

An Updated Look at Population and the Environment:

Climate Change Vulnerability



The global population growth rate peaked in the 1960s, sparking concerns about the challenges posed by such growth for natural resources and the environment. While the rate of growth has slowed, the world's population has since more than doubled in size. World population is projected to grow through most of the 21st century, though with significant diversity in population trends: The populations of some countries today are young on average and growing rapidly, those of others are older and growing more slowly, and those of others still have peaked and are now slowly decreasing in size.

Shifts in patterns of production, consumption, and technological change continue to mediate the impact of human activity on the planet. Does population growth matter? And if so, how? This series looks at how today's population trends interact with environmental and natural resource challenges, including often overlooked insights on how these trends relate to planetary boundaries, gender equity, and *reproductive agency*—the capacity of individuals and couples to make their own decisions about conceiving and bearing children.

HOW DO POPULATION TRENDS INFLUENCE CLIMATE CHANGE VULNERABILITY AND ADAPTATION?

In some of the countries most vulnerable to human-caused climate change, population is growing fast, undermining resilience and adaptation.

Extreme weather events related to climate change have cost the global economy more than **\$2 trillion** over the past decade.¹



Between **2030 and 2050**, climate change is expected to cause **250,000** additional deaths per year from diarrhea, malaria, undernutrition, and heat stress.²



In the 80 most climate-vulnerable countries, the average population growth rate is 1.8%, about twice the global rate of growth.³ Such high rates of growth interact with other factors to intensify countries' vulnerability to climate change.



RISK EXPOSURE
1 BILLION

The estimated number of people who live within 10 kilometers of the coast, in a world where coastal populations are growing significantly faster than inland populations.⁴



FOOD INSECURITY
20%

The average share of the population experiencing *severe food insecurity*—a condition in which people have likely run out of food, experienced hunger and, at the most extreme, gone for days without eating—in the 80 most climate-vulnerable countries.⁵



DISASTER PREPAREDNESS
1/3

The share of the world's population—mostly in least-developed countries and small island developing states—not covered by early warning systems that enable communities to anticipate storms, heatwaves, floods, and droughts.⁶

Population growth trends are often overlooked in climate change adaptation plans. A review of plans prepared by **164** countries found that about **one-third** either associated population growth with a negative effect and/or identified it as a trend affecting societal needs. Only **seven** included strategies related to population growth, and none specified implementation measures.⁷





CLIMATE CHANGE RESILIENCE, GENDER EQUITY, AND REPRODUCTIVE AGENCY ARE LINKED

Evidence indicates that the impacts of climate change disproportionately affect women and girls.⁸ In many regions, women and girls bear primary responsibility for securing food, water, and fuel for their households, all of which are sensitive to changes in climate. Climate change impacts have implications for how women and girls spend their time, the opportunities they forego, and the risks they encounter.

Reproductive agency is critical to advancing gender equity while responding to climate change challenges. Access to family planning and reproductive health services fosters gender equity by empowering women, improving their health, and freeing them to pursue education, employment, and other life opportunities.⁹ A key component of reproductive agency is the ability to achieve one’s desired family size and avoid unintended pregnancy, and yet nearly half of all pregnancies worldwide are unintended—a trend that the United Nations Population Fund has called a “neglected crisis.”¹⁰

The ability to plan and space births equips individuals and families to navigate and survive

shocks and stressors in their lives, including the impacts of climate change. Over the long term, it will also slow population growth by enabling people to avoid unintended pregnancy and achieve their desired timing of births and family size.

Furthermore, the impacts of climate change can undermine people’s sexual and reproductive health and their ability to exercise their rights. For example, extreme weather events can damage health facilities, infrastructure, and medical supply chains, disrupting access to health services. Climate shocks and stresses can reduce household resources available for health care and increase gender-based violence, including early marriage, sexual violence, and sex trafficking.¹¹

National climate change adaptation plans seldom assess demographic factors in preparing for future climate change vulnerability or incorporate interventions, such as strengthening access to family planning and reproductive health services, that would build people’s resilience and adaptive capacity while mitigating population-related challenges.

FROM THE FIELD: CLIMATE CHANGE, WATER SUPPLY, AND RISING DEMAND IN THE UNITED STATES

Longer, hotter dry spells create greater uncertainty about future water supplies across the United States, including in areas experiencing population growth, like the Colorado River Basin. The population of Aurora, Colorado, for example, grew 40% between 2000 and 2020. Water conservation measures that were rolled out during that period, such as turf bans and other efficiency measures, resulted in reductions in both per capita and total water use. But planners are concerned that wringing out further efficiencies will prove increasingly difficult as population grows. “When we look at our demand projections going forward, we have a gap that we need to fill, right?” Aurora Water assistant general manager Alex Davis stated recently. “We have a projected need that we can’t meet today for what we expect the population to be in 2060, and so we have to acquire more water resources and do more supply projects in order to meet that gap.”¹²

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Drought conditions causing low levels in the Colorado River. Photo courtesy of FreePik.

FROM THE FIELD: INTEGRATING GENDER EQUITY AND REPRODUCTIVE HEALTH ACCESS IN UGANDA'S CLIMATE POLICIES



A small holder farmer in Uganda demonstrates the organic fertilizer used in her kitchen garden as part of the PHE model practices. Photo courtesy of Regenerate Africa.

Uganda ranks as one of the most climate-vulnerable countries in the world due to increasing frequency and severity of extreme weather events and heavy reliance on climate-sensitive sectors such as agriculture, forests, and fisheries. Women and girls, who often experience a disproportionate burden of the impacts of climate change, have limited opportunities to go to school, enter the workforce, and exercise autonomy in multiple aspects of their lives, including their reproductive lives. Child marriage, limited access to family planning and reproductive health services, and high rates of unintended pregnancy underpin high birth rates that drive rapid population growth (currently 2.8%, which if unchanged, would result in population doubling in 25 years), further exacerbating climate change vulnerability.

Recognizing these linked challenges, advocates have successfully lobbied for actions to promote gender equity and reproductive health in key climate policies, including Uganda's Nationally Determined Contribution and the Health National Adaptation Plan. "Across Uganda, families and communities experience intertwined and interconnected challenges of rapid population growth, gender inequity, and climate change vulnerability," said Charles Kabiswa, executive director of Regenerate Africa, a Kampala-based NGO. "In this context, multisectoral strategies offer hope for long-term collective benefit."¹³

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UNDERSTANDING POPULATION TRENDS IS VITAL TO UNDERSTANDING OUR WORLD AND PLANNING FOR THE FUTURE

The future path of population change matters for climate change resilience. That path is not fixed—it responds to policies, programs, and investments.

A population lens invites deeper inquiry into drivers of population growth that are linked to inequity, including barriers that women and girls experience that limit their rights and opportunities. Multifaceted climate strategies that incorporate

interventions to remove such barriers hold promise for building the resilience of people today and lay groundwork for sustained resilience in the future.

In many ways, embracing the shift toward lower fertility—a shift based entirely on the reproductive choices of individuals and couples—presents opportunities for both people and the planet.

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Contact

The Population Institute
info@populationinstitute.org



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