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# Background Paper

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## Hunger and Climate Change: What's the Connection?

The world will not be able to end hunger without confronting climate change and its threat to people who are hungry and marginalized. But before we can end chronic hunger, climate change may first quickly undo the steady global progress against hunger and extreme poverty of the past several decades. This issue is central for an organization such as Bread for the World whose mission is to end hunger.

Until fairly recently, people in the continental United States were not inclined to believe the warnings about climate change. What the scientists and environmentalists were saying about irreversible damage to the planet sounded highly unlikely to many Americans.

Meanwhile, residents of many other parts of the world were becoming only too certain that Earth's climate was changing—because they were suffering the effects. As far back as the 1980s, for example, western Alaska had more and more frequent hurricane-force storm surges. Why? People in small, coastal communities noticed that the annual sea ice cover that protects the coast during storm season was late in forming. This buffer simply wasn't there until several weeks later than it would normally have been.

Extreme weather events have become more common. There have been droughts in many places, floods in others. In still other places, people weren't sure at first what was changing, but there were threatening situations such as never-before-seen insects attacking their crops.

Thus, how “new” climate change seems to be depends on where one lives. It is apparent now that it affects the entire globe. In the United States, public attention has been seized by disasters such as Superstorm Sandy and the ongoing drought in the West. But it is small, subsistence farmers in developing countries and others in low-income rural areas who are bearing the brunt of climate change. These groups are already living precarious lives for a number of reasons: They are extremely dependent on the weather for their crops, they don't have the government and private safety nets like



EC/ECHO/Nicolas Le Guen

**Two months after floods in Nigeria in 2012, water levels continued to be abnormally high in certain places. It hampered people's livelihoods like this shepherd who wasn't used to having to swim to herd his cattle.**

insurance if disaster strikes, and many live on unsafe land areas, to name a few.

### The Time Is Now

Pope Francis, President Barack Obama, U.N. Secretary-General Ban Ki-moon, and key business leaders are among the world leaders who now speak regularly about climate change. They emphasize the impact on low-income people in developing countries. The poorest 80 countries in the world are essentially bystanders to climate change, not contributors.

“In the case of climate change, perhaps for the first time in the world's recorded history, we're beginning to witness an awakening not just in one country or within one group of people, but in nearly every corner of the Earth,” wrote jour-

analyst Jeff Nesbit in his preview of Pope Francis' upcoming encyclical (letter to bishops) on climate change. "That sort of all-across-the-world public awareness around a threat ... has never truly happened before."

Global concern about climate change may indeed be at unprecedented levels—just as the idea of permanent, widespread damage to the planet is unprecedented. Citizens can and should urge their leaders to step up their response—both to the threat and to the opportunities to take effective action. There is still time to prevent worst-case scenarios. Ominously, an absolutely catastrophic global temperature increase of 4 degrees Celsius is projected by the end of this century if present trends continue.

This is why the major opportunities for world leaders to take major action this year must not be missed. These are:

- Pope Francis' encyclical on climate change will be released in June.
- In July, nations will gather in Ethiopia for the third International Conference on Financing for Development.
- In September, the U.N. General Assembly will meet to adopt Sustainable Development Goals to succeed the Millennium Development Goals.
- In December, nations will negotiate a new global climate agreement at a summit in Paris. Governments are planning in advance, as the World Bank reports: "All eyes are on major economies as they prepare their Intended National Determined Contributions for Paris ... We are seeing action at all levels as the risks become increasingly clear to governments and to businesses."

In March 2015, the U.S. government released a plan to cut greenhouse gas emissions over the next decade by up to 28 percent from their 2005 levels. This is the basis of the U.S. "intended contributions" for the December climate change summit. The administration has said that climate change brings water and food shortages, more severe humanitarian crises, increasing instability, and soon, "climate refugees" forced out of their homes. Climate change threatens U.S. national security and must be a top priority for the federal government.

### Important Voices: Faith Leaders

Caring for other people and for the Earth are core values of most faiths. Pope Francis of the Roman Catholic Church is probably the most prominent Christian leader on the issue because he is releasing guidance for the world's approximately 1 billion Roman Catholics on climate change. However, many other faith leaders have also been deeply engaged in climate-change issues, supporting those who have been harmed and urging others to do likewise and to reduce their carbon footprints.

Christians are called to love their neighbors and to care for the poorest and most vulnerable people. Accordingly, the final draft of Francis' encyclical, not yet formally released at this writing, points to what is required of Roman Catholics when it comes to climate change:

"Widening inequalities of wealth and income, the worldwide disruption of the physical climate system, and the loss of millions of species that sustain life are the grossest manifestations of unsustainability. There is still time to mitigate unmanageable climate changes and repair ecosystem damages, provided we reorient our attitude toward nature and, thereby, toward ourselves.

"Climate change is a global problem whose solution will depend on our stepping beyond national affiliations and coming together for the common good. Such transformational changes in attitudes would help foster the necessary institutional reforms and technological innovations ... The Catholic Church, working with the leadership of other religions, can now take a decisive role by mobilizing public opinion and public funds to meet the energy needs of the poorest 3 billion people, thus allowing them to prepare for the challenges of unavoidable climate and eco-system changes."



Stock photo

Changing climate patterns will bring more droughts to farming regions of the world. This means that growing food will be harder, and, in turn, people's very survival will be at stake.



## Important Voices: People Living with Climate Change

In the fight against climate change, it is impossible to overstate the importance of listening to and exchanging ideas with people who live with it every day.

A conference in Dublin, “Hunger, Nutrition, Climate Justice 2013,” brought about 100 smallholder farmers and vulnerable people living on the frontlines of climate change together with food security and agriculture researchers. They shared their experiences of farming and presented solutions they have been developing.

“We want to ensure that our future policy approaches are firmly rooted in the reality of lives and in objective evidence of what has worked and what has not,” wrote conference organizers. These included Ertharin Cousin, executive director of the World Food Program; Frank Rijsberman, CEO of the Consultative Group for International Agricultural Research (CGIAR) Consortium; Irish Deputy Prime Minister Eamon Gilmore; and Mary Robinson, president of the Mary Robinson Foundation for Climate Justice.

“Our global challenge is to determine how we can assist those who are most at risk: not by imposing solutions from above, but by coupling farmers’ traditional knowledge, practice, and expertise with scientific innovations to reduce hunger, improve nutrition, and help them adapt to climate change,” they concluded.

Women are particularly vulnerable to the effects of climate change. They also have valuable knowledge because they are responsible for a significant amount of farming in addition to fetching water and firewood, cooking, and child care. Yet efforts to provide farmers with information on how to adapt to climate change often overlook women, partly because outreach is conducted by male agricultural extension agents. As with all human development issues, climate change must be seen through a gender lens.

People living in climate extremes are a huge and varied group. But many are poor and marginalized to begin with—and then they become more and more affected by climate change as it accelerates. Just one example is people in some Alaska communities, particularly Native Alaskan communities. Rural Alaska has high rates of poverty. Many residents lack things that other Americans take for granted; for example, only 78 percent have indoor plumbing. That’s the same as the 1959 rate in the continental United States.

Climate change is occurring two to three times as quickly in the Arctic regions as in most other parts of the planet and has devastated large areas. Several Alaskan towns have been

seeking government help in relocating their entire populations for as long as 10 years.

Even climate change impacts that are “less severe,” at least by comparison, usually affect low-income people more than others. In Los Angeles, for example, many poorer families were already using significantly less water per person than the average household when mandatory water conservation measures went into effect. This was mainly because of cost. As water becomes even more scarce and expensive, these families have fewer “less essential” household water uses to cut back on, yet they will be able to afford less water than before.

California’s state government has approved funds for emergency drinking water supplies. “As we enter a fourth year of severe drought, more communities are likely to face difficulties with their water supplies and delivering safe drinking water,” said Darrin Polhemus of the State Water Board. “[The government will] streamline the process of identifying communities with the most immediate need and who don’t have the necessary resources to respond to their situation.”

**“Climate change is a global problem whose solution will depend on our stepping beyond national affiliations and coming together for the common good.”**

— Pope Francis

## Important Voices: Scientists and Farmers

For years, climate scientists have had a single focus: climate change. They track and analyze what is happening and project what will happen under various scenarios—essentially, if the global community does enough, does less, or does nothing.

The Climate Change 2014 Synthesis Report of the Intergovernmental Panel on Climate Change (IPCC) warns: “Continued emission of greenhouse gases will cause further warming and long-lasting changes in all components of the climate system, increasing the likelihood of severe, pervasive and irreversible impacts for people and ecosystems. Limiting climate change would require substantial and sustained reductions in greenhouse gas emissions which, together with adaptation, can limit climate change risks.” Established by United Nations agencies in 1988, the IPCC is the leading international scientific body for the assessment of climate change.

Specialists in food security and economics have also been working to determine what is likely to happen. Of course, there are a tremendous number of variables. And in addition to all the data points, there is the always unpredictable element of human behavior—multiplied by the millions, if not billions, of people who will determine whether efforts to limit and compensate for the effects of climate change are successful. The details of the scenarios are often different,

but the consensus is the same: The poorest people will continue to suffer the most. They face a wide variety of perils. For example, some live in areas that are becoming deserts, while others will have to relocate—along with everyone else in their country—because they come from one of several island nations that will be underwater. They need help in adapting to conditions that were difficult before climate change and are now much worse, or in relocating from places that are becoming uninhabitable.

Agricultural scientists are pinning down the many implications of climate change for growing enough nutritious food for everyone. For example, William Hohenstein from the U.S. Department of Agriculture points out that the rising temperatures and more frequent extreme weather events affect all of the components of food security: whether food is available, whether people can afford it, whether their bodies can use the nutrients effectively, and whether sources of food are stable and reliable. Lewis Ziska, also from USDA, describes how rising levels of carbon dioxide could lead to problems such as more food spoilage and less effective pesticides.

Some of the implications have not been widely foreseen. For example, a research team led by Sam Myers of Harvard University found that many crops have less protein, zinc, and iron when they are grown in air with higher carbon dioxide concentrations. This could mean that people will need different nutrients and foods when there is more carbon dioxide in the atmosphere.

Of course, scientists are not only focusing on the causes and effects of climate change, but also on strategies to adapt to and/or limit them. For example, the International Food Policy Research Institute (IFPRI) conducted a study that

forecasts what the climate will be like in 2050 and then looks at whether various agricultural techniques would work well to grow staples such as rice and wheat under those conditions. IFPRI's Agritech Toolbox includes country-level data to help visualize how approaches such as drip irrigation or no-till agriculture would work. Another example is the work being done by many researchers to develop "climate smart" seed varieties.

Strategies for adapting to climate change don't come only from highly specialized lab scientists. As mentioned earlier, people who confront climate change every day while trying to earn a living also have expertise. They have developed countless techniques that have enabled their communities to survive. Bread for the World Institute has told some of the stories—for example, women in Malawi who are using simple stoves to avoid depleting forests for firewood, and women in Pakistan who have planted a variety of small tree that had been near extinction and who now earn enough money from selling the trees to make a big difference in their lives.

Many conservation and adaptation methods have the potential to be scaled up to reach more communities and farmers, more land that could be re-forested, and other assets in the fight against climate change.

Responding effectively to the impact of climate change on those most affected—people who are hungry and marginalized—means equipping and enabling them to develop viable alternatives to ways of earning a living that are disappearing. It also means taking strong measures to solve the problem at the global level. Leadership in both areas is essential to meeting the goal of ending hunger as well as for many other reasons.



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