

28 September 2013 Last updated at 23:14 GMT

# Is population growth out of control?

By Hannah Barnes BBC News



The respected broadcaster and naturalist, Sir David Attenborough, told the BBC recently that population growth was "out of control" - but one expert says the number of people on the planet could peak in 40 years. Who should we believe?

"The world's population is increasing out of control," [Sir David told the BBC's Today programme](#).

"Since I first started making programmes 60 years ago, the human population has tripled."

Two striking claims.

Let's take the second one first - that the world's population has tripled in 60 years.

In 1950, around the time Sir David began his broadcasting career, there were 2.53 billion people in the world. Sixty-three years later and the latest estimate of world population is 7.16 billion.

## David Attenborough



- Born in 1926, younger brother of actor and director Richard Attenborough
- Wrote and presented the Life series of wildlife documentaries for BBC TV, beginning with Life on Earth in 1979
- Also narrated The Blue Planet, Planet Earth, and Frozen Planet
- Patron of Population Matters, a campaign group that urges couples to have two or fewer children

That is a little shy of tripling - more like a factor of 2.8 - but it's not far off.

The "out of control" claim is less easily measurable, but perhaps it could be interpreted as the idea that the population will continue to grow at the same rate, roughly tripling in 60 years.

If this happened, the world population would reach almost 40 billion people by the end of this century.

But the latest United Nations projection puts the figure at little more than a quarter of that - less than 11 billion.

That's still 50% more than we have today, but it shows the UN expects much slower population growth in the decades to come than in decades gone by.

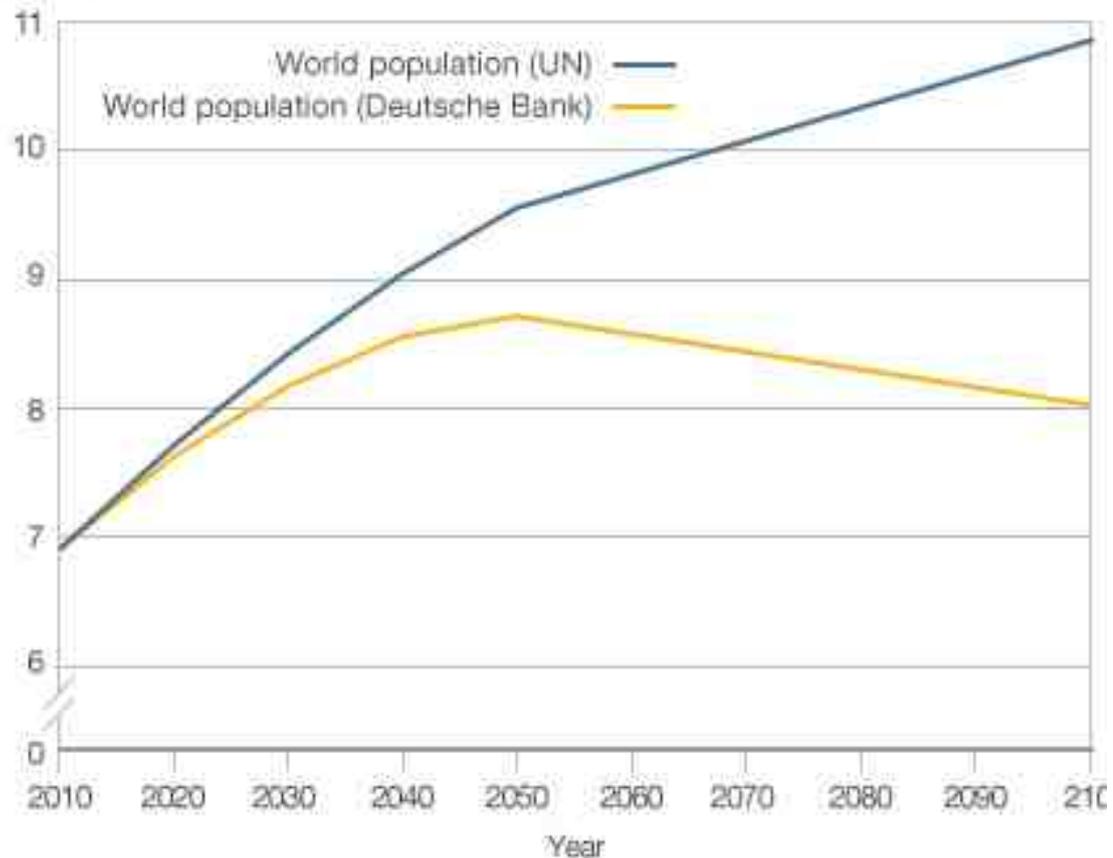
Some might consider that an increase in the world population from seven billion to 11 billion by 2100 still represents out-of-control population growth.

But this UN figure - contained in its World Population Prospects, published every two years - is considered by one expert, at least, to be much too high.

## How much will the world's population rise by?

UN and Deutsche Bank's population projections compared

Billions of people



Source: UN and Deutsche Bank

"When I looked at them I discovered that they were almost certainly wrong," says Sanjeev Sanyal, Global Strategist for Deutsche Bank, of the [latest update of the World Population Prospects](#), released in June this year.

Population growth projections feed into many other forecasts and models - projections of energy use, for example, or corporate profits - so people like Sanyal scrutinise these UN figures carefully.

And he finds the UN projections "difficult to justify" for a number of reasons.



"If you look at fertility rates - the number of babies that a woman has over the course of her life - in very large parts of the world, those fertility rates are now below what is needed to replace the population," he says.

## **More or Less: Behind the stats**

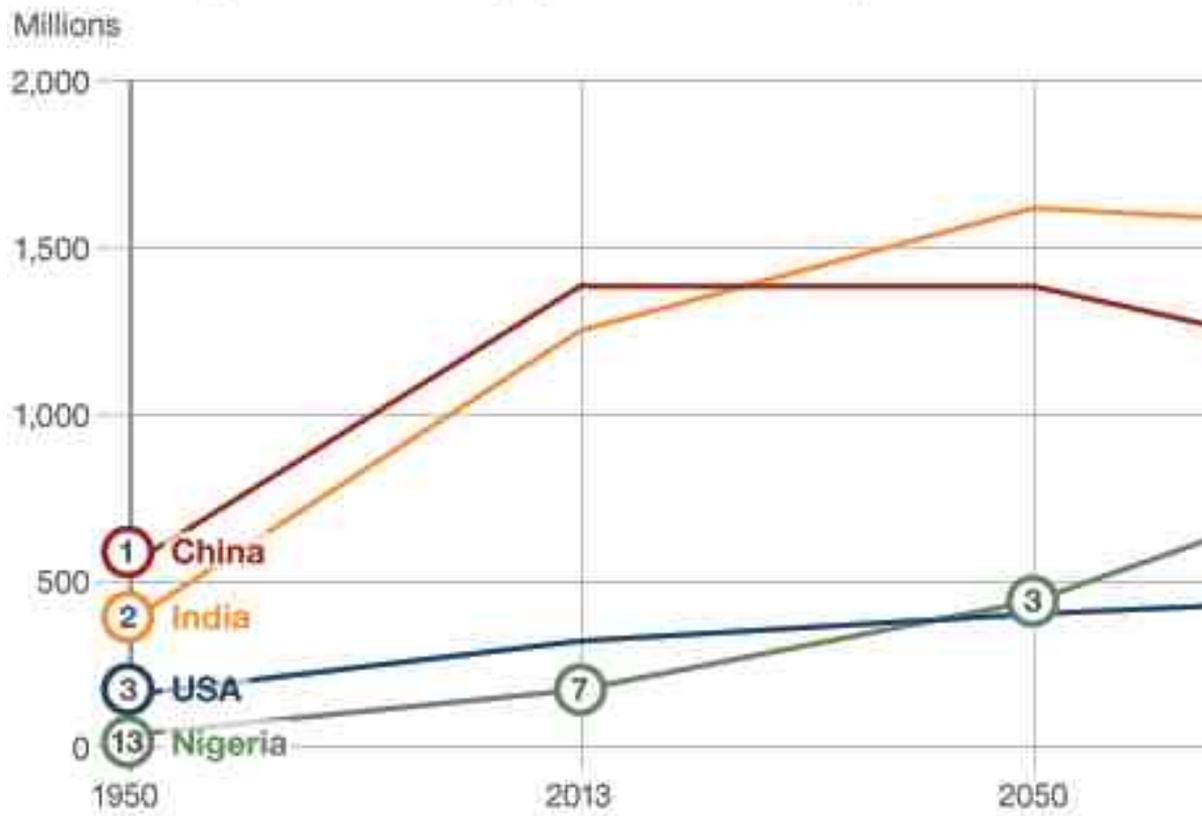
"Much of Europe, Japan, large countries like China, even Brazil, don't produce [the necessary] 2.2 or 2.3 babies [per woman]. Some of them are way below that level and as a result it is almost certain that these huge countries are going to see rapidly declining populations within a few decades from now."

The replacement rate is higher than two, because some women will die before they reach the end of their child-bearing years.

Also, in developing countries the UN predicts rapidly expanding populations.

In Nigeria, for example, it expects the current figure of roughly 160 million to increase to almost one billion by the end of the century.

## Rise of Nigeria in world population rankings



Source: UN

Sanyal is sceptical.

"Surely Nigerians will recognise at some points that things are getting crowded and stop having so many babies?" he argues.

He predicts the Nigerian population in 2100 will be 400 million fewer than the UN suggests.

## Growing Africa



Taking its population as a whole, this century Africa's story will be one of incredible growth - beyond that of any other region in the world. It's expected to account for more than half of the total global population growth between now and 2050.

His forecasts are lower for the world's two largest countries too. He predicts China's

population will be 60 million fewer than the UN forecasts for 2100, and India's 100 million.

"Even the US is quite suspect," Sanyal says.

Here, the UN predicts a rise from 312 million today to 462 million in 2100.

"That would be extraordinary for a country which already has birth rates below the replacement rate... You will need huge amounts of migration into the US to reach anywhere near [that]."

It is likely that lots of people will migrate to the US. Sanyal accepts that the US population will grow.

But to increase at this rate he insists that other countries would have to be showing falls in population - falls that do not appear in the UN figures.

Overall, Sanyal paints a very different picture from the UN, with world population peaking around 2050 at 8.7 billion and declining to about 8 billion by the end of the century. That's about a billion higher than it is now, but well short of the UN's 11 billion.

Both Sanyal and the UN start with the same data - national censuses from 2010. The difference arises because they make different assumptions about fertility, mortality and migration.

"I took into account two or three things which I think are inadequately reflected in the UN [report]," Sanyal explains.

## **The world at seven billion**

The world's population hit seven billion in 2011. After growing very slowly for most of human history, the number of people on Earth has more than doubled in the last 50 years.

"I have probably accounted more aggressively for things like gender bias in countries like China and India. The fact that they are countries with far fewer women of childbearing age than their overall population would suggest."

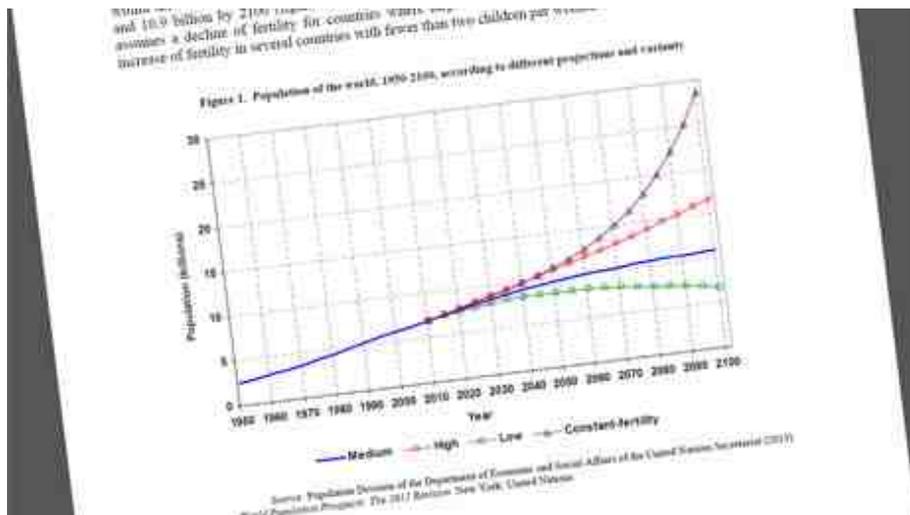
The UN predictions also assume, according to Sanyal, that all fertility rates will eventually converge towards the replacement rate - an "odd assumption" in his view.

"We have not seen any country where fertility rates have declined very dramatically [only] to have seen them drift back up to the replacement rate," he says.

And the UN has underestimated the impact of urbanisation on reducing fertility rates, he argues. Up to now, as he puts it, urbanisation has been "a very powerful contraceptive" in all countries.

For their part, the UN experts say that Sanyal must have been assuming very sharp declines in fertility rates, which they do not share, and very small changes to the global fertility rate can have a huge impact decades down the line.

The UN's own predictions highlight this.



The blue line is the

medium variant, red is high and green low

The 10.9 billion figure in 2100 is what is known as the "medium-variant" - it represents what the UN sees as the middle road.

But if you assume a fertility rate of half a child below that, the world's population would have fallen to 6.8 billion by the end of the century. Go up by half a child in the UN's model and it hits 16.6 billion.

What's more, small changes in fertility rates have a more pronounced effect over time. Sanyal's forecast and the UN's differ by 800 million at 2050. Yet, this increases to 2.8 billion by 2100.

There is plenty of room for disagreement. Let's hope the disagreements don't get "out of control".