Tracing the Growth of the Global Community: A Population Forecasting Analysis

Contents

The number of people in the world increased more than 4-fold during the 20th century. What will the future look like?

Summary

The UN projects that the global population will increase from a population of around 8 billion in 2022 to 10.4 billion by the end of the century. By that time, the UN projects, fast global population growth will come to an end.

Beneath the global level, there are of course big differences between different world regions and countries. While in some regions the world population will likely grow rapidly for the coming decades, other regions will continue to see declining population numbers.

Global population growth is determined by the number of births and deaths. Improving health is increasing the size of the population as it is decreasing mortality. The countervailing trend is falling fertility rates – the trend of couples having fewer children is what brought rapid population growth to an end in many countries already, and what will bring an end to rapid population growth globally.

The global population growth rate has already slowed down considerably: it reached its peak at over 2% in the 1960s and has been falling since.

The UN projections for the global population growth rates, which have been produced since the 1950s, have a good track record in projecting the size of the global population.

While the UN projections are most widely known, there are other very-carefully-produced projections. The demographers of WC-IIASA model what will happen according to different scenarios and make clear that the population growth rate tomorrow depends on what we do today. Rapid progress in getting children – and especially girls – into schools will result in a much smaller global population.

The biggest disagreement between different projections is concerning the future of Africa. While the UN projects an almost 3-fold increase of the population of Africa, other researchers find a much smaller increase more likely.

Interactive charts on Future Population Growth

Other relevant research:

World population growth – This article is focusing on the history of population growth up to the present. We show how the world population grew over the last several thousand years and we explain what has been driving this change.

Life expectancy – Improving health leads to falling mortality and is therefore the factor that increases the size of the population. Life expectancy, which measures the age of death, has doubled in every region in the world as we show here.

Fertility rates – Rapid population growth has been a temporary phenomenon in many countries. It comes to an end when the average number of births per woman – the fertility rate – declines. In the article we show the data and explain why fertility rates declined.

Age Structure – What is the age profile of populations around the world? How did it change and what will the age structure of populations look like in the future?

Global population growth

IN THIS SECTION

One of the big lessons from the demographic history of countries is that periods of rapid population growth are temporary. For many countries, the demographic transition has already ended, and as the global fertility rate has now halved we know that the world as a whole is approaching the end of rapid population growth.

This visualization presents an overview of the global demographic transition, based on estimates from the 2022 data release from the UN Population Division.

As we explore at the beginning of the entry on population growth, the global population grew only very slowly up to 1700 – only 0.04% per year. In the many millennia up to that point in history very high mortality of children counteracted high fertility. The world was in the first stage of the demographic transition.

Once health improved and mortality declined things changed quickly. Particularly over the course of the 20th century: Over the last 100 years global population more than quadrupled. As we see in the chart, the rise of the global population got steeper and steeper and you have just lived through the steepest increase of that curve. This also means that your existence is a tiny part of the reason why that curve is so steep.

The 7-fold increase of the world population over the course of two centuries amplified humanity's impact on the natural environment. To provide space, food, and resources for a large world population in a way that is sustainable into the distant future is without question one of the large, serious challenges for our generation. We should not make the mistake of underestimating the task ahead of us. Yes, I expect new generations to contribute, but for now, it is upon us to provide for them. Population growth is still fast: every year, 134 million are born, and 58 million die.1 The difference is the number of people that we add to the world population in a year: 76 million.

Where do we go from here?

In pink, you see the annual population growth rate (that is, the percentage change in population per year) of the global population. It peaked around half a century ago. Peak population growth was reached in 1963 withContents

The number of people in the world increased more than 4-fold during the 20th century. What will the future look like?

Summary

The UN projects that the global population will increase from a population of around 8 billion in 2022 to 10.4 billion by the end of the century. By that time, the UN projects, fast global population growth will come to an end.

Beneath the global level, there are of course big differences between different world regions and countries. While in some regions the world population will likely grow rapidly for the coming decades, other regions will continue to see declining population numbers.

Global population growth is determined by the number of births and deaths. Improving health is increasing the size of the population as it is decreasing mortality. The countervailing trend is falling fertility rates – the trend of couples having fewer children is what brought rapid population growth to an end in many countries already, and what will bring an end to rapid population growth globally.

The global population growth rate has already slowed down considerably: it reached its peak at over 2% in the 1960s and has been falling since.

The UN projections for the global population growth rates, which have been produced since the 1950s, have a good track record in projecting the size of the global population.

While the UN projections are most widely known, there are other very-carefully-produced projections. The demographers of WC-IIASA model what will happen

according to different scenarios and make clear that the population growth rate tomorrow depends on what we do today. Rapid progress in getting children – and especially girls – into schools will result in a much smaller global population.

The biggest disagreement between different projections is concerning the future of Africa. While the UN projects an almost 3-fold increase of the population of Africa, other researchers find a much smaller increase more likely.

Interactive charts on Future Population Growth

Other relevant research:

World population growth – This article is focusing on the history of population growth up to the present. We show how the world population grew over the last several thousand years and we explain what has been driving this change.

Life expectancy – Improving health leads to falling mortality and is therefore the factor that increases the size of the population. Life expectancy, which measures the age of death, has doubled in every region in the world as we show here.

Fertility rates – Rapid population growth has been a temporary phenomenon in many countries. It comes to an end when the average number of births per woman – the fertility rate – declines. In the article we show the data and explain why fertility rates declined.

Age Structure – What is the age profile of populations around the world? How did it change and what will the age structure of populations look like in the future?

Global population growth

IN THIS SECTION

Two centuries of rapid global population growth will come to an end

Two centuries of rapid global population growth will come to an end

One of the big lessons from the demographic history of countries is that periods of rapid population growth are temporary. For many countries, the demographic transition has already ended, and as the global fertility rate has now halved we know that the world as a whole is approaching the end of rapid population growth.

This visualization presents an overview of the global demographic transition, based on estimates from the 2022 data release from the UN Population Division.

As we explore at the beginning of the entry on population growth, the global population grew only very slowly up to 1700 – only 0.04% per year. In the many millennia up to that point in history very high mortality of children counteracted high fertility. The world was in the first stage of the demographic transition.

Once health improved and mortality declined things changed quickly. Particularly over the course of the 20th century: Over the last 100 years global population more than quadrupled. As we see in the chart, the rise of the global population got steeper and steeper and you have just lived through the steepest increase of that curve. This also means that your existence is a tiny part of the reason why that curve is so steep.

The 7-fold increase of the world population over the course of two centuries amplified humanity's impact on the natural environment. To provide space, food, and resources for a large world population in a way that is sustainable into the distant future is without question one of the large, serious challenges for our generation. We should not make the mistake of underestimating the task ahead of us. Yes, I expect new generations to contribute, but for now, it is upon us to provide for them. Population growth is still fast: every year, 134 million are born, and 58 million die.1 The difference is the number of people that we add to the world population in a year: 76 million.

Where do we go from here?

In pink, you see the annual population growth rate (that is, the percentage change in population per year) of the global population. It peaked around half a century ago. Peak population growth was reached in 1963 with

Where do we go from here?

In pink, you see the annual population growth rate (that is, the percentage change in population per year) of the global population. It peaked around half a century ago. Peak population growth was reached in 1963 with an annual growth of 2.3%.

Since then the increase of the world population has slowed and today grows by 0.9% per year. This slowdown of population growth was not only predictable but predicted. Just as expected by demographers, the world as a whole is experiencing the closing of a massive demographic transition.

This chart also shows how the United Nations envision the end of the global demographic transition. As population growth continues to decline, the curve representing the world population is getting less and less steep.

Towards the end of the century, the UN expects the global population to reach its peak at around 10.4 billion. After this point, the UN demographers project global population growth to become negative, so that the world population starts to fall slowly.

It is hard to know the population dynamics beyond 2100. It will depend on the fertility rate and – as we discuss in our entry on fertility rates – fertility first falls with development, and then rises with development. The question will be whether it will rise above an average of 2 children per woman.

The world enters the last phase of the demographic transition and this means we will not repeat the past. The global population has quadrupled over the course of the 20th century, but it will not double anymore over the course of this century.