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## Safe Water in Peril: Addressing the Effects of Global Warming on Safe Drinking Water and Sanitation

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More than one billion people lack access to safe drinking water, and more than two billion people live without improved sanitation. While these dire conditions already pose the greatest threat to environmental health around the world, global warming is set to make matters even worse. More frequent and more serious droughts and floods will increase water shortages and cause more widespread water contamination and sanitation challenges. To avoid an outright global water catastrophe, local, national, and global leaders must urgently pursue a two-part strategy of reducing pollution to minimize further climate change while preparing vulnerable communities to deal with the changes in climate that are already occurring or are unavoidable.

### Drought and Floods Will Exacerbate Global Drinking Water and Sanitation Crisis

The most recent Intergovernmental Panel on Climate Change (IPCC) report sounded the alarm about unprecedented, rapid changes in our global climate. Scientists predict that nearly one-third of the planet's land surface will suffer from extreme drought by the end of the century—and one-fifth of the world population could face severe flooding by 2080.

Droughts reduce the quantity of water available and can also affect water quality, turning freshwater excessively salty. Also, decreasing water flows can reduce the effectiveness of wastewater treatment systems, leading to more water contamination. Floods can severely affect water quality by flushing large amounts of toxic runoff into drinking water sources, as well as by damaging water and wastewater infrastructure.



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### The Most Vulnerable Will Be Hit Hardest by the Water Crisis

Although developed countries are most responsible for causing global warming, it is the poor in developing countries who face the greatest risks from a warmer climate. Without bold policy action from the international community, vulnerable nations in Africa, Asia, and Latin America are likely to face the most devastating shocks from global warming.

For example, although Sub-Saharan Africa currently contributes little to the causes of climate change (producing less than four percent of the world's greenhouse gases<sup>1</sup>) the IPCC predicts that by 2020, between 75 and 250 million people in Africa will suffer increased water stress due to climate change. In East Africa, snow is already disappearing from mountains like Mt. Kenya and Mt. Kilimanjaro, affecting the local communities who depend on the rivers and streams fed by these mountain snows.

In heavily-populated Asia, up to one billion people could face reduced access to water and more extreme weather events such as flooding and droughts, even with a small rise in temperature. Already, Chinese scientists have blamed global warming for reducing the water flow in China's major rivers to historic lows. Low river flows last summer led to severe drinking water shortages that afflicted 18 million people.

In Latin America and the Caribbean, global warming is expected to change precipitation patterns, resulting in too little water in some areas and too much in others. Increasingly severe and frequent storms will lead to more flooding and damaged infrastructure, particularly along the coastal areas, where 60 of the region's 77 largest cities are situated.

### The Need for "Climate-Resistant" Development

The world needs immediate action to curb emissions of greenhouse gases to prevent further warming. At the same time, some communities need to adapt to climate changes that are already occurring. Too many international development

projects, including water projects aimed at providing access to water and sanitation, are currently undertaken without considering the long-term influence of climate change.<sup>2</sup> An estimated 20 to 40 percent of the money spent on international development aid could ultimately fail to achieve its objectives due to the effects of a changing climate.

We must ensure that future economic development is "climate-resistant," so that countries will be able to move forward with their development goals while minimizing the threat of catastrophic setbacks. Recent studies have shown that spending one dollar on adaptations in preparation for climate related disasters would save seven dollars in disaster recovery costs.<sup>3</sup>

### A Global Challenge Requires Global Solutions—and U.S. Leadership

For many of the five billion people living in the developing world, water scarcity is already a frightening reality—and getting worse. To avert long-term climate disaster, the countries of the world must commit to meaningful reductions in their greenhouse gas emissions, such that global emissions in 2050 are 80 percent below current annual emissions. In the United States, Congress needs to ensure that legislative efforts to address global warming will also include measures aimed at helping the most vulnerable communities in developing countries adapt to the changing climate.

Promising adaptation measures should build on recent successful efforts to protect community water supplies from climate change and provide access to sanitation that can withstand floods and droughts. These measures include the use of ecological sanitation, also known as waterless toilets, rainwater harvesting for future use, and local community construction of sand dam wells to ensure drinking water supplies in dry seasons.

NRDC urgently calls on countries to work together to invest in "climate-resistant" development and adaptive capacity that protects development gains to date—and facilitates further progress toward securing safe drinking water and sanitation for all.

#### Poverty: An Obstacle to Addressing the Water Crisis

Two thirds of the more than one billion people without access to an improved water source live on less than \$2 a day—and one half of that number live on less than \$1 a day. These hundreds of millions of impoverished people have little ability to pay for a connection to water service.

1 IPCC, Summary for Policymakers, *Climate Change 2007: Impacts, Adaptation, and Vulnerability*, p. 8, <http://www.ipcc.ch>.

2 Oxfam, *Adapting to Climate Change: What's needed in poor countries, and who should pay*, p. 39, [http://www.oxfam.org/en/files/bp104\\_climate\\_change\\_0705.pdf/download](http://www.oxfam.org/en/files/bp104_climate_change_0705.pdf/download).

3 Simms, A. and H. Reid (2005), *Africa – Up in smoke? The second report from the Working Group on Climate Change and Development*, International Institute for Environment and Development, London, UK.