

# World population in 2100 could be 2 billion below UN projections

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By 2100, more than 20 countries—including Japan, Spain, Italy, Thailand, Portugal, South Korea and Poland—will see their populations decline by at least half

Earth will be home to 8.8 billion souls in 2100, two billion fewer than

current UN projections, according to a major study published Wednesday that foresees new global power alignments shaped by declining fertility rates and greying populations.

By century's end, 183 of 195 countries—barring an influx of immigrants—will have fallen below the replacement threshold needed to maintain [population](#) levels, an international team of researchers reported in *The Lancet*.

More than 20 countries—including Japan, Spain, Italy, Thailand, Portugal, South Korea and Poland—will see their numbers diminish by at least half.

China's will fall nearly that much, from 1.4 billion people today to 730 million in 80 years.

Sub-Saharan Africa, meanwhile, will triple in size to some three billion people, with Nigeria alone expanding to almost 800 million in 2100, second only to India's 1.1 billion.

"These forecasts suggest good news for the environment, with less stress on food production systems and lower carbon emissions, as well as significant economic opportunity for parts of sub-Saharan Africa," lead author Christopher Murray, director of the Institute for Health Metrics and Evaluation (IHME) at the University of Washington, told AFP.

"However, most countries outside of Africa will see shrinking workforces and inverting population pyramids, which will have profound negative consequences for the economy."

For high-income countries in this category, the best solutions for sustaining population levels and [economic growth](#) will be flexible immigration policies and [social support](#) for families who want children,



the study concluded.

"However, in the face of declining population there is a very real danger that some countries might consider policies that restrict access to reproductive health services, with potentially devastating consequences," Murray cautioned.

## **866 million people over 80**

"It is imperative that women's freedom and rights are at the top of every government's development agenda."



Sub-Saharan Africa will see its population triple to some three billion people by 2100

Social services and healthcare systems will need to be overhauled to accommodate much older populations.

As fertility falls and life expectancy increases worldwide, the number of children under five is forecast to decline by more than 40 percent, from 681 million in 2017 to 401 million in 2100, the study found.

At the other end of the spectrum, 2.37 billion people—more than a quarter of the global population—will be over 65 years old by then.

Those over 80 will balloon from about 140 million today to 866 million.

Sharp declines in the number and proportion of the working-age population will also pose huge challenges in many countries.

"Societies will struggle to grow with fewer workers and taxpayers," noted Stein Emil Vollset, a professor at the IHME.

The number of people of working age in China, for example, will plummet from about 950 million today to just over 350 million by the end of the century—a 62 percent drop.

The decline in India is projected to be less steep, from 762 to 578 million.

In Nigeria, by contrast, the active labour force will expand from 86 million today to more than 450 million in 2100.

These tectonic shifts will also reshuffle the pecking order in terms of economic clout, the researchers forecast.





China's working-age population will fall by 48%, from 1.4 billion people today to 730 million in 80 years

### **A new multipolar world**

By 2050, China's gross domestic product will overtake that of the United States, but fall back into second place by 2100, they predict.

India's GDP will rise to take the number three spot, while Japan, Germany, France and the UK will stay among the world's 10 largest economies.

Brazil is projected to fall in ranking from eighth today to 13th, and Russia from the number 10 spot to 14th. Historical powers Italy and Spain, meanwhile, decline from the top 15 to 25th and 28th, respectively.

Indonesia could become the 12th largest economy globally, while Nigeria—currently 28th—is projected to crack the top 10.

"By the end of the century, the world will be multipolar, with India, Nigeria, China and the United States the dominant powers," said Richard Horton, describing the study as outlining "radical shifts in geopolitical power."

Until now, the United Nations—which forecasts 8.5, 9.7 and 10.9 billion people in 2030, 2050 and 2100, respectively—has virtually had a monopoly in projecting global population.

The difference between the UN and IHME figures hinges crucially on [fertility rates](#). The so-called "replacement rate" for a stable population is 2.1 births per woman.

UN calculations assume that countries with low fertility today will see those rates increase, on average, to about 1.8 children per woman over time, said Murray.

"Our analysis suggests that as women become more educated and have access to reproductive health services, they choose to have less than 1.5 children on average," he explained by email.

"Continued global population growth through the century is no longer the most likely trajectory for the world's population."

Founded in 2007 and supported by the Bill and Melinda Gates

Foundation, the IHME had become a global reference for health statistics, especially its annual Global Burden of Disease reports.

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