**Does Population Growth Impact Climate Change?**

World population numbers in rapidly developing countries must stabilize if efforts to curb emissions aren't to be erased by sheer numbers of more people. Many experts believe the answer to curbing population growth lies in: reducing poverty and infant mortality; increasing women's and girls' access to health care, education and economic opportunity; and educating women about birth control and ensuring access to voluntary family planning services. *Image: Jake Brewer*

[**Population and Sustainability: Can We Avoid Limiting the Number of People?**](http://www.scientificamerican.com/article.cfm?id=population-and-sustainability)

**To what extent does human population growth impact** [**global warming**](http://www.scientificamerican.com/topic.cfm?id=global-warming-and-climate-change)**, and what can be done about it?**   
*-- Larry LeDoux, Honolulu, HI*

No doubt human population growth is a major contributor to global warming, given that humans use [fossil fuels](http://www.scientificamerican.com/topic.cfm?id=fossil-fuels) to power their increasingly mechanized lifestyles. More people means more demand for oil, gas, coal and other fuels mined or drilled from below the Earth’s surface that, when burned, spew enough carbon dioxide (CO2) into the atmosphere to trap warm air inside like a greenhouse.

According to the United Nations Population Fund, human population grew from 1.6 billion to 6.1 billion people during the course of the 20th century. (Think about it: It took all of time for population to reach 1.6 billion; then it shot to 6.1 billion over just 100 years.) During that time emissions of CO2, the leading greenhouse gas, grew 12-fold. And with worldwide population expected to surpass nine billion over the next 50 years, environmentalists and others are worried about the ability of the planet to withstand the added load of greenhouse gases entering the atmosphere and wreaking havoc on ecosystems down below.

Developed countries consume the lion’s share of fossil fuels. The United States, for example, contains just five percent of world population, yet contributes a quarter of total CO2 output. But while population growth is stagnant or dropping in most developed countries (except for the U.S., due to immigration), it is rising rapidly in quickly industrializing developing nations. According to the United Nations Population Fund, fast-growing developing countries (like China and India) will contribute more than half of global CO2 emissions by 2050, leading some to wonder if all of the efforts being made to curb U.S. emissions will be erased by other countries’ adoption of our long held over-consumptive ways.

“Population, global warming and consumption patterns are inextricably linked in their collective global environmental impact,” reports the Global Population and Environment Program at the non-profit Sierra Club. “As developing countries’ contribution to global emissions grows, population size and growth rates will become significant factors in magnifying the impacts of global warming.”

According to the Worldwatch Institute, a nonprofit environmental think tank, the overriding challenges facing our global civilization are to curtail climate change and slow population growth. *“Success on these two fronts would make other challenges, such as reversing the deforestation of Earth, stabilizing* [*water*](http://www.scientificamerican.com/topic.cfm?id=water) *tables, and protecting plant and animal diversity, much more manageable,” reports the group. “If we cannot stabilize climate and we cannot stabilize population, there is not an ecosystem on Earth that we can save.”*

Many population experts believe the answer lies in improving the health of women and children in developing nations. By reducing poverty and infant mortality, increasing women’s and girls’ access to basic human rights (health care, education, economic opportunity), educating women about birth control options and ensuring access to voluntary family planning services, women will choose to limit family size.

**CONTACTS**: United Nations Population Fund, www.unfpa.org; Sierra Club’s Global Population and Environment Program, www.sierraclub.org/population; World watch Institute, [www.worldwatch.org](http://www.worldwatch.org).