

Rising Emissions, Growing Numbers of People: Demography and Climate Change

Reaching inland 35 miles from the Myanmar coast, flooding from Tropical Cyclone Nargis in May of 2008 caused devastation to a landscape dotted with homes, community buildings, and rice fields. Excessive winds of over 120 mph with an accompanying tidal wave 12 feet high resulted in over 60,000 people reported dead or missing in the aftermath of the disaster. The catastrophe recalls the destruction that occurred along the Gulf Coast of the United States after Hurricane Katrina hit land in 2005. Three years later, homes still stand dilapidated and abandoned by owners who left their disrupted lives behind.

Although global warming does not create hurricanes, it does make them stronger. As the ocean becomes warmer, tropical storms can pick up more energy from the ocean, making them more destructive when they hit land.

The consequences of global warming reach far beyond Myanmar and the Gulf Coast. In East Africa a severe drought has left millions hungry and starving. Rivers that once nourished the land and its people are no longer flowing. The Intergovernmental Panel on Climate Change (IPCC), drawing on recent projections, designated North Africa, West Africa, and Southern Africa as regions particularly vulnerable to flooding from sea level rise. Currently, 40% of the people living in West Africa are settled along the coast.

Emissions in the U.S.

In the United States, annual per capita carbon emissions have been static at around 5.43 tons for decades. Most of these emissions come from burning fossil fuels to generate electricity and to power cars and other vehicles. Most African countries have per capita emissions below 0.7 tons. Many industrialized countries emit less than 2.0 tons per capita.



Coal smoke billows from a mountain train in India. Credit: Joydeep Mukherjee, Courtesy of Photoshare.

Yet the U.S. is the only major industrialized country to reject the 1997 Kyoto Protocol. The agreement calls for mandatory cuts in greenhouse gases. Economists worry that cutting carbon emissions could further endanger the economic stability of the United States, already reeling from the credit and real estate collapse.

The Population Connection

There is clear evidence that the rise in atmospheric carbon levels follows growth in population. The more people there are, the more we consume and the more our consumption negatively affects the environment.

Global warming is primarily caused by increased atmospheric levels of carbon and other greenhouse gases, which are released from burning fossil fuels. The

world's population is an important determining factor in the quantity of fossil fuels burnt each year. More people require more cars, more houses, and more public buildings, which require heating, cooling, and electricity.

In only 40 years, the world's population has doubled from 3.5 billion to over 6.8 billion. The rise in greenhouse gas emissions during that time followed the same trend line. Frederick Meyerson of the University of Rhode Island wrote, "Per capita greenhouse gas emissions are roughly the same as they were in 1970 on a global scale and also in the United States."

Methane, a much more potent greenhouse gas than carbon (but less prevalent), is released from rice paddies, livestock, and landfills. Increased rice and livestock production grow in response to more hungry mouths to feed. Landfills are larger and more prevalent as the number of people producing waste grows.

President Obama has pledged to implement a cap-and-trade program that will cut greenhouse gas emissions 80% by 2050. This goal will be much easier to achieve if the U.S. population tops out at 350 million Americans, rather than 450 million (the range in projections for 2050, based on different future fertility rates).

What's at Stake

In a *Vanity Fair* article published in 2006, former Vice President Al Gore said, "We are recklessly dumping so much carbon dioxide into the Earth's atmosphere that we have literally changed the relationship between the Earth and the Sun, altering the balance of energy between our planet and the rest of the universe..."

Let's face the facts: we are in the middle of a dangerous spiral. According to scientific experts, average U.S. temperatures could rise another 3 to 9 degrees by the end of the century. That may not

sound like much, but a 9-degree change in temperature could cause a lot of damage to the world that we know today.

If this trend continues, we will not only be experiencing hotter times. We could also stand to face catastrophic and irreversible consequences, many of which are already being felt:

- Higher temperatures will worsen air pollution.
- Sea levels will rise, flooding coastal areas around the world.
- Heat waves will be more frequent and intense.
- More droughts and wildfires will occur in some regions, including the American West.
- More heavy rains, flooding, and other extreme weather events will occur.
- Species such as the polar bear, recently categorized as threatened, may become extinct as their habitat melts and they starve to death.

What Can Be Done

Economist Jeffrey Sachs wrote in *Common Wealth*, “Man-made climate change is not a sin of humanity, or even a result we could have easily predicted and avoided; it is, rather, an accident of chemistry, specifically, the accident that carbon dioxide has greenhouse climate effects. This accident is so novel and has come upon us so recently that global society has been caught largely unawares as to how it should respond.” There is much debate about which technologies will reap the largest benefits. There is also the problem of cost.

One easy and cost-effective way to reduce emissions is to slow the rate of population growth. There are more than 200 million women around the world who want to delay or end childbearing but have no access to family planning. Contraception is inexpensive and decades of experience allows programs to deliver contraception safely and efficiently. But without adequate funding, programs stall and we lose precious time.

Population stabilization is by no means a panacea for mitigating climate change. According to Brian O'Neill,

Scientist at the National Center for Atmospheric Research, population stabilization could provide between one and two stabilization “wedges.” The Carbon Mitigation Initiative at Princeton University developed the wedge concept to articulate which technologies and other actions could bring about a stabilization of greenhouse gas emissions at eight billion tons per year. Stabilization would require eight “wedges” like making cars more fuel-efficient, switching to wind and solar power, and planting trees.

How You Can Help:

- Consider the environment when planning your family.
- Support \$1 billion for international family planning so that the United States can fulfill its fair share of the total cost to meet worldwide unmet need.
- Oppose abstinence-only programs in schools. The United States has the highest teen pregnancy rate in the industrialized world.

A Comprehensive Approach

“Global warming is too big a problem to be solved by energy experts alone. It's about people. It's about how many of us there are and how we choose to live our modern lives,” says Population Connection President, John Seager. “It's time to open a second front in the battle against global warming by stressing the need for population stabilization—sooner rather than later.”

Facts & Figures

- The United States accounts for just 4% of the world's population, yet produces 25% of greenhouse gas emissions.
- All of the 10 hottest years on record have occurred since 1990.
- The Arctic's polar ice cap is melting at a rate of 9% per decade.
- The severity of hurricanes has increased over the last 35 years along with ocean temperature.

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Population Connection is America's largest grassroots group advocating for progressive action to stabilize world population at a level that can be sustained by the Earth's resources.