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sustainable solutions for ending hunger and poverty

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Study Urges Better Incomes, Farm Productivity, and Trade to Improve Food Security, Offset Ravages of Climate Change

Cancun — Addressing poverty today is the single best way to help poor people in developing countries achieve food security and adapt to climate change, according to a new report by researchers at the International Food Policy Research Institute (IFPRI).

When families have more income, they are better able to cope with drought, floods, and other climate shocks, says the report, *Food Security, Farming, and Climate Change to 2050: Scenarios, Results, Policy Options*.

"Many have made the case that we have to address climate change to fight poverty. We are saying you must address poverty as a key part of climate change adaptation, and you must do it now. Once the most serious effects of climate change kick in, it will already be too late to respond effectively," said Gerald Nelson, IFPRI senior research fellow and report co-author.

This year's severe drought in Russia and devastating floods in Pakistan offer a glimpse of a future negatively affected by severe weather. Using sophisticated computer modeling, the study assesses the harmful impact of climate change on food security through 2050. It presents 15 different future scenarios based on various combinations of potential income growth, population growth, and possible climate situations that range from slightly to substantially wetter and hotter.

The report finds that between now and 2050 staple-food prices could rise by 42-131 percent for maize, 11-78 percent for rice, and 17-67 percent for wheat, depending on the state of the world's climate, economy, and population.

Climate change will cause lower rice yields all over the world in 2050, compared to a future without climate change. One of the climate change scenarios results in substantial declines in maize exports in developed countries, but small increases in yields in developing nations. Wheat yields will fall in all regions, with the largest losses in developing countries.

The study highlights poverty for three reasons. First, because the bigger consumers' incomes, the greater their ability to afford higher food prices caused in part by climate change. Second, better-off families cope more easily with uncertainty. And third, farming families with higher incomes are better positioned to invest in new technologies that might be costly at the outset but improve productivity and resilience in the long run.

The report also finds that improving crop productivity can counteract the negative effects of climate change on food production, prices, and access.

"Investments in agriculture deserve high priority because without improved farm productivity, it will be impossible to meet the increasing demand for food from rising incomes and a growing world population," said Mark Rosegrant, director of IFPRI's Environment, Production, and Technology Division and report co-author. "Greater productivity also means that more of this growing demand can be satisfied from existing land, limiting the environmental damage that results from plowing new fields from forests and savannahs. And productivity growth leads to the rural income growth needed to improve food security."

Climate change will affect the world's regions differently and international trade is essential in offsetting changes in the production and prices of key food commodities, the report says. It concludes that strengthening agricultural trade would help countries cope with crop losses and deal with the uncertainty and variability that climate change will bring.

"The food price spikes of 2008 and 2010 both had important weather components, and during each of these periods trade offset some of the potentially severe local effects," explained Nelson. "Restrictions on international trade could jeopardize prospects for regional food security. This is yet another reason to complete the Doha Round of world trade negotiations."

Released during the latest round of United Nations climate talks, the report enhances decision makers' ability to explore the range of food security futures.

"These findings will be indispensable for policymakers and scientists seeking to draw out the added challenges to agriculture and human welfare from climate change," said Professor Sir John Beddington, chief scientific adviser to the UK Government and head of the Foresight Project on Global Food and Farming Futures, which provided major funding for the study. "The results of this scientific research will inform our own efforts to secure a sustainable future for food and farming by anticipating the potential challenges of climate change and other global phenomena 20 to 80 years in advance."

After 2050, global average temperatures may rise by 2-4 degrees centigrade, and the effects of climate change on yields will likely be much more dramatic. Reducing emissions growth today is essential to avoid a calamitous second half of the 21st Century, the report concludes.

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The International Food Policy Research Institute (IFPRI) seeks sustainable solutions for ending hunger and poverty. IFPRI is one of 15 centers supported by the Consultative Group on International Agricultural Research, an alliance of 64 governments, private foundations, and international and regional organizations. www.ifpri.org

Notes to editors:

To see the report, *Food Security, Farming, and Climate Change to 2050: Scenarios, Results, Policy Options*, please visit http://www.ifpri.org/publication/food-security-farming-and-climate-change-2050

This research forms one part of the UK Government's Foresight project on Global Food and Farming Futures. The project will publish its findings in January 2011. The Foresight Programme is part of the UK's Government Office for Science and uses the latest scientific and other evidence to provide signposts for policymakers in tackling future challenges. Government Office for Science supports the Government's Chief Scientific Adviser in ensuring that the Government has access to, and uses, the best science and engineering advice. It is located within the Department for Business, Innovation and Skills (BIS). Further details about the project can be found on the Foresight website (http://www.bis.gov.uk/foresight) or contact the BIS press office (emma.griffiths@bis.gsi.gov.uk).