



Every choice counts

A large, diverse crowd of people is walking on a city street, likely during a busy time of day. The people are of various ages and ethnicities, dressed in casual to semi-formal attire. The background shows city buildings and a clear sky. The overall atmosphere is one of a busy, populated urban environment.

CRISIS POINT

THE WORLD AT 8 BILLION PEOPLE

FACTSHEET

CRISIS MILESTONE

- KEY POINTS



- The world's population will hit 8 billion people for the first time on 15 November 2022.¹ It is set to reach 9.7 billion in 2050 and 10.4 billion in 2100, according to UN projections published this year.²

- There were 4 billion people in the world in 1974³. Since then, global carbon emissions have more than doubled⁴, which equates to more than the total carbon emissions for the US, China and the EU combined in 2021.

- To feed an additional 1.7 billion people by 2050, an area of natural habitat one-and-a-half times the size of the Amazon rainforest could be converted to farmland.⁵

- The world could lose more than a quarter of its forests for food production alone by 2050 to feed the growing global population.⁶

- By 2050 the world will require an additional 62

trillion litres of fresh water annually to account just for the basic personal needs of the growing population.⁷ An additional 1.5 billion people are expected to be plunged into water scarcity in 2050.⁸

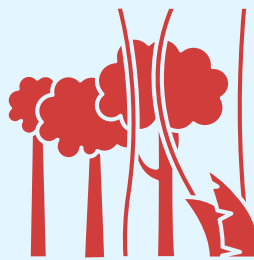
- If all eight billion people had the same lifestyle as the average person living in the

UK, we would need 2.64 planets to meet our need for renewable resources⁹.

- Population Matters is calling for a different, better world. Choosing smaller families will help radically slow the pace of environmental degradation worldwide.¹⁰

BY 2050:

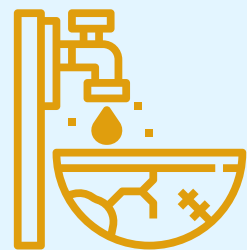
AN AREA



**1.5 X THE SIZE OF THE AMAZON RAINFOREST
COULD BE LOST TO GROW FOOD**

BY 2050:

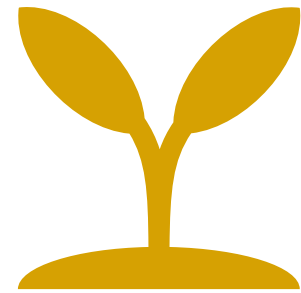
AN ADDITIONAL



**1.5 BILLION WILL BE
PLUNGED INTO WATER SCARCITY**



1974 - 2022 - SEEING DOUBLE



Conversion of once untainted wilderness into agricultural land used for food production is one of the leading contributors of greenhouse gas emissions.

Today, a global population of 8 billion is serviced by at least 5 billion hectares, with one-third of this used as cropland and the remaining two-thirds consisting of land for grazing livestock.¹¹

In the last 50 years, 60% of the world's species population have declined as a result of the growing global population's demand for food and resources¹².

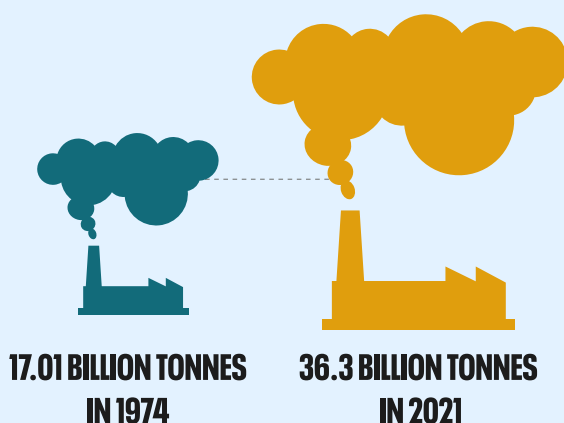
More than half of all forest-dwelling wildlife has declined since 1970¹³, and the situation is only set to get worse.

Global carbon emissions have more than doubled from 17.01 billion tonnes in 1974¹⁴, when the population was at 4 billion. The International Energy Agency has reported that total global carbon emissions in 2021 was 36.3 billion tonnes, which is an increase of just over 19 billion tonnes since 1974. This is the equivalent to the gross annual carbon emissions of China, the US and the European Union combined¹⁵.

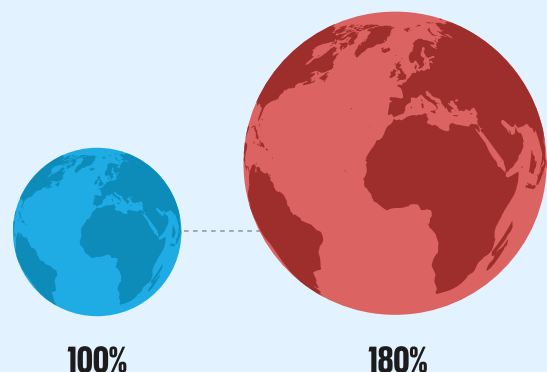
The IEA report also highlighted that global carbon emissions in 2021 were the highest annual figure ever recorded. According to the Intergovernmental Panel on Climate Change, population growth and GDP growth have been the two strongest drivers of emissions over the last decade¹⁶.

Meanwhile, 8 billion people this year will use up the entire amount of renewable natural resources the Earth can provide, and then an additional 80% above that¹⁷.

EMISSIONS HAVE MORE THAN DOUBLED



HUMANKIND IS USING THE EARTH'S NATURAL RESOURCES 1.8 TIMES FASTER THAN THEY ARE ABLE TO REGENERATE





IN THE LAST 50 YEARS, 60% OF THE WORLD'S SPECIES' POPULATIONS HAVE DECLINED



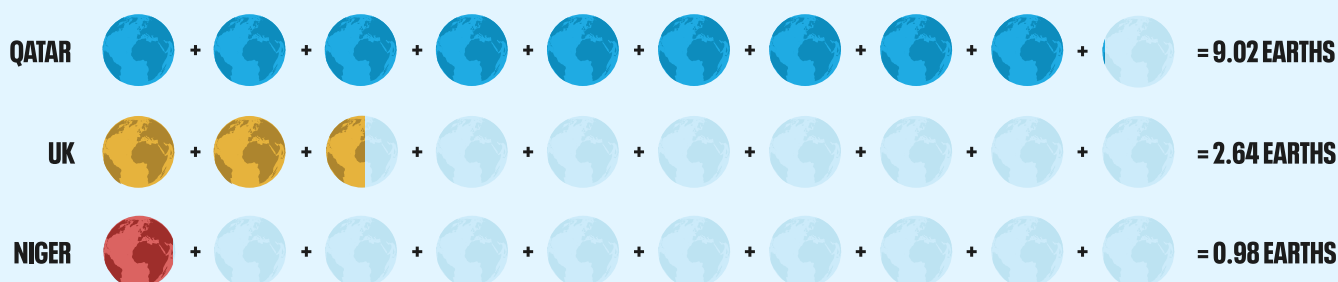
At 8 billion people, an estimated 15 billion trees are cut down each year¹⁸ and around 12 million hectares of productive land is being lost as a result of man-made climate change¹⁹. This is having far-reaching consequences for the growing human population and the natural world.

The 8 billion people today are hugely divided in terms of their wealth and environmental impact.

If the 8 billionth child is born in Qatar, they will produce 30 tonnes of CO₂ annually and it would require 9 Earths to meet their demand for renewable resources if the entire global population of 8 billion people consumed at their rate. If the child is born in the UK, they will produce an average of 8.3 tonnes of CO₂, and it would require 2.6 Earths. If they are born in Niger, they will produce less than 0.1 tonne of CO₂ and just 0.98²⁰ Earths would be needed.

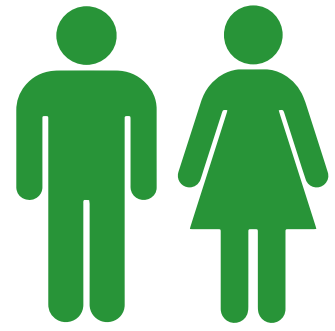
In our world of 8 billion people, 1.2 billion still live in poverty. In 15 countries in Sub-Saharan Africa and one country in the Arab States, the number living in poverty has increased, despite a reduction in the proportion of people living in poverty, because of their population growth. Those countries include Ethiopia, Niger, Nigeria and the Democratic Republic of Congo.²¹

THE GLOBAL DIVIDE IN RESOURCE CONSUMPTION



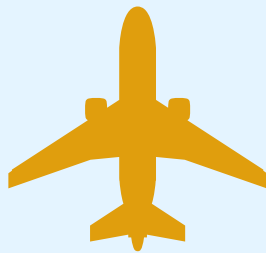
NUMBER OF EARTHS REQUIRED TO MEET DEMAND FOR RENEWABLE RESOURCES IF EVERYONE ON EARTH CONSUMES AT THE SAME RATE AS AN AVERAGE CITIZEN IN EACH COUNTRY.

2022 – 8 BILLION HUMAN BODIES

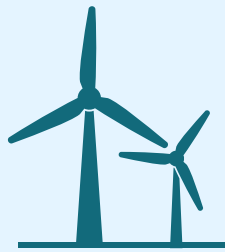


8 BILLION PEOPLE WEIGH A COMBINED 496 BILLION KILOGRAMS²²

A WEIGHT EQUIVALENT TO MORE THAN

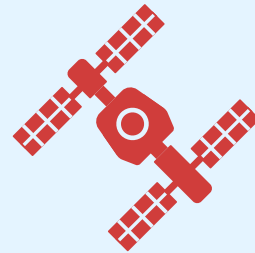


**3 MILLION
BOEING 747 AIRCRAFT**



**2.77 MILLION
WIND TURBINES**

OR MORE THAN



**1 MILLION INTERNATIONAL
SPACE STATIONS**

**8 BILLION PEOPLE STOOD ON EACH OTHER'S SHOULDERS
WOULD STRETCH FOR 13.22 MILLION KILOMETRES²³**

A DISTANCE EQUIVALENT TO



**17 RETURN JOURNEYS FROM THE
EARTH TO THE MOON**

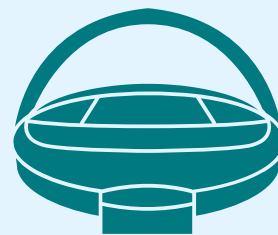
OR



**3,294 TRIPS AROUND THE
CIRCUMFERENCE OF THE EARTH**

**IF 8 BILLION PEOPLE WANTED A SEAT
AT WEMBLEY STADIUM²⁴**

WE WOULD NEED



**88,888
STADIUMS**

**8 BILLION PEOPLE PRODUCE 1.768 MILLION TONNES
OF BODILY WASTE [URINE AND FAECES] PER DAY²⁶**

WHICH IS 130 TIMES THE SIZE OF THE DAILY INTAKE OF

THE LARGEST LANDFILL SITE IN THE USA

THE APEX REGIONAL LANDFILL SITE



**8 BILLION PEOPLE REQUIRE 18 BILLION
KILOCALORIES PER DAY IN TOTAL²⁵**

EQUIVALENT TO



11.75 BILLION CHOCOLATE CAKES PER DAY

2050 – THE WORLD AT 9.7 BILLION PEOPLE



The UN projects a population of 9.7bn people in 2050. The additional 1.7bn will all generate climate change emissions.

Research has identified action to address population growth through provision of family planning and high quality education as the third most effective climate solution in limiting warming to 2°C, and the seventh most effective in limiting warming to 1.5°C by 2100, with potential CO₂ savings of 68.9 gigatonnes of CO₂ equivalent by 2050.²⁷

In a warming planet with an exploding population, the water scarcity crisis is set to get ever deeper.

The World Health Organization states that a minimum of between 50 and 100 litres of water per person per day is needed to ensure that their most basic needs are met and few health concerns arise. This ordinarily includes drinking, personal sanitation, washing of clothes, food preparation, personal and household hygiene,

but this does not include water requirements for growing food and for industry purposes.²⁸

This means by 2050 the global population will require an extra 62.05 trillion litres of water annually for basic needs²⁹ and a total of more than 920 trillion litres for domestic, industrial and agricultural needs, an amount that is over four times the total volume in the Dead Sea.³⁰

On current levels of land use, a global population of 9.7 billion in 2050 would require an additional 1.0625 billion hectares of agricultural land than is used today – an area one

and a half times the size of the Amazon rainforest.

The extra land for food production alone is also equivalent to more than a quarter of the world's forests.³¹

This would put unprecedented pressure on flora and fauna.

On our current trajectory of population and consumption, humanity will use nearly three Earth's worth of renewable resources by 2050.³²

Humanity will need nearly 50% more energy by 2050, as a result of population and economic growth.³³



THE BENEFITS OF CHOOSING SMALLER FAMILIES



But it does not have to be like this. By reducing consumption levels in the richest countries and minimising future population growth globally, we can live within the planet's limits and ensure a decent life for the 8 billionth child and those that follow them.

Choosing a smaller family is one of the most effective things a person in a high-income country can do to protect the planet.

Especially for people living in affluent societies with the greatest environmental impact, choosing to have fewer children can help to:

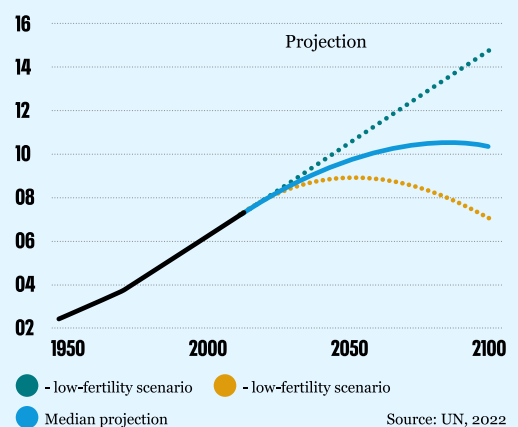
- Provide more open spaces and access to nature in urban areas;
- Provide higher quality and easier access to infrastructure and services;
- Ensure cleaner air and easier work commutes;
- Preserve and grow the Earth's natural habitats;
- Reduce and reverse biodiversity loss and;
- Reduce carbon emissions and help progress towards a cooler planet.

According to UN data, on average, if every other family had one fewer child than it has assumed (i.e. 'half a child less' per family), there will be one billion fewer of us than it expects by 2050 – and about 3.5 billion fewer by the end of the century (within the lifetimes of many children born now). If that happens, our population will be smaller than it is today. A different, better future is possible.



UNITED NATIONS POPULATION PROJECTIONS TO 2100

WORLD POPULATION (BILLIONS)



ENSURING THE CHOICE FOR ALL



Currently:

- an estimated 270 million women have an unmet need for contraception³⁵
- 129 million girls are out of school, including 32 million of primary school age, 30 million of lower-secondary school age, and 67 million of upper-secondary school age³⁶
- 383 million women and girls live in extreme poverty, and 368 million men and boys³⁷
- gender equality will not be achieved for another 86 years³⁸
- the Human Development Index has moved backwards for two years in a row for the first time ever³⁹



In countries where population growth is currently high, bending down the curve of population growth can be achieved by faster progress in achieving gender equality, zero unmet need for modern contraception, poverty alleviation, universal education and ending child mortality. That will ensure that the global population peaks earlier and at a lower level than the 10.4 billion the UN currently projects.

Population Matters is calling for a different, better world. According to Nobel Peace Prize laureate and activist, Malala Yousafzai, this can be delivered if women's rights and choice are provided universally. She said: "When girls go to school, they learn the skills to overcome climate-related shocks, like the critical thinking capabilities needed to process and act on the risk of weather reports. Countries that have invested in girls' education have suffered far fewer deaths from droughts and floods than countries with lower levels of girls' education. Additionally, if every girl was able to exercise her sexual and reproductive health and rights through quality education and had access to modern contraception, it could reduce total emissions from fossil fuels by 37%–41% by the end of the century³⁴."

ABOUT POPULATION MATTERS

Population Matters is a UK-based charity working with partners, friends and stakeholders globally to achieve a better future for people and planet.

We campaign, inform, undertake research and do all we can to encourage an open, fair-minded and constructive debate about population.

We promote positive, practical, ethical and entirely voluntary solutions – encouraging smaller families, inspiring people to consume sustainably, with the aim of enabling everyone to enjoy a decent quality of life whilst respecting and sustaining the natural ecosystems upon which all life on Earth depends.




We empower choice. In a world of finite resources our reproductive and consumption choices are critical for achieving that vision of humanity in harmony with nature, prospering on a healthy planet. We believe everyone should have the freedom and ability to choose a smaller family.

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Prepared in collaboration with Higginson Strategy.



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ENDNOTES

1 [United Nations](#)

2 [United Nations](#)

3 Emissions from fossil fuel use and land use change: 19.6bn in 1970 and 40.5bn in 2019. (Covid caused drop in 2020). Global population has increased by over 240m since 2019 (7.76bn), according to figures [Our World In Data](#)

4 According to the [International Energy Agency \(IEA\)](#), the total global carbon emissions for 2021 stood at 36.3 billion tonnes. If the population grows to 9.7 billion by 2050, and the average human emits the same amount of carbon as today, this would come to 43.08 billion tonnes of carbon. from Our World in Data

5 [The Food and Agriculture Organization of the United Nations](#) estimates the world's current agricultural land use stands today at approximately 5 billion hectares. The population in 2050 is set to be approximately 21.25 percent higher in 2050 than it is in 2022. And as a result, demand for agricultural land use may increase to approximately 6.0625 billion hectares. This is an increase of 1.0625 billion hectares since 2022. This figure is 1.58 times the size of the Amazon's [670 million hectares](#) of primary rainforest.

6 [The Food and Agriculture Organization of the United Nations](#) estimates the global forest landmass stands at approximately 4 billion hectares. The additional 1.0625 billion hectares of additional agricultural land required by 2050 is equivalent to 26.56 percent of the world's total forestry cover.

7 [The World Health Organization](#) states up to 100 litres of water per person day are required to ensure their basic needs are met. The global population is set to be 1.7 billion higher in 2050 than it is in 2022. This will create an increase demand for water of some 170 billion litres of water daily by 2050. This equates to some 62.050 trillion litres of water annually.

8 [UNICEF](#) estimates in 2022 some 4 billion people worldwide experience water scarcity for at least one month a year. UN Water forecasts by 2050 some 57 percent of the global population will experience water scarcity for at least one month a year by 2050. The global population is forecast to hit 9.7 billion in 2050. 57 percent of 9.7 billion is 5.529 billion. Thus, a forecasted 1.529 billion more people are due to be affected by water scarcity in 2050 than in 2022.

9 [Population Matters](#)

10 [Population Matters](#)

11 [Food and Agriculture Organization](#)

12 [WWF Living Planet Report 2018](#)

13 [World Wild Life Fund - WWF](#)

14 [Our World in data](#)

15 [International Energy Agency](#)

16 [IPCC Sixth Assessment Report](#)

17 Data from [Global Footprint Network](#), which uses emissions data from [The Global Carbon Budget 2020](#)

18 Mapping tree density at a global scale from [Nature](#)

19 [United Nations](#)

20 Resource use data from Global Footprint Network, as above. Emisisions data from [The Global Carbon Budget 2020](#).

21 Figures from the [Global Multidimensional Poverty Index \(2022\)](#). It found that, in 2006, 13.3 million people in Niger (92.9% of the total population) lived in poverty, which grew to 22.1 million people in 2020, despite the proportion being less than 90% of the population. Equally, in the Democratic Republic of Congo, 46.2 million people lived in poverty (76.7% of the total population) in 2007, which grew to 59.9 million people (less than 65% of the total population) in 2020.

22 According to a [BMC Public Health report](#) in 2012, the world average for an adult's weight is 136.7 pounds, or 62 kilograms. This uses global adult human biomass data from 2005, so this figure should be interpreted as a baseline because the global adult weight continues to grow. To consider the total weight of the world's population at eight billion, the individual weight (62kg) is multiplied by eight billion, which comes to 496 billion kilograms, or 496 million tonnes. A standard Boeing 747-400ER Freighter is estimated to weigh 412,770kg (412.77 tonnes). A wind turbine weighs 179 tonnes in total. The International Space Station weighs one million pounds (453.59 tonnes). By dividing the total weight of the population by each of these objects in tonnage, the result is as follows. Boeing 747 – Over 1.2 million. Wind Turbine – Over 2.7 million. ISS – Over 1.09 million.

23 According to [Our World in Data](#), the global average height of an adult woman is 159.5cm and an adult man is 171cm, which has a mean of 165.25cm. When this figure is multiplied by the global population on 15 November, it comes to 1.322 trillion centimetres (or over 8.2 million miles). According to [NASA](#), the Moon is 238,855 miles away from the

Earth, so a return trip is 477,710 miles in total. If the overall height is divided by the total distance of a return trip to the Moon, this comes to just over 17. The equatorial circumference of Earth is about 24,901 miles.

By dividing the overall height of the global population by 24,901, it comes to nearly 294. Therefore, the global population's total height equates to 294 trips around the Earth. Finally, [Space.com](#) reports that the distance to the Sun is said to be over 149 million kilometres (or 92,745,864 miles). By dividing the total distance to the Sun by the global population's total height, this comes to 11.31. Therefore, if every human stood on one another head-to-toe, they would reach over 10% of the distance to the Sun.

24 [Wembley Stadium](#) has a total capacity of 90,000. To visualise the size of eight billion people, you take the global population figure and divide it by 90,000, which comes to over 88,888. Therefore, the global population could fill Wembley Stadium nearly 90,000 times.

25 According to the [NHS](#), the recommended daily calorie intake is 2,000 a day calories for women and 2,500 a day for men, which is an average of 2,250 calories in total. This is an average for a healthy person, and variations depend on age, metabolism, body size and levels of physical activity. The total figure is 2,250 calories multiplied by eight billion and converted into kilocalories. [East This Much](#) writes that a large, whole chocolate cake has 1,530 calories, which is an over-estimate when compared to other food websites. This figure can therefore be seen as a baseline.

26 A paper published to the [National Library of Medicine](#) in 2015 found that the average bodily waste produced by humans varies greatly between high- and low-income countries. Using the data shown on Table 3, which accounts for both wet and dry mass produced, this comes to 221g/day on average per person. When this figure is multiplied by the global population and converted into tonnes, it comes to 1.768 million tonnes in total. In 25 days, the global population will produce an equivalent amount of bodily waste to the estimated weight of the largest landfill in the USA, the [Apex Regional landfill](#) (45.4 million tonnes).

27 [Project Drawdown](#)

28 [The World Health Organization](#)

29 Reassessing the projections of the [World Water Development Report](#)

30 [The World Health Organization](#) states up to 100 litres of water per person day are required to ensure their basic needs are met. The global population is set to be 1.7 billion higher in 2050 than it is in 2022. This will create an increase demand for water of some 170 billion litres of water daily by 2050. This equates to some 62.050 trillion litres of water annually.

31 [The Food and Agriculture Organization of the United](#)

[Nations](#) estimates the global forest landmass stands at approximately 4 billion hectares. The additional 1.0625 billion hectares of additional agricultural land required by 2050 is equivalent to 26.56 percent of the world's total forestry cover.

32 Data from the [Global Footprint Network](#)

33 Data provided by the [US Energy Information Authority 2021](#)

34 [Malala Fund](#)

35 Unmet need has increased from 230m in 1990 to 270m in 2020: [Kantarova et al \(2020\)](#) 'Estimating progress towards meeting women's contraceptive needs in 185 countries: A Bayesian hierarchical modelling study', PLOS Medicine

36 [UNICEF](#)

37 [United Nations Progress on the Sustainable Development Goals: gender snapshot](#)

38 [United Nations Progress on the Sustainable Development Goals: gender snapshot](#)

39 United Nations' [Human Development Report 2021/2022](#)