www.plasticovershoot.earth

PLASTIC OVERSHOOT DAY

This is the day when the generation of plastic waste exceeds the capacity of waste management, leading to environmental pollution.

September 5, 2024

2024 report summary

earth action

PLASTIC

OVER SHOOT DAY

Published by EA – Earth Action, Lausanne, Switzerland

Citation Plastic Overshoot Day – Report 2024, EA-Earth Action, 2024.

Authors Sarah Perreard (Corresponding author: sarah.perreard@e-a.earth)
Julien Boucher
Martina Gallato
Melissa I. Gomis
Paolo Mazzatorta
Adrienne Gaboury
Noémie Voirin

Designed by Downstairs - www.downstairs.design

Photography ©Unsplash: Michael Dziedzic, Martin de Arriba, Caleb Gregory

Available from www.plasticovershoot.earth

PLASTIC OVERSHOOT DAY

What is Plastic Overshoot day?

Plastic... is... everywhere

And the amount of plastic produced is expected to double by 2040, which will triple the volume of plastic pollution.
The underlying issues with plastic pollution are the excessive production and use of plastic across the planet and the lack of sufficient waste management systems to properly process plastic after it has been used. This results in a significant amount of plastic ending up in the environment every year, with a staggering amount ultimately finding its way into the ocean.

Every year, there is a day when the amount of plastic waste surpasses the capability of waste management systems to effectively manage it. This day is known as Plastic Overshoot Day, and in 2024, the global community will reach this critical point on **September 5th**.

As with any complex issue, understanding the problem is the first step towards implementing solutions. By tracking Plastic Overshoot Day every year, we can identify the magnitude of the plastic waste problem, in which direction it is evolving, and hold governments, businesses, and individuals accountable for their contribution to the problem.

There are reasons for optimism, namely, with the global community having recently agreed to negotiate terms for a Plastics Treaty aimed at tackling plastic waste challenges worldwide. This global treaty should be concluded by the end of this year.

It's time for action. Together, we can work towards reducing plastic consumption, improving waste management systems, promoting sustainable alternatives, and advocating for policy changes to combat plastic pollution and protect our oceans and the environment for future generations.

Behind the project

EA – Earth Action is a Swiss-based team of sustainability leaders committed to help organizations & people create sustainable change by developing strong science, meaningful methodologies & actionable plans.

The team of dedicated sustainability leaders from the Swiss-based Association EA – Earth Action is committed to conducting innovative research and providing consulting services for local and global organizations, while leveraging their non-profit arm to address significant environmental issues.

Plastic Overshoot Day emerged out of EA's dedication to investing profits and talents into impactful initiatives.

This project is a natural extension of EA's extensive research and publications in the plastics field, and is built upon the methodology of Plasteax[1], the pioneering database offering comprehensive plastic waste management data at both country and polymer-specific levels.

As with all EA and Plasteax efforts, Plastic Overshoot Day is committed to transparency, raising awareness about plastic pollution, and driving sustainable solutions to tackle a pressing global challenge.

Contact us: contact@plasticovershoot.earth

1. EA - Earth Action (2023) Plasteax free dataset - all packaging and generic polymer, model version 2.0 (**plasteax.earth**)

Foreword

The latest Plastic Overshoot Day Report arrives amid preparations for the fourth round of negotiations for the UN Plastic Treaty negotiations to be held in Ottawa, Canada. The data is unequivocal: improvements in waste management capacity are outpaced by rising plastic production, making progress almost invisible.

The comparative analysis of the last four years described in our report confirm the ever-growing threat of plastic pollution. The assumption that increased recycling and waste management capacity will solve the plastics crisis is flawed. Without aggressive reduction at the source, our struggle against plastic pollution will be a holding pattern at best.

The report « Towards Ending Plastic Pollution by 2040 » proposes 15 global rules for a systemic overhaul. Their adoption and stringent enforcement are a prerequisite for the treaty's efficacy. The staggering $5.22 trillion investment needed by 2040 underscores the scale of transformation required. At INC-4 and INC-5, negotiators must move beyond rhetoric to action.

The 2024 Plastic Overshoot Day report can serve both as a testament to our current trajectory and as a blueprint for necessary action. The decisions made today will echo through ecosystems and economies for generations. We call for a steadfast pursuit of science-driven, robust policy that matches the scale of the plastic pollution problem. Let 2024 be the year we pivot to a trajectory that embraces reduction, ensuring the legacy we leave is not one buried in plastic.

PLASTIC OVERSHOOT DAY

Glossary

Collection rate
Ratio between the plastic waste collected and generated. Waste Collected includes: Waste export, Recycling, Properly disposed and Improperly disposed.

Extended Producer Responsibility (EPR)
A policy approach where brands, plastic packaging producers and importers are held accountable for the environmental impact of their products throughout their lifecycle by paying a fee. EPR policies are based on the "polluter pays" principle.

Export
Export of any plastic by the country, in any form, be it primary polymer, plastic product, or plastic embedded in a product. It does not include export of plastic waste.

Import
Import of any plastic into the country, in any form, be it primary polymer, plastic product, or plastic embedded in a product. It does not include import of plastic waste.

Improperly disposed
Waste fraction that is disposed in a waste management system where leakage is expected to occur, such as a dumpsite or an unsanitary landfill. A dumpsite is a particular area where large quantities of waste are deliberately disposed in an uncontrolled manner and can be the result of both the formal and informal sectors. A landfill is considered as unsanitary when waste management quality standards are not met, thus creating the potential for leakage.

Mismanaged
The sum of uncollected and improperly managed waste.

Mismanaged Waste Index (MWI)
The sum of uncollected and improperly managed waste, divided by the waste generated.

Leakage
Plastic that is released into rivers, lakes and oceans.

Production
Polymer production either from primary virgin source or secondary source (recycled plastic from previous year). It does not include the manufacturing of final products in the country, as this would lead to double counting.

Properly disposed
Waste fraction that is disposed in a waste management system where no leakage is expected to occur, such as an incineration facility or a sanitary landfill.

Incineration
« Proper » incineration is technology that destroys waste through burning while respecting technical requirements and operating conditions to avoid environmental pollution.

Sanitary landfill
Particular area where large quantities of waste are deliberately disposed in a controlled manner (e.g. waste being covered on a daily basis, as well as the bottom of the landfill designed in a way to prevent waste from leaching out).

Domestic recycling
Recycling of waste collected in the country. This does not include recycling of imported waste or waste collected for recycling in the country that is exported abroad.

Uncollected (excl. littering)
Waste fraction that is not collected, either by the formal or the informal sector. It excludes littering.

Littering
The act of dropping rubbish on the ground in public areas.

Waste export
Plastic waste collected in the country and exported abroad. It does not include the re-export of imported waste.

Waste generated
Country domestic plastic waste generation computed as: Production + Import – Export – Added stock.

Waste import
Import of plastic waste from other countries.

PLASTIC OVERSHOOT DAY

Table of contents

01. Introductory note

This report provides a full assessment of the contribution to plastic pollution worldwide through the lense of the Plastic Overshoot Days since 2021, with a focus on this year's date. It is based on the baseline year 2024 from municipal solid waste (packaging, textile and household), with a global plastic production of 220 Mt, that is distributed across different country archetypes: The Moderate Polluters, The Overloaders, The Low-Waste-Producing Polluters, The Toxic Waste Producers, The Transactors, The Self-Sustainers.

The intention of this research is not to criticise the countries waste management, but to increase the level of knowledge and awareness of the issue, so as to pave the way towards a better plastic management system.

This report therefore fills a key knowledge gap and provides a new and important insight to enable us to better prioritise research and actions around macro- and micro-plastic leakage, and plastic pollution in general.

Systemic solutions should be developed and implemented by the concerned countries.

DISCLAIMER:
As for the Earth Overshoot Day, the Plastic Overshoot Day is estimated and published annually. Revisions to calculations and scope may occur between yearly publications due to improved data and new findings taking place over time. Therefore, for consistency with the latest reported data and scientific understanding, Overshoot dates for past years are recalculated in every new publication, ensuring each year's metrics share a common dataset and calculation methods. Values may be readjusted compared to previous communications. Consequently, we suggest readers to always refer to the latest Plastic Overshoot Day publication, where all values are comparable. Looking at media accounts from previous years may lead to inaccurate conclusions.

The information and data in this report regarding Plastic Overshoot Day, including estimates on additives leakage and microplastic leakage, are provided for informational purposes only. Plastic Overshoot Day is an estimate and not an exact date. We have made reasonable efforts to ensure accuracy; however, it is important to note that science knowledge on synthetic textile is less advanced than for packaging and that the estimates for additives and microplastics may be less detailed. These estimates are approximations and should not replace comprehensive studies. This report does not constitute legal or professional advice and should not be relied upon as such. The authors, publishers, and distributors of this report are not liable for errors or consequences arising from its use. Please note that the field of plastic waste management is constantly evolving, and new research may impact the understanding of the issues discussed. Readers are encouraged to stay informed about the latest developments. By accessing and using this report, you agree to the above disclaimer and accept that the authors, publishers, and distributors are not responsible for any claims or losses resulting from its use.

02. Summary

Plastic Overshoot Day marks the point when the amount of plastic waste generated from single use packaging, household and textile sectors exceeds the world's capacity to manage it, resulting in environmental pollution. In 2024, the global Plastic Overshoot Day is projected to occur on **September 5th**. Each country has its own Plastic Overshoot Day, which is determined by the amount of plastic waste generated and the country's capacity to manage it.

The Plastic Overshoot Day alone does not provide the whole picture of this complex issue. Hence, to facilitate targeted and effective solutions, six country archetypes have been established, enabling the profiling of countries based on determining factors such as local per capita plastic consumption, the import and export volumes of waste, and the country's waste treatment capabilities. By considering these archetypes, we can present recommendations tailored to each country's unique circumstances.

These recommendations aim to empower countries to improve their Overshoot Day and mitigate plastic pollution. They include strategies such as reducing plastic consumption and usage, promoting circular economy models such as repair and reuse initiatives, implementing robust waste management policies like extended producer responsibilities (EPR), enhancing local waste management infrastructure, and ceasing the import of plastic waste from other countries. By adopting measures relevant to their situation, countries can make significant progress in combatting plastic pollution.

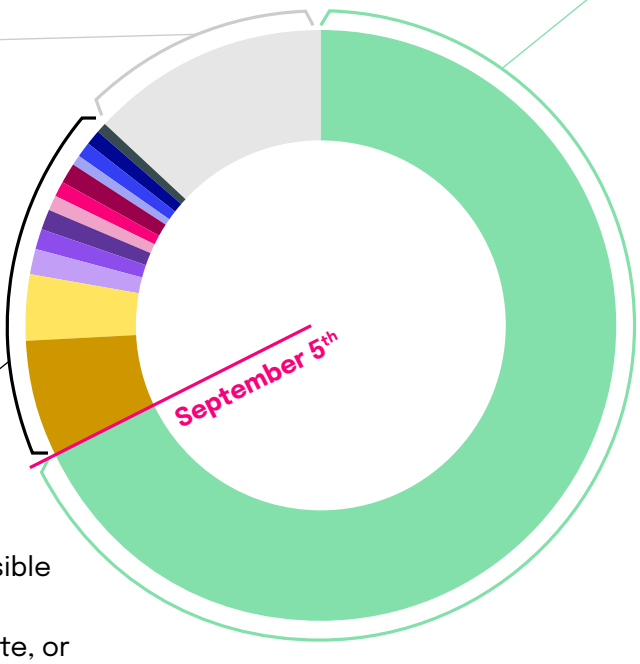
Every country has its own Plastic Overshoot Day, corresponding to the day at which a country's waste management capacity is fully exhausted. Beyond this day, all waste generated by the country becomes mismanaged, ultimately finding its way into the natural environment.

Who contributes to the Plastic Overshoot Day?

In 2024, there are 117 days of plastic overshoot, meaning that the plastic waste produced during these days will not be well managed. Each country contributes to a portion of this plastic overshoot, according to the total amount of plastic waste they mismanage.

1

In the first 248 days of 2024, plastic waste is well-managed, meaning it is collected and then either recycled, incinerated, or deposited in a sanitary landfill.



3

The remaining 205 countries account for 40% of the total mismanaged waste, or 46.8 days.

2

12 countries are responsible for 60% of the world's mismanaged plastic waste, or 70 days of overshoot for 2024: China, India, Russian Federation, Brazil, Mexico, Vietnam, Iran, Indonesia, Egypt, Pakistan, United states and Turkey.

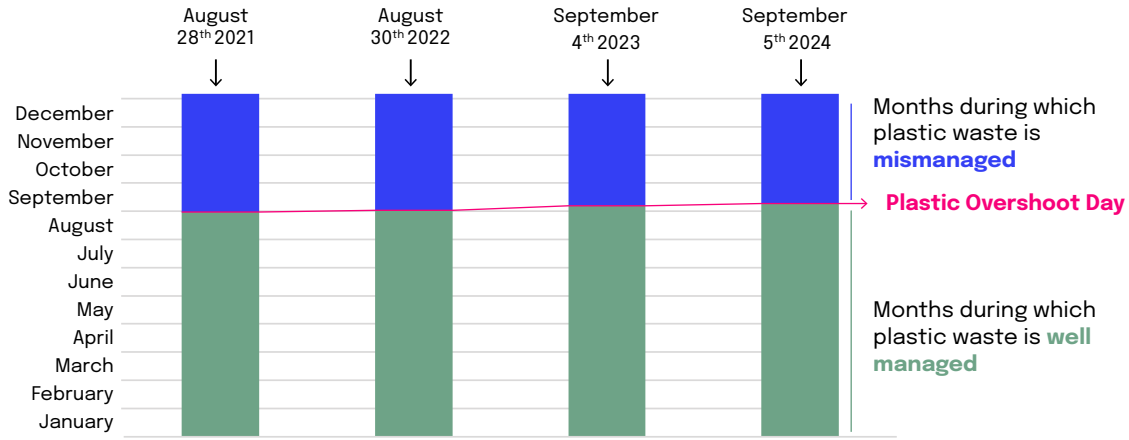
248 Days of Proper Plastic Waste Management in 2024

Allocation of 2024 Global Overshoot Days:

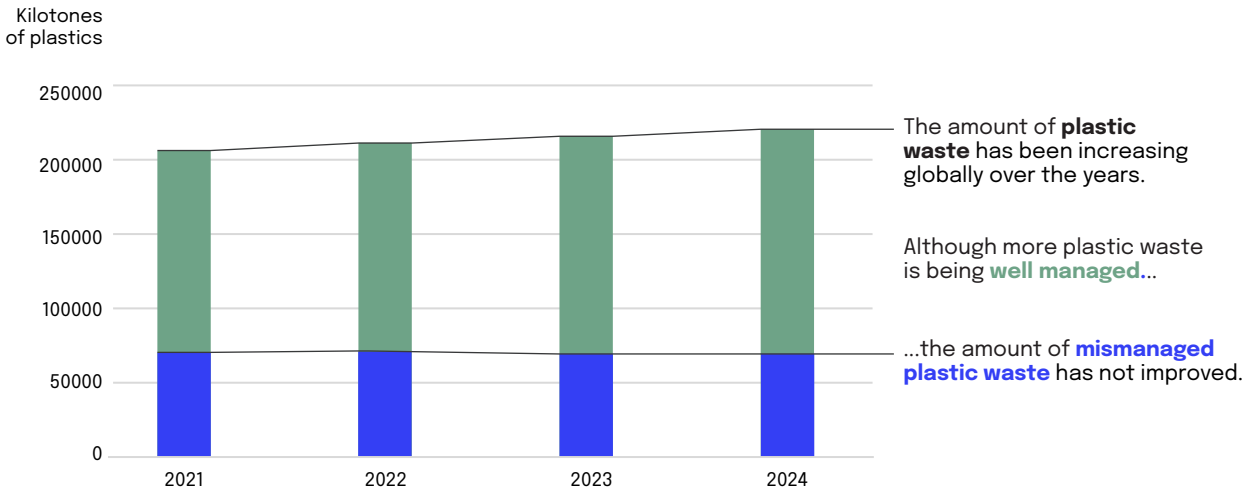
- China (23.5 days)
- India (12.5 days)
- Russian Fed. (5.3 days)
- Brazil (4.3 days)
- Mexico (3.6 days)
- Vietnam (3.4 days)
- Iran (3.4 days)
- Indonesia (3.1 days)
- Egypt (2.9 days)
- Pakistan (2.8 days)
- USA (2.7 days)
- Turkey (2.5 days)
- Other countries (46.8 days)

Is it getting better or worse?

Plastic Overshoot Day mirrors how well the world manages its plastic waste. Since 2021, POD has been pushed a little closer to December every year by a few days, indicating a slight improvement in global waste management.



However, there has been a consistent rise in global plastic waste generation, from 205,948 kilotons in 2021 to 220,606 kilotons projected in 2024. Therefore, despite an improvement in plastic waste management practices, the overall quantity of mismanaged plastic waste remains more or less unchanged.

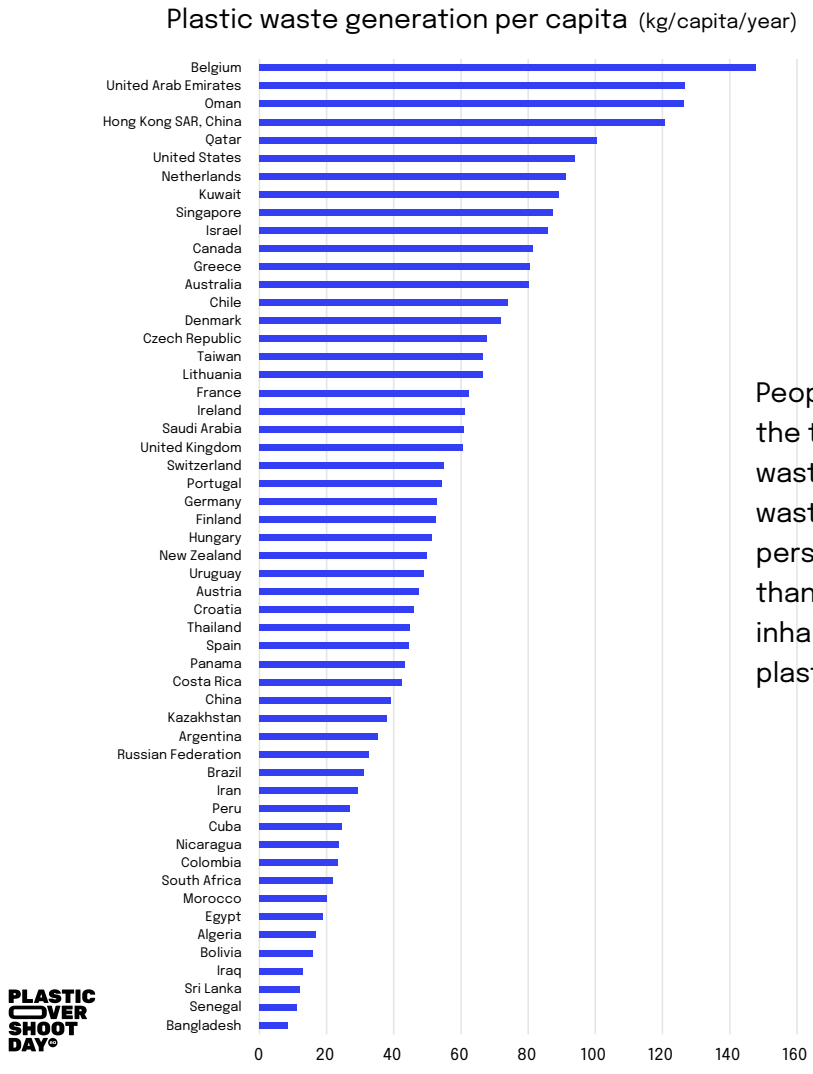


03. Executive summary

A little (or big) story of plastic pollution...

Global plastic pollution is an aggregated contribution of each country. It depends on how much plastic waste is generated from consumption by each country and how much of this waste is mismanaged and may eventually leak in the environment.

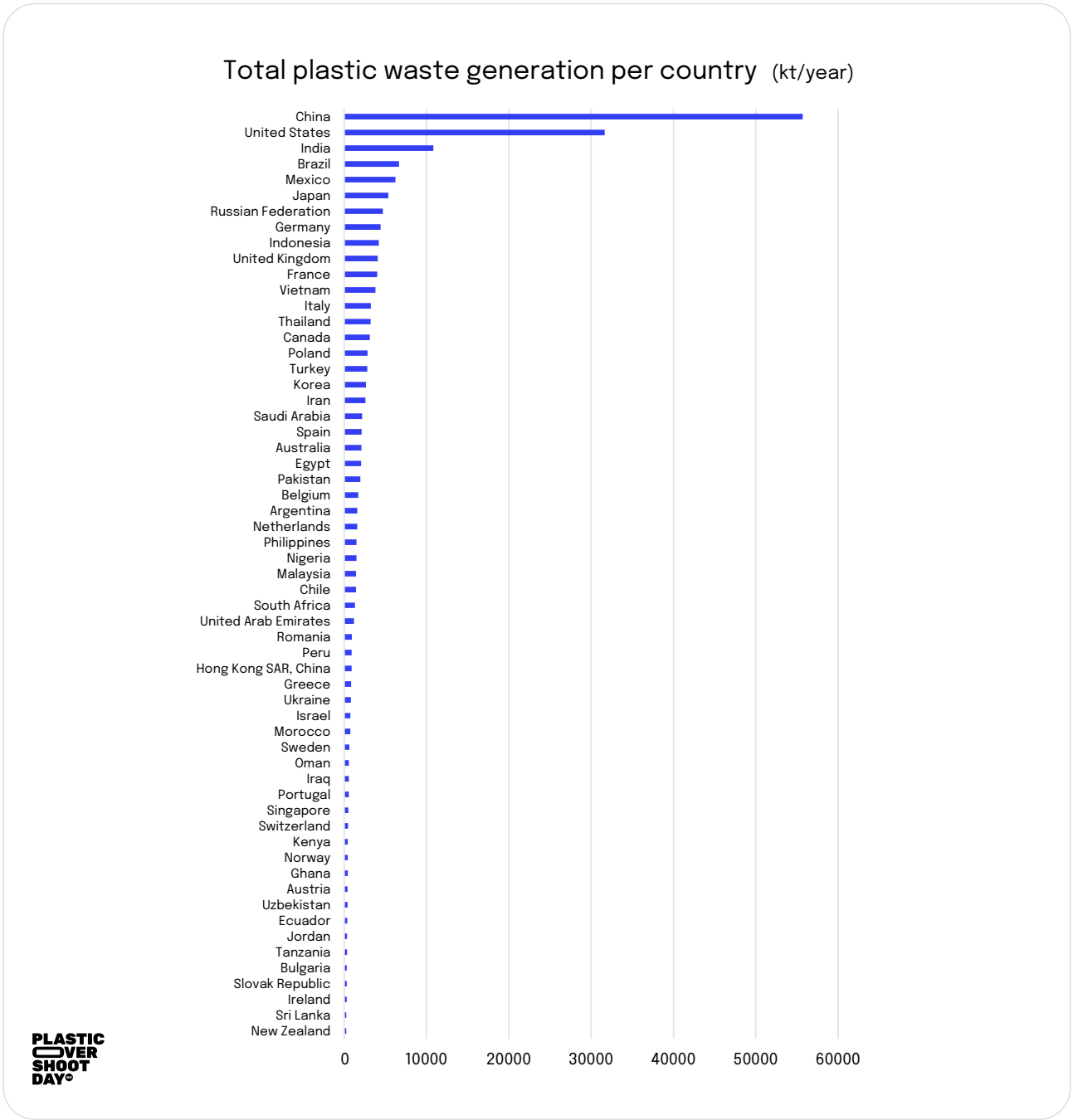
The global average plastic waste generated by person and per year is 28 kg, with a total worldwide generation of 220 million tons per year. Diving into regional differences, plastic waste generation varies among countries and individuals, with some producing more plastic waste per capita than others.



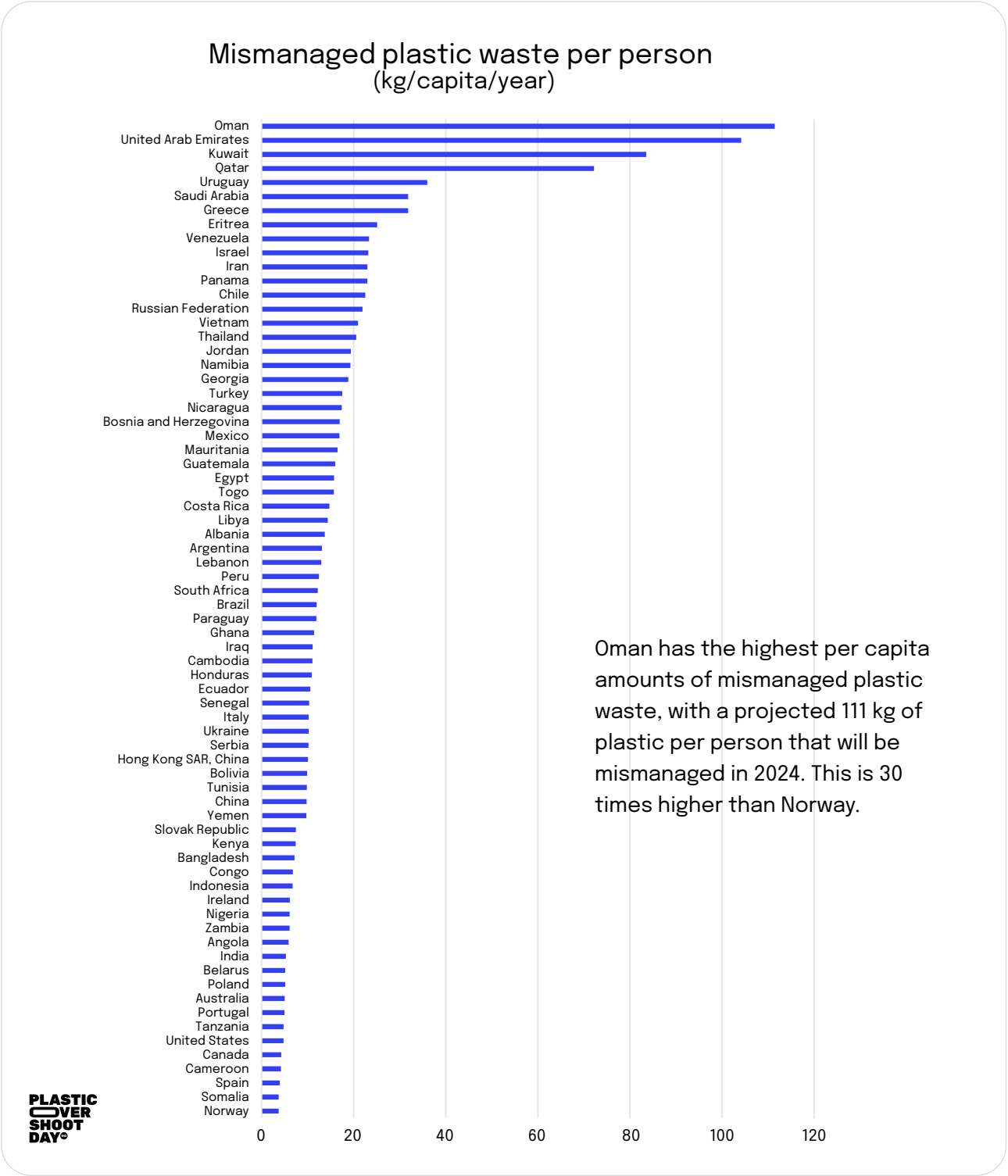
People living in Belgium are the top generators of plastic waste in 2024, with a yearly waste production of 147.7 kg per person. This is 16 times higher than in Bangladesh where each inhabitant generates 8.6 kg of plastic waste.

Despite lower level of waste generation per capita, a country's total waste production can be quite high due to its large territory and large population. An example is China, which is expected to produce almost four times less waste per capita in 2024 (39 kg/capita) than Belgium but is the top one plastic waste producer at the national level, with expected 56 million tons produced in 2024. This is 142 times larger than Ecuador.

Nevertheless, plastic waste generation is a global issue, with an expected total waste generation of 220 million tons in 2024 worldwide.

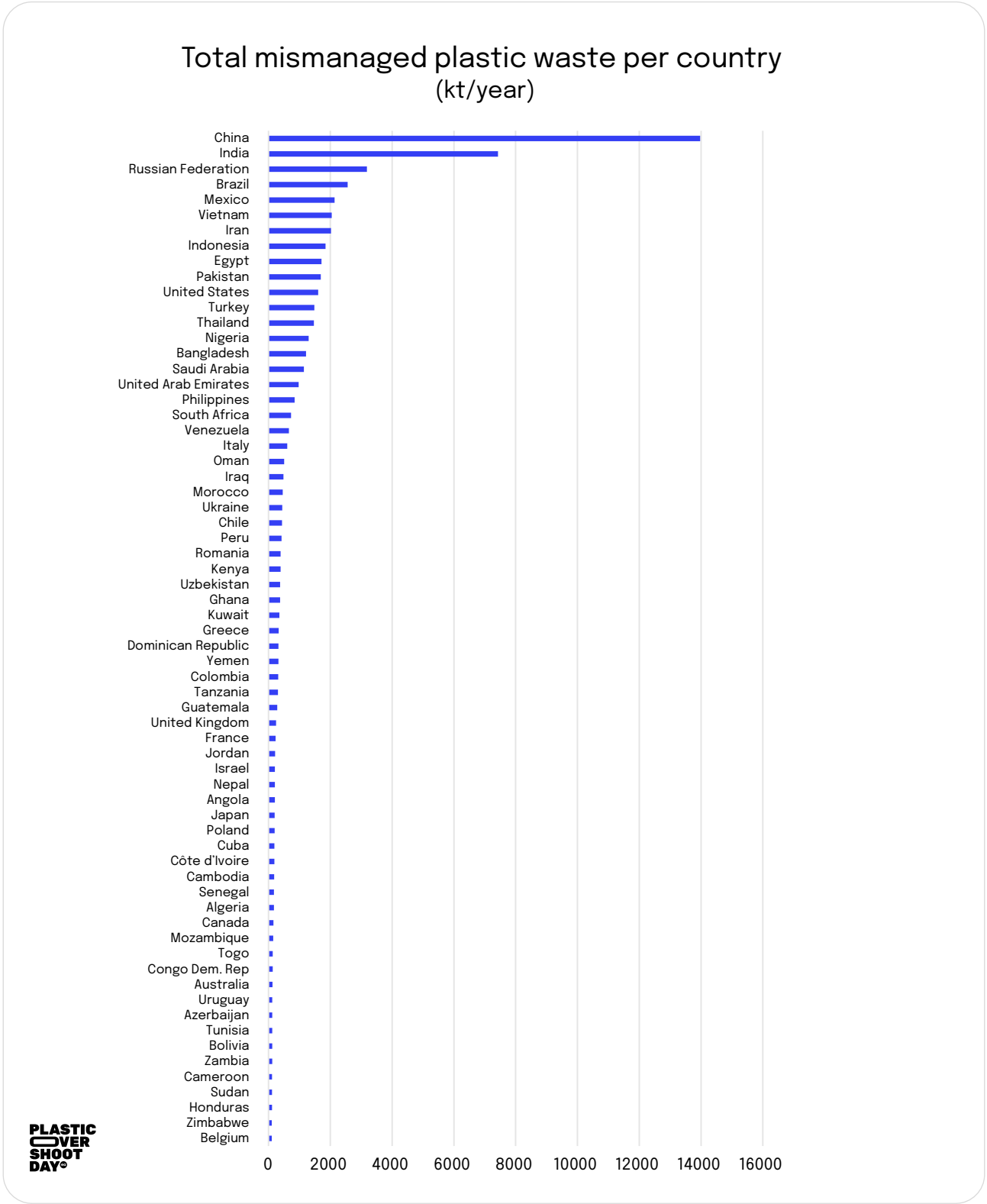


Countries have varying capacities to effectively manage the plastic waste they generate, with some having more advanced waste management systems than others. In total, around 69.5 million tons of plastic is expected to be mismanaged globally this year and potentially end up in the environment. The global average mismanaged plastic waste per person is projected to be 8.8 kg in 2024.



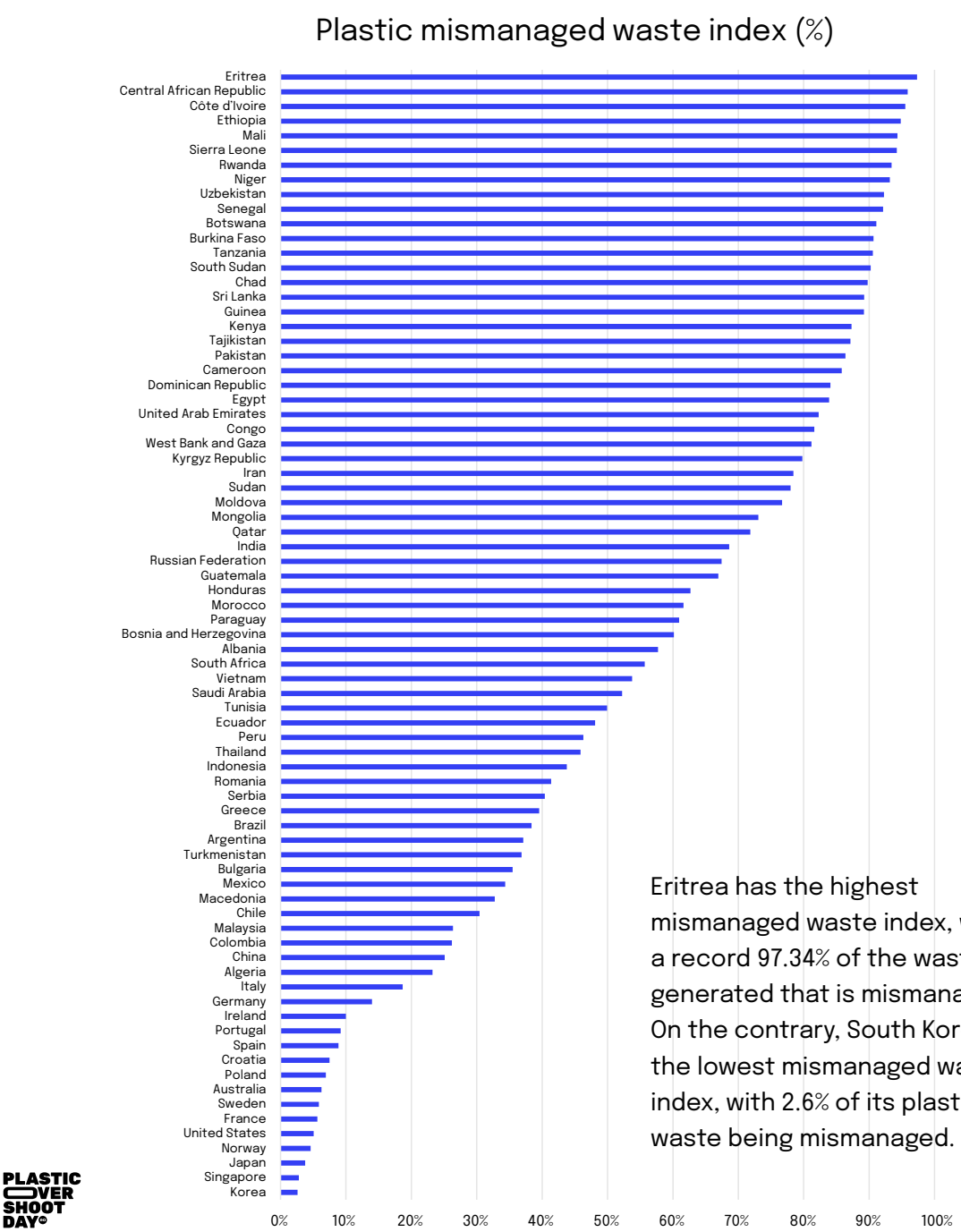
Oman has the highest per capita amounts of mismanaged plastic waste, with a projected 111 kg of plastic per person that will be mismanaged in 2024. This is 30 times higher than Norway.

12 countries are responsible for 60% of the world's mismanaged plastic waste: China, India, Russia, Brazil, Mexico, Vietnam, Iran, Indonesia, Egypt, Pakistan, United State and Turkey.



The imbalance between the volumes of plastic that are produced and used, and the world's ability to manage those volumes when they become waste, is the root cause of plastic pollution.

The mismatch of waste management capacity versus plastic consumption is called the MWI, the mismanaged waste index.

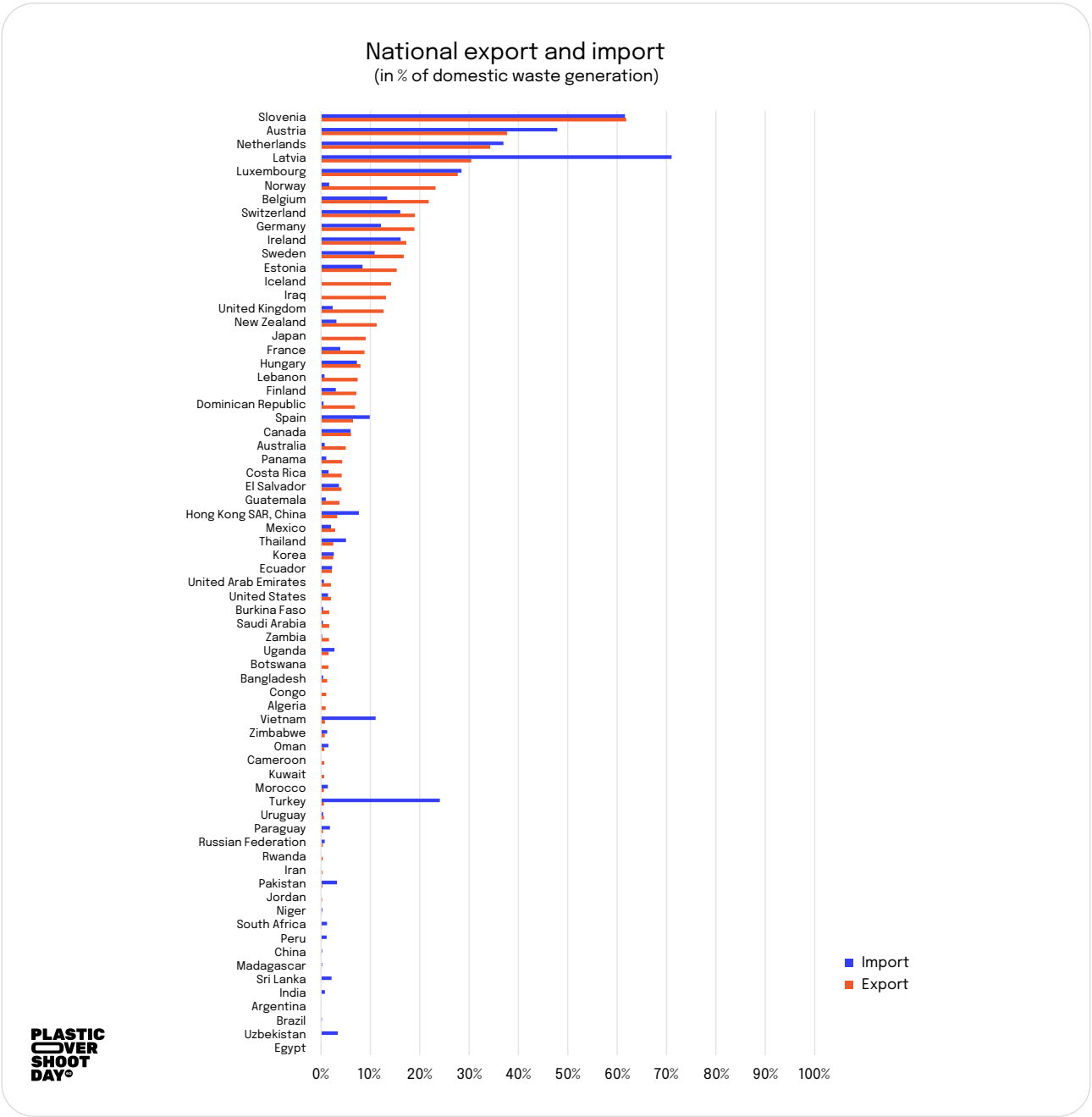


Eritrea has the highest mismanaged waste index, with a record 97.34% of the waste generated that is mismanaged. On the contrary, South Korea has the lowest mismanaged waste index, with 2.6% of its plastic waste being mismanaged.

Globally in 2024, a staggering 31.5% of plastic waste will be mismanaged at the end of its life, with the risk of this waste ending up in oceans. Countries trade plastic waste between each other. The biggest waste exporter is Slovenia, with exports of plastic waste that corresponds in quantity to 61.8% of its domestic waste generated. Nevertheless, Slovenia imports the same amount of plastic waste from abroad.

On the contrary, Norway is the biggest net exporter, since it exports the equivalent of 23.1% of its domestic waste while only importing the equivalent of 1.6% of its plastic waste production from other countries.

Pollution is created when plastic waste is exported in countries that have very low waste management capacities.

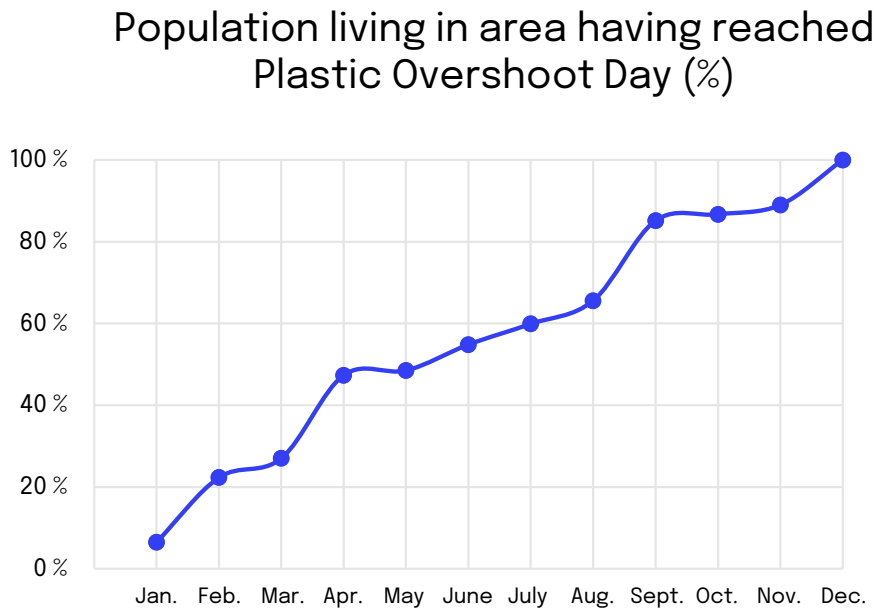


Plastic Overshoot Day marks the point when the amount of plastic waste generated exceeds the world's capacity to manage it, resulting in environmental pollution. In 2024, the global Plastic Overshoot Day is projected to occur on **September 5th.** It's important to note that each country has its own Plastic Overshoot Day, which is determined by the amount of plastic waste generated and the country's capacity to manage it.

Overshoot Day by Country

The date when a country's waste management capacity has been reached.

By April 2024, almost half (47%) of the world's population will be living in areas where plastic waste has already exceeded the capacity to manage it, indicating a pressing need for action to address the plastic waste crisis.

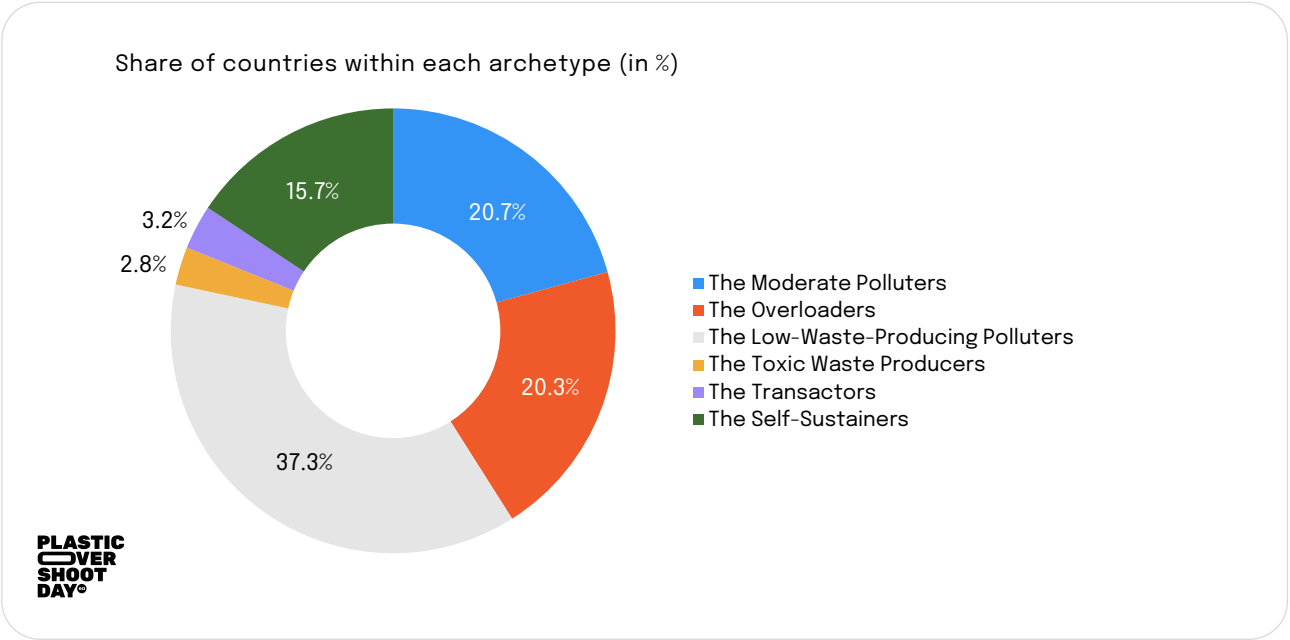


04. Detailed results

Summary table

Country archetypes	Waste generation level	Waste mismanagement level	Import Volumes	Export Volumes
The Moderate Polluters	Medium	Very high	Medium	Medium
The Overloaders	High	Low	High	High
The Low-Waste-Producing Polluters	Low	Very high	Low	Medium
The Toxic Waste Producers	Very high	Very high	Low	Medium
The Transactors	High	Low	Very high	Very high
The Self-Sustainers	Medium	Medium	Medium	Medium

The next graph shows the share of the different archetypes for the year 2024.



Archetypes criteria

Plastic Overshoot Day looked to establish categories, or archetypes of countries, so that countries could be profiled and relevant and meaningful solutions could be presented and explored.

The criteria used to profile the countries are based on:

- The volumes of waste generated per capita in the country
- The level of mismanaged waste in the country, treated both domestically and exported
- The volume of waste that the country imports from other countries, proportionally to its domestic waste production
- The portion of domestic waste that the country exports to other countries

The below table summarizes the thresholds applied for each of the criteria.

	Waste generation level (kg/cap/year)	Waste mismanagement level	Import (% of waste generation)	Export (% of waste generation)
Very high	> 100	> 60%	> 10%	> 10%
High	50-100	30-60%	3-10%	3-10%
Medium	15-50	10-30%	1-3%	1-3%
Low	< 15	< 10%	< 1%	< 1%

Country archetypes & country examples

Plastic Overshoot Day aims to offer insights into interventions that countries can use to reduce overall plastic waste and in particular, mitigate mismanaged plastic waste, therefore prolonging the country's overshoot date.

Each country has unique realities related to plastic pollution – including plastic usage levels, waste management infrastructure, and relevant policies – Plastic Overshoot Day looked to establish categories so that countries could be profiled and relevant and meaningful solutions could be presented and explored.

6 Country Archetypes have been defined, which represent countries based on:
- The amount of plastic waste the population produces
- How well plastic is managed when it becomes waste
- How much plastic waste the country exports
- How much plastic waste the country imports

Within this section, we aim to provide a comprehensive overview of each archetype, accompanied by an illustrative example of a country associated with that particular archetype.

Country archetype	Country example
The Moderate Polluters	Russian Federation
The Overloaders	Australia
The Low-Waste-Producing Polluters	Ghana
The Toxic Waste Producers	Qatar
The Transactors	The Netherlands
The Self-Sustainers	Colombia

PLASTIC OVERSHOOT DAY

Country archetype

The Moderate polluters

Factor	Ranking	Average	Range
Waste Generation Level	Medium	30.45 kg/capita/year	Low to high
Waste Mismanagement Level	High	60.2%	High
Import Volumes	Medium	2%	Low to very high
Export Volumes	Medium	2.5%	Low to very high

Description

On average, the Moderate Polluters tend to have a medium plastic waste generation level. Half of them have exported some of their waste. These countries do not effectively manage their waste and negative environmental impacts result both domestically and in the countries receiving the waste.

Countries

Cuba, Equatorial Guinea, French Polynesia, Kiribati, Marshall Islands, Nauru, Papua New Guinea, San Marino, Tonsga, Vanuatu, Peru, South Africa, Jordan, Guyana, Russian Federation, Paraguay, Ukraine, Venezuela, Uruguay, Turkey, Morocco, Vietnam, Trinidad and Tobago, Bolivia, Libya, Indonesia, Fiji, Saudi Arabia, Macao SAR, China, Cayman Islands, Ecuador, Montenegro, Thailand, Albania, Honduras, Guatemala, Panama, Belize, Mauritius, Bosnia and Herzegovina, Lebanon, Nicaragua, Philippines, Tunisia.

RECOMMENDATION 1

Develop local waste management infrastructure. Further developing their domestic waste management infrastructure would allow the Moderate Polluters to treat more of their waste locally, thus reducing the burden placed on other countries.

RECOMMENDATION 2

Reduce plastic consumption. Reducing its consumption of plastic would have direct impacts over their waste mismanagement levels that would drop proportionally.

RECOMMENDATION 3

Invest in waste management policies including Extended Producer Responsibility, which would fund the development of the waste management infrastructure that is currently lacking.

Example

Russian Federation

Overshoot Day, or the date when the amount of plastic waste outweighs this country's ability to manage it, with environmental pollution occurring as a result, is:

27 April 2024

Plastic Overshoot Day is determined by a country's Mismanaged Waste Index*, which in this case is...

67.45%

In 2024, the world will experience **117 days** of plastic overshoot. This country will contribute to this overshoot by

5 days 9 hours 31 minutes

The Mismanaged Waste Index, or MWI, is
Very high

The expected mismanaged waste in 2024 will be
3 182 063 tons of plastic

The country's annual per capita plastic waste production is
33 kg per capita per year

which is considered
Medium

The total plastic waste produced in this country is
4 717 346 tons of plastic

The amount of plastic waste EXPORTED by the country is
16 867 tons of plastic

which represents
0.4% of its total waste

This relative export is considered
Low

The amount of plastic waste IMPORTED by the country is
35 097 tons of plastic

which represents
0.7% of its total waste

This relative import is considered
Low

As per the Plastic Overshoot Day archetypes, this country is classified as one of:

The Moderate Polluters

On average, the Moderate Polluters tend to have a medium plastic waste generation level. Half of them export some of their waste. These countries do not effectively manage their waste and negative environmental impacts result both domestically and in the countries receiving the waste.

Recommendations for driving necessary changes to mitigate plastic pollution and postpone the Overshoot Day in this country:

Develop local waste management infrastructure.

Reduce plastic production and use.

Invest in waste management policies like EPR.

Plastic pollution is caused not only by the improper disposal of plastic products but also by the release of primary microplastics from sources such as tire abrasion, shedding of textile fibers, pellets production and paint. It is expected that in 2024 this country will be responsible for releasing into the environment an average of

50 831 tons of microplastics in waterways.

In addition, plastic production and processing involve the use of additives, which can have harmful impacts on ecosystems and human health if they leak into the environment due to waste mismanagement. It is anticipated that in 2024, plastic waste mismanagement in this country will result in the release into waterways of

13 482 tons of chemical additives pollution.

*The Mismanaged Waste Index is the share of plastic waste generated by a country that is mismanaged

PLASTIC OVERSHOOT DAY

Country archetype

The Overloaders

Factor	Ranking	Average	Range
Waste Generation Level	High	75.42 kg/capita/year	Medium to very high
Waste Mismanagement Level	Low	10.2%	Low to medium
Import Volumes	High	5%	Low to very high
Export Volumes	High	9%	Low to very high

Description

The Overloaders are high plastic waste generators, who export a significant amount of their waste. Their waste is well managed. Unlike the similarly high-consuming Transactors, the Overloaders import less waste than they export. This imbalance therefore overloads the waste management systems of other countries, likely creating mismanagement issues in countries where Overloaders send their plastic waste.

Countries

Antigua and Barbuda, Australia, Barbados, Belgium, Bermuda, Canada, Channel Islands, Chile, Croatia, Czech Republic, Denmark, Estonsia, Faeroe Islands, Finland, France, Germany, Gibraltar, Greece, Greenland, Hong Kong SAR, China, Hungary, Iceland, Ireland, Isle of Man, Israel, Italy, Japan, Korea, Malta, New Zealand, Norway, Poland, Portugal, Puerto Rico, Singapore, Slovak Republic, Spain, St. Martin, Sweden, Switzerland, Taiwan, United Kingdom, United States, Virgin Islands.

RECOMMENDATION 1

Reduce plastic production and use. The primary way to mitigate plastic pollution is to mitigate the amount of plastic used by the population. As a high consumption country, reducing plastic consumption is critical for the Overloaders.

RECOMMENDATION 2

Become circular. Plastic waste typically exists in a linear system of «take, make, dispose.» Plastic manufacturing and management must transition to more circular systems to address the plastic pollution crisis. Effective solutions must include a move away from the linear status quo to circular business models based on reuse and repair.

Example

Australia

Overshoot Day, or the date when the amount of plastic waste outweighs this country's ability to manage it, with environmental pollution occurring as a result, is:

07 December 2024

Plastic Overshoot Day is determined by a country's Mismanaged Waste Index*, which in this case is...

6.27%

In 2024, the world will experience **117 days** of plastic overshoot. This country will contribute to this overshoot by

5 hours 16 minutes

The Mismanaged Waste Index, or MWI, is

Low

The expected mismanaged waste in 2024 will be

130 407 tons of plastic

The country's annual per capita plastic waste production is

80 kg per capita per year

which is considered

High

The total plastic waste produced in this country is

2 079 514 tons of plastic

The amount of plastic waste EXPORTED by the country is

104 741 tons of plastic

which represents

5.0% of its total waste

This relative export is considered

High

The amount of plastic waste IMPORTED by the country is

15 356 tons of plastic

which represents

0.7% of its total waste

This relative import is considered

Low

As per the Plastic Overshoot Day archetypes, this country is classified as one of:

The Overloaders

The Overloaders are high plastic waste generators, who export a significant amount of their waste. Their waste is well managed. Unlike the similarly high-consuming Transactors, the Overloaders import less waste than they export. This imbalance therefore overloads the waste management systems of other countries, likely creating mismanagement issues in countries where Overloaders send their plastic waste.

Recommendations for driving necessary changes to mitigate plastic pollution and postpone the Overshoot Day in this country:

Reduce plastic consumption.

Become circular.

Plastic pollution is caused not only by the improper disposal of plastic products but also by the release of primary microplastics from sources such as tire abrasion, shedding of textile fibers, pellets production and paint. It is expected that in 2024 this country will be responsible for releasing into the environment an average of

29 979 tons of microplastics in waterways.

In addition, plastic production and processing involve the use of additives, which can have harmful impacts on ecosystems and human health if they leak into the environment due to waste mismanagement. It is anticipated that in 2024, plastic waste mismanagement in this country will result in the release into waterways of

553 tons of chemical additives pollution.

*The Mismanaged Waste Index is the share of plastic waste generated by a country that is mismanaged

PLASTIC OVERSHOOT DAY

Country archetype

The Low-Waste-Producing Polluters

Factor	Ranking	Average	Range
Waste generation level	Low	12 kg/capita/year	Low to medium
Waste Mismanagement Level	Very high	87.1%	Very high
Import Volumes	Low	< 0.8%	Low to very high
Export Volumes	Medium	1.2%	Low to very high

Description
Despite their low waste production levels, the Low-Waste-Producing Polluters contribute to plastic pollution levels due to their poor waste management practices. Depending on the size of the population, some countries can be large contributors to the global pollution.

Countries
Afghanistan, Angola, Armenia, Aruba, Azerbaijan, Bangladesh, Benin, Bhutan, Botswana, Burkina Faso, Burundi, Cabo Verde, Cambodia, Cameroon, Central African Republic, Chad, Comoros, Congo, Congo Democratic Republic, Côte d'Ivoire, Curacao, Djibouti, Dominican Republic, Egypt, Eritrea, Eswatini, Ethiopia, Gabon, Gambia, Georgia, Ghana, Guinea, Guinea-Bissau, Haiti, India, Iran, Iraq, Kazakhstan, Kenya, Kosovo, Kyrgyz Republic, Lao PDR, Lesotho, Liberia, Madagascar, Malawi, Maldives, Mali, Mauritania, Micronesia, Moldova, Mongolia, Mozambique, Myanmar, Namibia, Nepal, Niger, Nigeria, Pakistan, Rwanda, São Tomé and Príncipe, Senegal, Sierra Leone, Solomon Islands, Somalia, South Sudan, Sri Lanka, Sudan, Suriname, Syrian Arab Republic, Tajikistan, Tanzania, Timor-Leste, Togo, Tuvalu, Uganda, Uzbekistan, West Bank and Gaza, Yemen, Zambia, Zimbabwe.

RECOMMENDATION 1

Develop local waste management infrastructure. Further developing their domestic waste management infrastructure would allow the Toxic Exporters to treat more of their waste locally, thus reducing the burden placed on other countries.

RECOMMENDATION 2

Invest in waste management policies including Extended Producer Responsibility, which would fund the development of the waste management infrastructure that is currently lacking.

Example

Ghana

Overshoot Day, or the date when the amount of plastic waste outweighs this country's ability to manage it, with environmental pollution occurring as a result, is:

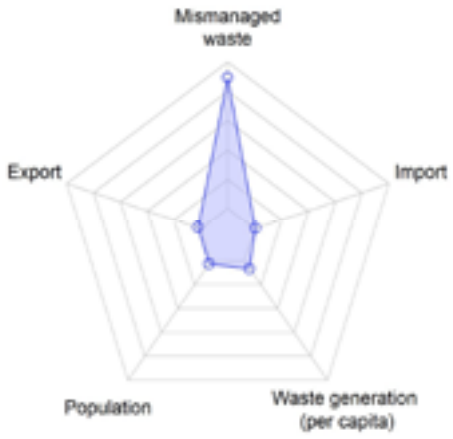
15 February 2024

Plastic Overshoot Day is determined by a country's Mismanaged Waste Index*, which in this case is...

87.13%

In 2024, the world will experience **117 days** of plastic overshoot. This country will contribute to this overshoot by

15 hours 7 minutes



The Mismanaged Waste Index, or MWI, is
Very high

The expected mismanaged waste in 2024 will be
374 213 tons of plastic

The country's annual per capita plastic waste production is
13 kg per capita per year

which is considered
Low

The total plastic waste produced in this country is
429 492 tons of plastic

The amount of plastic waste EXPORTED by the country is
5 499 tons of plastic

which represents
1.3% of its total waste

This relative export is considered
Medium

The amount of plastic waste IMPORTED by the country is
1 779 tons of plastic

which represents
0.4% of its total waste

This relative import is considered
Low

As per the Plastic Overshoot Day archetypes, this country is classified as one of:

The Low-Waste-Producing Polluters

Despite their low waste production levels, the Low-Waste-Producing Polluters contribute to plastic pollution levels due to their poor waste management practices. Depending on the size of the population, some countries can be large contributors to the global pollution.

Recommendations for driving necessary changes to mitigate plastic pollution and postpone the Overshoot Day in this country:

Develop local waste management infrastructure.

Invest in waste management policies like EPR.

Plastic pollution is caused not only by the improper disposal of plastic products but also by the release of primary microplastics from sources such as tire abrasion, shedding of textile fibers, pellets production and paint. It is expected that in 2024 this country will be responsible for releasing into the environment an average of

3 845 tons of microplastics in waterways.

In addition, plastic production and processing involve the use of additives, which can have harmful impacts on ecosystems and human health if they leak into the environment due to waste mismanagement. It is anticipated that in 2024, plastic waste mismanagement in this country will result in the release into waterways of

1 586 tons of chemical additives pollution.

*The Mismanaged Waste Index is the share of plastic waste generated by a country that is mismanaged

Country archetype

The Toxic Waste Producers

Factor	Ranking	Average	Range
Waste generation level	Very high	109 kg/capita/year	High to very high
Waste Mismanagement Level	High	79%	Very high
Import Volumes	Low	< 0.4%	Low to medium
Export Volumes	Medium	1.1%	Low to medium

Description

The Toxic Waste Producers are high plastic waste generators, with waste that is mismanaged at high levels. Some of these countries export their waste to places that do not have proper waste management infrastructure. Plastic pollution in many countries is impacted by waste that was mismanaged after being received from Toxic Waste Producers.

Countries

Bahrain, Kuwait, Northern Mariana Islands, Oman, Qatar, United Arab Emirates.

RECOMMENDATION 1

Reduce plastic production and use. The primary way to mitigate plastic pollution is to mitigate the amount of plastic used by the population. As a high consumption country, reducing plastic consumption is critical for the Toxic Exporters.

RECOMMENDATION 2

Develop local waste management infrastructure. Further developing their domestic waste management infrastructure would allow the Toxic Exporters to treat more of their waste locally, thus reducing the burden placed on other countries.

RECOMMENDATION 3

Become circular. Plastic waste typically exists in a linear system of « take, make, dispose. » Plastic manufacturing and management must transition to more circular systems to address the plastic pollution crisis. Effective solutions must include a move away from the linear status quo to circular business models based on reuse and repair.

Example

Qatar

Overshoot Day, or the date when the amount of plastic waste outweighs this country's ability to manage it, with environmental pollution occurring as a result, is:

11 April 2024

Plastic Overshoot Day is determined by a country's Mismanaged Waste Index*, which in this case is...

71.82%

In 2024, the world will experience **117 days** of plastic overshoot. This country will contribute to this overshoot by

8 hours 50 minutes

The Mismanaged Waste Index, or MWI, is
Very high

The expected mismanaged waste in 2024 will be
193 999 tons of plastic

The country's annual per capita plastic waste production is
100 kg per capita per year

which is considered
Very high

The total plastic waste produced in this country is
270 116 tons of plastic

The amount of plastic waste EXPORTED by the country is
5 188 tons of plastic

which represents
1.9% of its total waste

This relative export is considered
Medium

The amount of plastic waste IMPORTED by the country is
160 tons of plastic

which represents
0.1% of its total waste

This relative import is considered
Low

As per the Plastic Overshoot Day archetypes, this country is classified as one of:

The Toxic Waste Producers

The Toxic Waste Producers are high plastic waste generators, with waste that is mismanaged at high levels. Some of these countries export their waste to places that do not have proper waste management infrastructure. Plastic pollution in many countries is impacted by waste that was mismanaged after being received from Toxic Waste Producers.

Recommendations for driving necessary changes to mitigate plastic pollution and postpone the Overshoot Day in this country:

Reduce plastic production and use.

Develop local waste management infrastructure.

Become circular.

Plastic pollution is caused not only by the improper disposal of plastic products but also by the release of primary microplastics from sources such as tire abrasion, shedding of textile fibers, pellets production and paint. It is expected that in 2024 this country will be responsible for releasing into the environment an average of

5 753 tons of microplastics in waterways.

In addition, plastic production and processing involve the use of additives, which can have harmful impacts on ecosystems and human health if they leak into the environment due to waste mismanagement. It is anticipated that in 2024, plastic waste mismanagement in this country will result in the release into waterways of

822 tons of chemical additives pollution.

*The Mismanaged Waste Index is the share of plastic waste generated by a country that is mismanaged

PLASTIC OVERSHOOT DAY

Country archetype

The Transactors

Factor	Ranking	Average	Range
Waste generation level	High	69.5 kg/capita/year	Medium to very high
Waste Mismanagement Level	Low	10.9%	Low to medium
Import Volumes	Very high	52%	Very high
Export Volumes	Very high	33%	Very high

Description

The Transactors are countries with high rates of plastic waste production. Their waste tends to be well-managed, although most do not yet have extensive circular systems around plastics. The Transactors are wealthy countries from Europe. They export a lot of their waste but also import a lot of waste from neighboring countries. Through this exchange of waste with their trade partners they have been able to optimize their waste management practices, resulting in a low volume of waste ending up mismanaged and low risk of plastic leakage into the environment.

Countries

Austria, Cyprus, Latvia, Lithuania, Luxembourg, The Netherlands, Slovenia.

RECOMMENDATION 1

Reduce plastic production and use. The primary way to mitigate plastic pollution is to mitigate the amount of plastic used by the population. As a high consumption country, reducing plastic consumption is critical for the Transactors. A secondary benefit of lower consumption levels would be that their existing waste management capacity could assist others who currently lack the infrastructure to properly manage their waste.

RECOMMENDATION 2

Become circular. Plastic waste typically exists in a linear system of « take, make, dispose. » Plastic manufacturing and management must transition to more circular systems to address the plastic pollution crisis. Effective solutions must include a move away from the linear status quo to circular business models based on reuse and repair.

Example

The Netherlands

Overshoot Day, or the date when the amount of plastic waste outweighs this country's ability to manage it, with environmental pollution occurring as a result, is:

10 November 2024

Plastic Overshoot Day is determined by a country's Mismanaged Waste Index*, which in this case is...

13.68%

In 2024, the world will experience **117 days** of plastic overshoot. This country will contribute to this overshoot by

9 hours 48 minutes

The Mismanaged Waste Index, or MWI, is

Medium

The expected mismanaged waste in 2024 will be

217 997 tons of plastic

The country's annual per capita plastic waste production is

91 kg per capita per year

which is considered

High

The total plastic waste produced in this country is

1 593 923 tons of plastic

The amount of plastic waste EXPORTED by the country is

546 388 tons of plastic

which represents

34.3% of its total waste

This relative export is considered

Very high

The amount of plastic waste IMPORTED by the country is

588 721 tons of plastic

which represents

36.9% of its total waste

This relative import is considered

Very high

As per the Plastic Overshoot Day archetypes, this country is classified as one of:

The Transactors

The Transactors are countries with high rates of plastic waste production. Their waste tends to be well-managed, although most do not yet have extensive circular systems around plastics. The Transactors are wealthy countries from Europe. They export a lot of their waste but also import a lot of waste from neighboring countries. Through this exchange of waste with their trade partners they have been able to optimize their waste management practices, resulting in a low volume of waste ending up mismanaged and low risk of plastic leakage into the environment.

Recommendations for driving necessary changes to mitigate plastic pollution and postpone the Overshoot Day in this country:

Reduce plastic production and use.

Become circular.

Plastic pollution is caused not only by the improper disposal of plastic products but also by the release of primary microplastics from sources such as tire abrasion, shedding of textile fibers, pellets production and paint. It is expected that in 2024 this country will be responsible for releasing into the environment an average of

11 982 tons of microplastics in waterways.

In addition, plastic production and processing involve the use of additives, which can have harmful impacts on ecosystems and human health if they leak into the environment due to waste mismanagement. It is anticipated that in 2024, plastic waste mismanagement in this country will result in the release into waterways of

924 tons of chemical additives pollution.

*The Mismanaged Waste Index is the share of plastic waste generated by a country that is mismanaged

PLASTIC OVERSHOOT DAY

Country archetype

The Self-Sustainers

Factor	Ranking	Average	Range
Waste generation level	Medium	31.57 kg/capita/year	Low to high
Waste Mismanagement Level	Medium	29.4%	Low to high
Import Volumes	Medium	2.6%	Low to very high
Export Volumes	Medium	2.5%	Low to very high

Description
The Self-Sustainers are moderate plastic waste generators per capita that can to some extent manage their waste internally, although improvements are needed for some of them.

Countries
Algeria, American Samoa, Andorra, Argentina, Bahamas, Belarus, Brazil, British Virgin Islands, Brunei, Bulgaria, China, Colombia, Costa Rica, Dominica, El Salvador, Grenada, Guam, Liechtenstein, Macedonia, Malaysia, Mexico, Monaco, New Caledonia, Palau, Romania, Samoa, Serbia, Seychelles, Sint Maarten (Dutch part), St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Turkmenistan, Turks and Caicos Islands.

RECOMMENDATION 1

Reduce plastic production and use. The primary way to mitigate plastic pollution is to mitigate the amount of plastic used by the population. As a high consumption country, reducing plastic consumption is critical for the Self-Sustainers. A secondary benefit of lower consumption levels would be that their existing waste management capacity could assist others who currently lack the infrastructure to properly manage their waste.

RECOMMENDATION 2

Develop local waste management infrastructure. Further developing their domestic waste management infrastructure would allow the Toxic Exporters to treat more of their waste locally, thus reducing the burden placed on other countries.

RECOMMENDATION 3

Become circular. Plastic waste typically exists in a linear system of «take, make, dispose.» Plastic manufacturing and management must transition to more circular systems to address the plastic pollution crisis. Effective solutions must include a move away from the linear status quo to circular business models based on reuse and repair.

Example

Colombia

Overshoot Day, or the date when the amount of plastic waste outweighs this country's ability to manage it, with environmental pollution occurring as a result, is:

25 September 2024

Plastic Overshoot Day is determined by a country's Mismanaged Waste Index*, which in this case is...

26.21%

In 2024, the world will experience **117 days** of plastic overshoot. This country will contribute to this overshoot by

13 hours 45 minutes

The Mismanaged Waste Index, or MWI, is
Medium

The expected mismanaged waste in 2024 will be
315 506 tons of plastic

The country's annual per capita plastic waste production is
23 kg per capita per year

which is considered
Medium

The total plastic waste produced in this country is
1 203 924 tons of plastic

The amount of plastic waste EXPORTED by the country is
7 542 tons of plastic

which represents
0.6% of its total waste

This relative export is considered
Low

The amount of plastic waste IMPORTED by the country is
10 420 tons of plastic

which represents
0.9% of its total waste

This relative import is considered
Low

As per the Plastic Overshoot Day archetypes, this country is classified as one of:

The Self-Sustainers

The Self-Sustainers are moderate plastic waste generators per capita that can to some extent manage their waste internally, although improvements are needed for some of them.

Recommendations for driving necessary changes to mitigate plastic pollution and postpone the Overshoot Day in this country:

Reduce plastic production and use.
Develop local waste management infrastructure.
Become circular.

Plastic pollution is caused not only by the improper disposal of plastic products but also by the release of primary microplastics from sources such as tire abrasion, shedding of textile fibers, pellets production and paint. It is expected that in 2024 this country will be responsible for releasing into the environment an average of

11 008 tons of microplastics in waterways.

In addition, plastic production and processing involve the use of additives, which can have harmful impacts on ecosystems and human health if they leak into the environment due to waste mismanagement. It is anticipated that in 2024, plastic waste mismanagement in this country will result in the release into waterways of

1 337 tons of chemical additives pollution.

*The Mismanaged Waste Index is the share of plastic waste generated by a country that is mismanaged

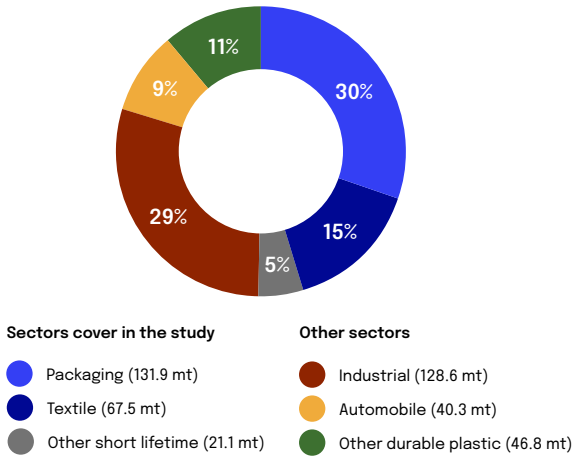
05. Appendix

Scope of the study

The primary objective of this study is to comprehensively quantify plastic pollution on a global scale and determine the global Plastic Overshoot Day, as well as the Overshoot Day for individual countries. The study specifically focuses on plastic waste originating from solid waste management systems, encompassing plastic packaging, textiles and household products. It is important to note that plastics used exclusively in industrial applications are excluded from this analysis. The research methodology involves conducting the analysis at a global level initially and subsequently drilling down to a country-level assessment, providing a detailed understanding of plastic pollution trends and challenges worldwide.

Yearly production of plastic in the world

Plastic Overshoot Day sheds light on a critical aspect of the world's plastic consumption: short-life plastics, encompassing plastic packaging and single-use plastics. These categories account for approximately 35% of the total plastic commercialized annually. Moreover, they pose the higher risk of leakage in the environment. Plastic Overshoot days also include the contribution of synthetic textile to plastic pollution. This category accounts for an additional 15% of the total plastic commercialized annually.



Country overshoot days

Every country has it own Plastic Overshoot Day.
Explore the details for your country:

The full report is available at
www.plasticovershoot.earth

Methodology

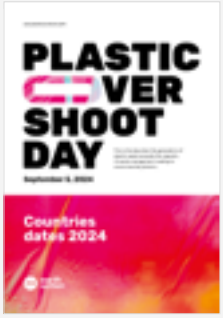
At EA Earth Action, our mission is to shed light on the critical issue of plastic pollution. We achieve this by leveraging scientific research to quantify the magnitude of the problem, and by empowering individuals and organizations to find solutions. To this end, we place a high value on transparency regarding our methodology for measuring plastic pollution. We believe that clear and comprehensive information on our methodology is crucial to building trust with stakeholders.

The methodological guide explains the concept underpinning Plastic Overshoot Day: the Mismanaged Waste Index, and how it is computed.

This methodological guide will also draw on concepts used in the narrative of Plastic Overshoot Day, such as the classifications of countries with regard to management of plastic waste.

The Mismanaged Waste Index (MWI) is a metric used to quantify the amount of plastic waste that is not properly managed in a locally and therefore ends up in the environment.

Because many countries export their plastic waste, it is critical to account for the fate of the exported waste.



The full content of the methodology is available at **www.plasticovershoot.earth**

PLASTIC

OVER SHOOT DAY

Plastic… is… everywhere

And the amount of plastic produced is expected to double by 2040, which will triple the volume of plastic pollution.
The underlying issues with plastic pollution are the excessive production and use of plastic across the planet and the lack of sufficient waste management systems to properly process plastic after it has been used. This results in a significant amount of plastic ending up in the environment every year, with a staggering amount ultimately finding its way into the ocean.

Every year, there is a day when the amount of plastic waste surpasses the capability of waste management systems to effectively manage it. This day is known as Plastic Overshoot Day, and in 2024, the global community will reach this critical point on **September 5th**.

It's time for action.

Together, we can work towards reducing plastic consumption, improving waste management systems, promoting sustainable alternatives, and advocating for policy changes to combat plastic pollution and protect our oceans and the environment for future generations.

www.plasticovershoot.earth