

Curb population growth to tackle climate change: Now that's a tough ask

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Population growth plays a role in environmental damage and climate change.

But addressing [climate change](#) through either reducing or reversing growth in [population](#) raises difficult moral questions that most people

would prefer to avoid having to answer.

The English political economist [Thomas Robert Malthus](#) laid out a compelling argument against overpopulation in his famous 1798 book, [An Essay on the Principle of Population](#).

He argued that increases in food production improved human wellbeing only temporarily. The population would respond to greater wellbeing by having more children, increasing [population growth](#) and eventually over-running the food supply, leading to famine.

But his essay could not have been timed worse, coming near the beginning of the longest period of sustained [global population growth](#) in history. This was driven in part by vast [improvements in agricultural productivity](#) over time.

This idea of hard environmental limits to population growth was resurrected in the 20th century in publications such as [The Population Bomb](#), a 1968 book by Stanford biologist [Paul Ehrlich](#), and [The Limits to Growth](#), a 1972 publication commissioned by the [Club of Rome](#) think-tank.

The implication of these treatises on the perils of population growth suggest population control is an important measure to limit [carbon dioxide](#) (CO₂) emissions and global climate change.

Four key drivers of global emissions

Population growth is not the only driver of global CO₂ emissions and climate change.

The [Kaya identity](#), an equation introduced by the Japanese energy economist Yoichi Kaya in the 1990s, relates the total emissions of CO₂

to four factors:

1. total population
2. GDP per person
3. energy use per unit of GDP
4. CO₂ emissions per unit of energy.

CO₂ emissions can be addressed by reducing any one (or more) of those four factors, provided the other factors are not growing even faster than those reductions.

Not all of the factors are equally easy to affect though. That explains why to date, most countries have concentrated on reducing energy intensity (such as with home insulation to increase the efficiency of energy consumption) and reducing carbon intensity (such as with wind and solar as greener energy production methods).

But the rate of progress in slowing global CO₂ emissions has not been sufficient as yet to achieve [agreed targets](#).

Restricting economic growth

Many people have argued we should target lower [economic growth](#) to curb [environmental damage](#).

Globally, the trend is for GDP per person to increase generally over time. Reducing this growth, or moving into managed economic decline, would contribute to reducing CO₂ emissions.

But achieving reductions in CO₂ emissions through reducing economic growth comes with unavoidable distributional consequences, both within and between countries.

Not all countries have shared equally in past economic growth. Low-income countries could persuasively argue it is unfair for their current low level of development to be locked in by reducing their ability to continue to grow their economies.

The moral dilemma of population control

That leaves population control, but the issues here are no less challenging. Government-led population control presents serious moral questions for democratic countries.

That's why the only country to have undertaken a (moderately) successful form of population control is China, through the [One Child Policy](#) that ran from 1979 to 2015. Over that period, the total fertility rate in China [roughly halved](#).

But an unintended consequence of the policy is an accelerated rate of [population aging in China](#), which now has one of the oldest populations in Asia.

The most challenging aspect of using [population control](#) to reduce CO₂ emissions is ethical.

If our concern about climate change arises because we want to ensure a liveable future world for our grandchildren, is it ethical to ensure that pathway is achieved by preventing some grandchildren from ever seeing that world because they are never born?

That is a very difficult question to answer.

Population declines in some countries

Public policy initiatives to control population growth are probably not even necessary.

All high-income countries currently already have [below-replacement fertility](#), with fewer children being born than are necessary to maintain a constant population.

In the year to June 2020, New Zealand experienced its [lowest total fertility rate ever](#), with 1.63 births per woman (replacement fertility needs at least 2.1 births per woman).

Other countries are also [seeing their populations decreasing](#). For example, the population of Japan peaked in 2010 and has [declined by more than 1.4 million people](#) over the past decade.

Future population growth is projected by the United Nations to [peak at around 11 billion in 2100](#) and then to slip into slow decline after that.

So if we can get through this century without catastrophic environmental effects, then population may start to decline as a contributor to climate change.

Of course, there is a lot of [uncertainty](#) about future population growth, so only time will tell whether the UN's predictions hold true.

Other solutions

There are many ways to tackle climate change, and not all focus on emissions. We could attempt to mitigate its impacts, or adapt to environmental changes, or use technology to remove CO₂ directly from the atmosphere.

On the emissions side, we could look to reduce further the energy

intensity or carbon intensity of the economy (the final two factors in the Kaya Identity).

Innovations in any of these areas are likely to be the most fruitful avenues for dealing with climate change, in large part because they avoid the most difficult moral questions.

But if we are unwilling or unable to make those changes work, and soon, then managing population and economic growth may become our only recourse. At that point, humanity will have to confront increasingly difficult moral questions.

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