

The consumption problem

David Satterthwaite explains how it is the growth in consumption, not the growth in population, that drives climate change

It seems obvious that with more people on earth there will be greater pressure on planetary resources and larger emissions of greenhouse gases. But it is also well known that very poor households contribute little to greenhouse gas emissions. While it may seem obvious that population growth must be driving global warming, if most of this population growth is among very poor households then this cannot be true.

Global warming is driven by the number of consumers on the planet and their consumption levels. For any individual or household to contribute to global warming, they have to consume goods and services that cause greenhouse gas emissions – for instance, owning a fridge or a car and so being responsible for all the fossil fuels that go into making, distributing, advertising, selling, using and then disposing of them.

The lowest-income groups contribute very little to global warming

A significant proportion of the world's urban and rural populations – perhaps as many as one in five persons – have very low levels of greenhouse gas emissions because their incomes and thus their consumption levels are so low. There are no precise figures, but studies of resource use and consumption among low-

MAIN POINTS

- **The author explains** how little low-income households in poor countries contribute to global warming, which is instead driven by consumer numbers and consumption levels.
- **He argues that** responsibility for emissions should lie with

the individuals responsible for consumption, rather than the country where emissions occur.

- **Population growth** matters, however, because family planning can reduce the vulnerability of low income groups to climate change impacts.

income households show that most do not use fossil fuels (they rely on fuelwood, charcoal or agricultural wastes) and most do not have electricity (and so they have no household appliances that use electricity). If they do use electricity and fossil fuels (for instance, kerosene for cooking), their consumption levels are very low. Their diets are dominated by food with very low carbon footprints (unlike high-income households whose diets are very land and energy intensive). If households are so constrained in their income that family members are severely undernourished and often have to resort to eating only one meal a day, it is hardly likely that their consumption patterns are generating significant greenhouse gas emissions.

So it is not the growth in the world's population that contributes to climate change but the growth in consumption. This comes from both the growth in the number of consumers and the growth in consumption levels. Stable

or shrinking populations may still be rapidly increasing their contribution to greenhouse gas emissions. For instance, London today has less people than it had 70 years ago but the consumption levels of its population (and thus their contribution to global warming) have grown dramatically.

The contribution to global warming of a person born today depends on the circumstances into which they are born and their life possibilities and choices. To take an extreme example, an infant born into a very low-income household in Africa or Asia that dies before the age of one contributes almost nothing to global warming. This is not unusual; it is common for one in ten children in these regions to die before their first birthday. Even if a person born today avoids premature



Bangladesh

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death, they may still contribute very little to greenhouse gas emissions – for instance living a full life as a farmer with a small plot of land or an agricultural labourer or living and working in a ‘slum’ – because their consumption over their lifetime is very low. If part of their livelihood is from collecting material from waste streams and re-using or recycling it and they are credited with the greenhouse gas emissions this avoids, this further reduces their net contribution to global warming. By contrast, a child born into a high-income household that lives a full life and enjoys a high consumption lifestyle will contribute hundreds or thousands of times more to global warming.

Allocating responsibilities for reducing greenhouse gas emissions

Responsibility for emissions should be allocated to individuals and households, not nations. It should be based on the greenhouse gas implications of their consumption. The wealthiest fifth of the world’s population is likely to account for more than 80 per cent of all human-induced greenhouse gas emissions and an even higher proportion of historical contributions. Although most of these people live in high-income nations, a significant and growing proportion live in the more successful middle-income nations.

Avoiding dangerous climate change depends on greatly reducing the emissions of these wealthy households and far more attention needs to be directed at this. This requires delinking high incomes from carbon-

intensive consumption – or to put it another way, delinking a high quality of life from high consumption and waste generation. But at present we do not have systems that can measure and allocate greenhouse gas emissions to consumers. Data on emissions is for nations and it is not tied to consumption but to where the emissions take place. This is misleading because it means that greenhouse gas emissions are allocated to the producers of goods, not the consumers. So if I purchase a car, fridge or television that is made in China or Brazil, the greenhouse gas emissions that went into making these goods are allocated to China or Brazil, not me (or the country I live in). This makes the official figures for national greenhouse gas emissions misleading. It hides how much the growth in consump-



California

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tion has driven the growth in greenhouse gas emissions.

However, even if official statistics on greenhouse gas emissions do understate how much is caused by high-income nations (or rather middle- and upper-income groups in these nations), they still show the very small contribution of most low-income nations. Many low-income nations have averages for greenhouse gas emissions per person of under 0.2 tonnes of carbon dioxide equivalent a year, compared to most European nations with over 10 tonnes a year and Canada and the USA with over 20 tonnes a year.

Does population growth drive climate change?

Again, because statistics on greenhouse gas emissions are for the emissions produced within nations and not for the emissions caused by consumption, it is not possible to say how much greenhouse gas emissions have been driven by population growth. Data are also incomplete on each nation's contribution to global warming from land-use changes (including deforestation) and greenhouse gases other than carbon dioxide. But even accepting these limitations, much of the growth in carbon dioxide emissions from 1980 to 2005

has been in nations or regions that have slow population growth.

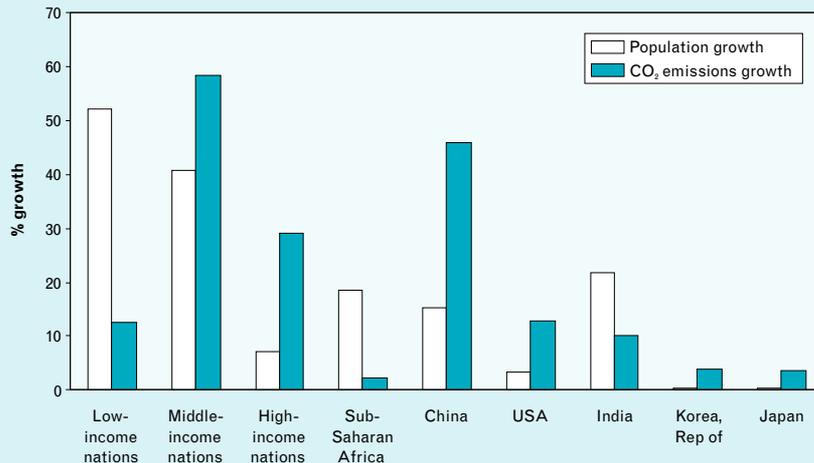
During these 35 years, Sub-Saharan Africa had 18.5 per cent of the world's population growth but its share in the growth of carbon dioxide emissions was just 2.5 per cent. Northern America had 4.0 per cent of the world's population growth but its share in the growth of carbon dioxide emissions was 13.9 per cent. China had 15.3 per cent of the world's population growth and 44.5 per cent of the growth in carbon dioxide emissions.

This actually understates the contributions of high-income nations for two reasons. The first reason was noted above – the fact that emissions from producing goods are allocated to nations where production is located, not to the consumers of those goods. The second is that Northern America and much of Europe already had very high levels of greenhouse gas emissions in 1980. Europe's share in carbon dioxide emission growth over these 35 years was negative – as so much industry closed down or shifted to low- and middle-income nations. If greenhouse gas emissions were allocated to consumers, the contributions of Europe and Northern America to the growth in such emissions over these years would be much higher and that of China much lower.

So does population growth matter?

The two key issues for climate change are first, how to slow, stop and then reduce global emissions and, second, how to build resilience to climate change impacts. The

CONTRIBUTIONS TO THE GLOBAL GROWTH IN CARBON DIOXIDE EMISSIONS AND POPULATION 1980 - 2005



first depends on reducing the greenhouse gas emissions driven by consumption. This has to reduce emissions per person among middle- and upper-income groups and, in effect, demonstrate how a high quality of life can be combined with much lower emissions. It falls to governments in high-income nations to demonstrate how this

tals) to respond to acute illness or injury and disasters. It also includes sexual and reproductive healthcare that incorporates family planning (along with other key healthcare issues, especially for infants and children).

Improved healthcare will help address one of the most intractable failures of

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can be done; without this, why should the successful low- and middle-income nations whose greenhouse gas emissions are rising rapidly agree to act on this?

Adaptation - building resilience to the storms, floods, heatwaves, water supply constraints and other impacts of climate change - depends on good development. The reason so many people in low- and middle-income nations are so at risk from climate change is because they have been failed or bypassed by development. They live in poor quality housing in sites that lack the necessary protective infrastructure and services. A very important part of development and of building people's resilience to the impacts of climate change is good quality, easily available and affordable healthcare. This includes emergency services (ambulances, accessible hospi-

development - the very high rates of infant, child and maternal mortality in low-income and most middle-income nations. This will also help slow population growth. So too will other aspects of development - for instance, good quality schools and provision for water, sanitation and flood protection, more stable livelihoods and better quality housing. Such progress will also greatly reduce the vulnerability of low-income groups to climate change impacts, but will not necessarily reduce greenhouse gas emissions. If the wealthy demonstrate the commitment needed to reduce their emissions, however, the planetary implications of the additional emissions implied by achieving the above are not very large and should be accommodated. ■

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FURTHER INFORMATION

● A longer version of this article was printed in 2009 in the journal *Environment and Urbanization* (volume 21, issue number 2, pages 545-567). This can be downloaded at no charge at <http://eau.sagepub.com/content/vol21/issue2/>.