda/2019/06/mapped-fossil-fuel-production-by-country/>
79. FracTracker Alliance. (2021). National Energy and Petrochemical Map. FracTrackerAlliance. <https://www.fractracker.org/2020/02/national-energy-petrochemical-map>
80. Center for International Environmental Law, Environmental Integrity Project, FracTracker Alliance, Global Alliance for Incinerator Alternatives, 5Gyres, & #breakfreefromplastic. (2019). Plastic & Climate: The Hidden Costs of a Plastic Planet. <https://www.ciel.org/plasticandclimate/>
81. Readfearn, G. (2021). Adani blasted over 'toxic' \$4bn plan to use Australian coal to make plastic in India. *The Guardian*. <https://www.theguardian.com/business/2021/jun/17/adani-blasted-over-toxic-4bn-plan-to-use-australian-coal-to-make-plastic-in-india>
82. India Today Web Desk. (2021). New WHO air quality guidelines show almost all of India is polluted. *India Today*. <https://www.indiatoday.in/science/story/who-air-quality-guidelines-in-dia-climate-change-pollution-emissions-1856111-2021-09-23>
83. Osseiran, N., & Lindmeier, C. (2018). 9 out of 10 people worldwide breathe polluted air, but more countries are taking action. World Health Organization. <https://www.who.int/news/item/02-05-2018-9-out-of-10-people-worldwide-breathe-polluted-air-but-more-countries-are-taking-action>
84. Global Alliance for Incinerator Alternatives. (2020). SACHET ECONOMY: Big Problems in Small Packets. <https://www.no-burn.org/wp-content/uploads/sachet-economy-single-page.pdf>
85. Ibid.
86. Mother Earth Foundation. (n.d.). #goforzerowaste. Mother Earth Foundation. <http://www.motherearthphil.org/>
87. Benosa, S., & Global Alliance for Incinerator Alternatives. (n.d.). From Clogged Waterways to Zero Waste: Potrero's Journey to Zero Waste. Zero Waste World. <https://zerowasteworld.org/zwpotrero/>
88. Stoler, J. (2017). From curiosity to commodity: a review of the evolution of sachet drinking water in West Africa. *WIREs*, 4(3). <https://doi.org/10.1002/wat2.1206>
89. Break Free From Plastic. (2019). Branded Volume II: Identifying the World's Top Corporate Plastic Polluters. <https://www.breakfreefromplastic.org/wp-content/uploads/2020/07/branded-2019.pdf>

90. Ragusa, A., Svelato, A., Santacroce, C., Catalano, P., Notarstefano, V., Carnevali, O., Papa, F., Rongioletti, M. C. A., Baiocco, F., Draghi, S., D'Amore, E., Rinaldo, D., Matta, M., & Giorgini, E. (2021). Plasticenta: First evidence of microplastics in human placenta. *Environment International*, 146. [HTTPS://WWW.SCIENCEDIRECT.COM/SCIENCE/ARTICLE/PII/S0160412020322297](https://www.sciencedirect.com/science/article/pii/S0160412020322297)
91. Swan, S. H., Collins, T., Myers, J. P., Edwards, T., & Hauser, R. (2021). Count Down: How Our Modern World Is Threatening Sperm Counts, Altering Male and Female Reproductive Development, and Imperiling the Future of the Human Race. [HTTPS://WWW.HEALTHANDENVIRONMENT.ORG/WEBINARS/96557](https://www.healthandenvironment.org/webinars/96557)
92. Flaws, J., Damdimopoulou, P., Patisaul, H. B., Gore, A., Raetzman, L., & Vandenberg, L. N. (2020). Plastics, EDCs & Health: A Guide for Public Interest Organizations and Policy-makers on Endocrine Disrupting Chemicals & Plastics. [HTTPS://WWW.ENDOCRINE.ORG/TOPICS/EDC/PLASTICS-EDCS-AND-HEALTH](https://www.endocrine.org/topics/edc/plastics-edcs-and-health)
93. Heinrich Böll Stiftung, & Break Free From Plastic. (2019). Plastic Atlas: Facts and Figures about the World of Synthetic Polymers. [HTTPS://WWW.BOELL.DE/EN/PLASTICATLAS](https://www.boell.de/en/plasticatlas)
94. Kementerian Lingkungan Hidup Dan Kehutanan, United Nations Environment Programme, International Environmental Technology Centre, & Institute for Global Environmental Strategies. (2020). National Plastic Waste Reduction Strategic Actions for Indonesia. [HTTPS://WWW.UNEP.ORG/IETC/RESOURCES/POLICY-AND-STRATEGY/NATIONAL-PLASTIC-WASTE-REDUCTION-STRATEGIC-ACTIONS-INDONESIA](https://www.unep.org/ietc/resources/policy-and-strategy/national-plastic-waste-reduction-strategic-actions-indonesia)
95. Loasana, N. (2020). Plastic recycling industry needs more govt support to help Indonesia reach lofty goal. *The Jakarta Post*. [HTTPS://WWW.THEJAKARTAPOST.COM/NEWS/2020/12/10/PLASTIC-RECYCLING-INDUSTRY-NEEDS-MORE-GOVT-SUPPORT-TO-HELP-INDONESIA-REACH-LOFTY-GOAL.HTML](https://www.thejakartapost.com/news/2020/12/10/plastic-recycling-industry-needs-more-govt-support-to-help-indonesia-reach-lofty-goal.html)
96. Dell, J. (2019). 157,000 Shipping Containers of U.S. Plastic Waste Exported to Countries with Poor Waste Management in 2018. *Plastic Pollution Coalition*. [HTTPS://WWW.PLASTICPOLLUTIONCOALITION.ORG/BLOG/2019/3/6/157000-SHIPPING-CONTAINERS-OF-US-PLASTIC-WASTE-EXPORTED-TO-COUNTRIES-WITH-POOR-WASTE-MANAGEMENT-IN-2018](https://www.plasticpollutioncoalition.org/blog/2019/3/6/157000-shipping-containers-of-us-plastic-waste-exported-to-countries-with-poor-waste-management-in-2018)
97. International Pollutants Elimination Network, & Arnika. (2021). Plastic Waste Disposal Leads to Contamination of the Food Chain. [HTTPS://IPEN.ORG/SITES/DEFAULT/FILES/DOCUMENTS/IPEN-PLASTIC-WASTE-CONTAMINATION-FULL-EN.PDF](https://ipen.org/sites/default/files/documents/ipen-plastic-waste-contamination-full-en.pdf)
98. Xia, W., Rao, Q., Denga, X., Chen, J., & Xie, P. (2020). Rainfall is a significant environmental factor of microplastic pollution in inland waters. *Science of the Total Environment*, 732. [HTTPS://WWW.SCIENCEDIRECT.COM/SCIENCE/ARTICLE/ABS/PII/S0048969720325821?VIA%3DIHUB](https://www.sciencedirect.com/science/article/abs/pii/S0048969720325821?via=ihub)
99. Zhang, J., Wang, L., Trasande, L., & Kannan, K. (2021). Occurrence of Polyethylene Terephthalate and Polycarbonate Microplastics in Infant and Adult Feces. *Environmental Science and Technology Letters*. [HTTPS://PUBS.ACS.ORG/DOI/10.1021/ACS.ES-TLETT.1C00559](https://pubs.acs.org/doi/10.1021/acs.estlett.1c00559)
100. Client Earth. (2021). Material Issues Big Food and the rise of plastic-related risk. [HTTPS://WWW.CLIENTEARTH.ORG/MEDIA/HSM-JMULL/MATERIAL-ISSUES-BIG-FOOD-AND-THE-RISE-OF-PLASTIC-RELATED-RISK.PDF](https://www.clientearth.org/media/hsm-jmull/material-issues-big-food-and-the-rise-of-plastic-related-risk.pdf)
101. Ibid.
102. Ibid.
103. Plastic Pollution Coalition. (2021). Environmental Group Wins Key Step in Battle Against Big Plastic. *Plastic Pollution Coalition*. [HTTPS://WWW.PLASTICPOLLUTIONCOALITION.ORG/BLOG/2021/2/24/ENVIRONMENTAL-GROUP-WINS-KEY-STEP-IN-BATTLE-AGAINST-BIG-PLASTIC](https://www.plasticpollutioncoalition.org/blog/2021/2/24/environmental-group-wins-key-step-in-battle-against-big-plastic)
104. Donovan, S. (2021). Earth Island Institute Files Lawsuit Against Coca-Cola for False Advertising. *Plastic Pollution Coalition*. [HTTPS://WWW.PLASTICPOLLUTIONCOALITION.ORG/BLOG/2021/6/8/EARTH-ISLAND-INSTI-TUTE-FILES-LAWSUIT-AGAINST-COCA-COLA-FOR-FALSE-ADVERTISING](https://www.plasticpollutioncoalition.org/blog/2021/6/8/earth-island-institute-files-lawsuit-against-coca-cola-for-false-advertising)
105. Carr, C., & McCrary, M. (2021). The Coca-Cola Company, BlueTriton Brands, and Niagara Bottling Sued For Misleading Consumers On Plastic Bottle Recycling. *Sierra Club*. [HTTPS://WWW.SIERRACLUB.ORG/PRESS-RELEASES/2021/06/COCA-COLA-COMPANY-BLUETRITON-BRANDS-AND-NIAGARA-BOTTLING-SUED-FOR-MISLEADING](https://www.sierraclub.org/press-releases/2021/06/coca-cola-company-blue-triton-brands-and-niagara-bottling-sued-for-misleading)
106. World Wildlife Fund. (2021). *Plastics: The Costs to Society, the Environment and the Economy*. [HTTPS://WWW.PANDA.ORG/WWF_NEWS/?3507866/THESE-COSTS-FOR-PLASTIC-PRODUCED-IN-2040-WILL-RISE-TO-571-TRILLION-UNLESS-URGENT-ACTION-IS-TAKEN](https://www.panda.org/wwf_news/?3507866/these-costs-for-plastic-produced-in-2040-will-rise-to-571-trillion-unless-urgent-action-is-taken)
107. Ibid.
108. Ibid.

CHAPTER 2 INFOGRAPHICS

FIGURE 03

- **Break Free From Plastic (2018)**. BRANDED Vol I: In Search of the World's Top Corporate Plastic Polluters.
- **Break Free From Plastic (2019)**. BRANDED Vol II: Identifying the World's Top Corporate Plastic Polluters.
- **Break Free From Plastic (2020)**. BRANDED Vol III: Demanding Corporate Accountability for Plastic Pollution.

FIGURE 04

- **Zheng, J., & Suh, S. (2019)**. Strategies to reduce the global carbon footprint of plastics. *Nature Climate Change*, 9, 374–378.
- **Blokhin, A. (2021)**. The 5 Countries That Produce the Most Carbon Dioxide (CO₂). *Investopedia*.

FIGURE 05

- **Fortune. (2021)**. *Coca-Cola. Fortune 500*.
- **World Wildlife Fund. (2021)**. *Plastics: The Costs to Society, the Environment and the Economy*.
- Ibid.