

# Experts assess the impact of climate change on public health

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Climate change is already having a noticeable impact on the environment and global health. Around the world extreme weather events, increased temperatures, drought, and rising sea levels are all adversely affecting our ability to grow food, access clean water, and work safely outdoors. Soon in some areas, the transformation will be so drastic and devastating that native populations will be displaced and forced to find new homes as environmental refugees. In a review published in the *Annals of Global Health*, doctors warn of the impending public health crisis brought on by climate change and call for action to help prepare the world for what is ahead.

As we begin to experience an unprecedented shift in temperature, we are starting to see the immense impact climate change will have on people around the world, especially those living in low-income countries. Bearing the brunt of the damage caused by climate change, low-income nations are especially susceptible because their economies often rely solely on agriculture and most do not possess the resources to ease the risks posed by climate events.

Low-income countries contribute just a tiny fraction of greenhouse gases (GHG), yet, they stand to lose the most if something is not done to curb emissions. In 2004, the United States, Canada, and Australia approached 6 metric tons (mt) of GHG per capita, while per-capita GHG emissions in low-income countries was only 0.6 mt overall.

"As global temperature increases, rich countries' economies continue to

prosper, but the economic growth of [poor countries](#) is seriously impaired," explained co-author Barry S. Levy, MD, MPH, Adjunct Professor, Department of Public Health and Community Medicine, Tufts University School of Medicine. "The consequences for economic growth in poor countries will be substantial if we continue on a 'business-as-usual' path of increasing carbon dioxide concentrations and [rapid climate change](#), with poor countries' mean annual growth rate decreasing from 3.2% to 2.6%."

The adverse health effects of climate change will be broad and will tax public health resources globally. Vector-borne diseases, foodborne and waterborne illnesses, malnutrition, respiratory and allergic disorders, heat-related disorders, collective violence, and mental health problems will all likely increase due to climate change. Already vulnerable populations including the poor, minority groups, women, children, and older people will face the greatest challenges brought on by climate-caused illness. Malaria, Rift Valley fever, tick-borne encephalitis, and West Nile virus disease are spreading due to climate change.

Along with minority populations and poor people, women are more vulnerable to the health consequences of climate change. Co-author investigator Jonathan A. Patz, MD, MPH, Director of the Global Health Institute at the University of Wisconsin—Madison explained, "There are many ways in which climate change disproportionately affects women, including and especially adolescent girls. In low-income countries, women and adolescent girls generally assume primary responsibility for gathering water, food, and fuel for their households. Climate change-induced droughts make this work much more difficult."

Because the challenges presented by climate change disproportionately affect already vulnerable groups, investigators warn that caution must be exercised when trying to manage the effects of climate change.

"International organizations and governments at the national,

state/provincial, and local levels should ensure that human rights are considered in developing and implementing mitigation and adaptation measures," noted Dr. Levy. "Nongovernmental and humanitarian organizations need to hold governments accountable in protecting and promoting these human rights."

Positive progress on this front emerged last December in Paris from the UN Conference of the Parties (COP21) on climate change. World leaders gathered there agreed to establish a \$100 billion fund to pay for both energy development as well as damages already incurred by poorer nations. "The agreement, which included the concept of 'damages,' clearly shows a recognition of the imbalance between industrialized nations that have caused climate change and those countries already bearing the brunt of extreme weather impacts," said Dr. Patz, who attended the Paris meeting.

Now is the time to address these issues and determine proper plans of action. In this issue of *Annals of Global Health*, "Climate Change, Global Health, and Human Rights," guest editor Holly G. Atkinson, MD, Program Director of Human Rights, Arnhold Institute for Global Health at the Icahn School of Medicine at Mount Sinai, explained, "In many places around the globe where upheavals are occurring, public health systems have broken down. As a consequence, for example, we have witnessed the resurgence of polio—an ancient disease almost eradicated in 2012. Despite the evidence, many people remain substantially uninformed about the link between climate change and [global health](#)."

Public health problems resulting from climate change continue to increase, and yet, we are slow to react. With the most vulnerable populations among us set to sustain the most damage, this review in the *Annals of Global Health* urges swift and decisive action to protect poor people, women, children, older people, and other vulnerable populations from the health consequences of climate change now and in the future.

"The global climate crisis threatens most people and their human rights," concluded Dr. Patz. "The adverse consequences of climate change will worsen. Addressing [climate change](#) is a health and human rights priority, and action cannot be delayed. Mitigation and adaptation measures must be equitable, respecting, protecting and promoting human rights."

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