

## CONSUMPTION DWARFS POPULATION AS MAIN ENVIRONMENTAL THREAT<sup>1</sup>

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It's overconsumption, not population growth, that is the fundamental problem: By almost any measure, a small portion of the world's people — those in the affluent, developed world — use up most of the Earth's resources and produce most of its greenhouse gas emissions. It's the great taboo, I hear many environmentalists say. Population growth is the driving force behind our wrecking of the planet, but we are afraid to discuss it. It sounds like a no-brainer. More people must inevitably be bad for the environment, taking more resources and causing more pollution, driving the planet ever farther beyond its carrying capacity. But hold on. This is a terribly convenient argument — “over-consumers” in rich countries can blame “over-breeders” in distant lands for the state of the planet. But what are the facts?

The world's population quadrupled to six billion people during the 20th century. It is still rising and may reach 9 billion by 2050. Yet for at least the past century, rising per-capita incomes have outstripped the rising head count several times over. And while incomes don't translate precisely into increased resource use and pollution, the correlation is distressingly strong. Moreover, most of the extra consumption has been in rich countries that have long since given up adding substantial numbers to their population.

By almost any measure, a small proportion of the world's people take the majority of the world's resources and produce the majority of its pollution. Take carbon dioxide emissions — a measure of our impact on climate but also a surrogate for fossil fuel consumption. Stephen Pacala, director of the Princeton Environment Institute, calculates that the world's richest half-billion people — that's about 7 percent of the global population — are responsible for 50 percent of the world's carbon dioxide emissions. Meanwhile the poorest 50 percent are responsible for just 7 percent of emissions.

Although overconsumption has a profound effect on greenhouse gas emissions, the impacts of our high standard of living extend beyond turning up the temperature of the planet. For a wider perspective of humanity's effects on the planet's life support systems, the best available measure is the “ecological footprint,” which estimates the area of land required to provide each of us with food, clothing, and other resources, as well as to soak up our pollution. This analysis has its methodological problems, but its comparisons between nations are firm enough to be useful. They show that sustaining the lifestyle of the average American takes 9.5 hectares, while Australians and Canadians require 7.8 and 7.1 hectares respectively; Britons, 5.3 hectares; Germans, 4.2; and the Japanese, 4.9. The world average is 2.7 hectares. China is still below that figure at 2.1, while India and most of Africa (where the majority of future world population growth will take place) are at or below 1.0.

The United States always gets singled out. But for good reason: It is the world's largest consumer. Americans take the greatest share of most of the world's major commodities: corn, coffee, copper, lead, zinc, aluminum, rubber, oil seeds, oil, and natural gas. For many others, Americans are the largest per-capita consumers. In “super-size-me” land, Americans gobble up more than 120 kilograms of meat a year per person, compared to just 6 kilos in India, for

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instance. I do not deny that fast-rising populations can create serious local environmental crises through overgrazing, destructive farming and fishing, and deforestation. My argument here is that viewed at the global scale, it is overconsumption that has been driving humanity's impacts on the planet's vital life-support systems during at least the past century. But what of the future?

We cannot be sure how the global economic downturn will play out. But let us assume that Jeffrey Sachs, in his book *Common Wealth*, is right to predict a 600 percent increase in global economic output by 2050. Most projections put world population then at no more than 40 percent above today's level, so its contribution to future growth in economic activity will be small. Of course, economic activity is not the same as ecological impact. So let's go back to carbon dioxide emissions. Virtually all of the extra 2 billion or so people expected on this planet in the coming 40 years will be in the poor half of the world. They will raise the population of the poor world from approaching 3.5 billion to about 5.5 billion, making them the poor two-thirds.

Sounds nasty, but based on Pacala's calculations — and if we assume for the purposes of the argument that per-capita emissions in every country stay roughly the same as today — those extra two billion people would raise the share of emissions contributed by the poor world from 7 percent to 11 percent. Look at it another way. Just five countries are likely to produce most of the world's population growth in the coming decades: India, China, Pakistan, Nigeria, and Ethiopia. The carbon emissions of one American today are equivalent to those of around four Chinese, 20 Indians, 30 Pakistanis, 40 Nigerians, or 250 Ethiopians.

Even if we could today achieve zero population growth, that would barely touch the climate problem — where we need to cut emissions by 50 to 80 percent by mid-century. Given existing income inequalities, it is inescapable that overconsumption by the rich few is the key problem, rather than overpopulation of the poor many. But, you ask, what about future generations? All those big families in Africa begetting yet-bigger families. They may not consume much today, but they soon will.

Well, first let's be clear about the scale of the difference involved. A woman in rural Ethiopia can have ten children and her family will still do less damage, and consume fewer resources, than the family of the average soccer mom in Minnesota or Munich. In the unlikely event that her ten children live to adulthood and have ten children of their own, the entire clan of more than a hundred will still be emitting less carbon dioxide than you or I.

And second, it won't happen. Wherever most kids survive to adulthood, women stop having so many. That is the main reason why the number of children born to an average woman around the world has been in decline for half a century now. After peaking at between 5 and 6 per woman, it is now down to 2.6. This is getting close to the "replacement fertility level" which, after allowing for a natural excess of boys born and women who don't reach adulthood, is about 2.3. The UN expects global fertility to fall to 1.85 children per woman by mid-century. While a demographic "bulge" of women of child-bearing age keeps the world's population rising for now, continuing declines in fertility will cause the world's population to stabilize by mid-century and then probably to begin falling. Far from ballooning, each generation will be smaller than the last. So the ecological footprint of future generations could diminish. That means we can have a shot at estimating the long-term impact of children from different countries down the generations.

The best analysis of this phenomenon I have seen is by Paul Murtaugh, a statistician at Oregon State University. He recently calculated the climatic "intergenerational legacy" of today's children. He assumed current per-capita emissions and UN fertility projections. He found that

an extra child in the United States today will, down the generations, produce an eventual carbon footprint seven times that of an extra Chinese child, 46 times that of a Pakistan child, 55 times that of an Indian child, and 86 times that of a Nigerian child. Of course those assumptions may not pan out. I have some confidence in the population projections, but per-capita emissions of carbon dioxide will likely rise in poor countries for some time yet, even in optimistic scenarios. But that is an issue of consumption, not population.

In any event, it strikes me as the height of hubris to downgrade the culpability of the rich world's environmental footprint because generations of poor people not yet born might one day get to be as rich and destructive as us. Overpopulation is not driving environmental destruction at the global level; overconsumption is. Every time we talk about too many babies in Africa or India, we are denying that simple fact.

At root this is an ethical issue. Back in 1974, the famous environmental scientist Garret Hardin proposed something he called "lifeboat ethics". In the modern, resource-constrained world, he said, "each rich nation can be seen as a lifeboat full of comparatively rich people. In the ocean outside each lifeboat swim the poor of the world, who would like to get in." But there were, he said, not enough places to go around. If any were let on board, there would be chaos and all would drown. The people in the lifeboat had a duty to their species to be selfish – to keep the poor out.

Hardin's metaphor had a certain ruthless logic. What he omitted to mention was that each of the people in the lifeboat was occupying ten places, whereas the people in the water only wanted one each. I think that changes the argument somewhat.