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45123

The World Bank

PREMnotes

JULY
2008
NUMBER 5

SPECIAL SERIES ON THE
ECONOMICS OF CLIMATE CHANGE

Climate Change, Growth, and Poverty

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Equity emerged as the principal theme during the PREM Week session "Climate Change, Growth and Poverty," where presenters addressed the distributional consequences of climate change, as well as countries' unequal capacity to cope with the twin challenges of adaptation and mitigation. They highlighted actions to strengthen the global knowledge base, bolster domestic institutions, and mobilize innovative sources of financing as immediate priorities for the World Bank and its partners.

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The session brought together three presenters from diverse backgrounds to provide their insights into the relationship between climate change, growth and poverty: Kevin Watkins, lead author of the 2007/8 United Nations' Human Development Report on Fighting Climate Change; Jospeh Aldy, a fellow at Resources for the Future; and Julia Martinez, coordinator of the Climate Change Program at the Instituto Nacional de Ecología in Mexico. Antonio Estache, professor at the European Center for Advanced Research in Economics and Statistics of the Université Libre de Bruxelles provided comments; and the session was chaired by Ana Revenga, Director of PREM's Poverty Reduction Group.

The Unequal Impact of Climate Change

Unless decisive action is taken, climate change represents, in Kevin Watkins words, a "great disequalizer of opportunities between countries and within countries." Joseph Aldy noted that while the precise impact of climate change on global growth rates has been a source of debate among economists, there is a broad recognition that developing countries will bear the brunt of the burden: "in some of the very poorest countries the impacts could be really severe," setting growth back by 20 percent or more.

Why will developing countries be worst hit by climate change? Much is due to location, suggested Mr. Watkins, with modeling predicting a 15 to 20 percent increase in the drought-affected areas of Sub-Saharan Africa over the next 50 years, and severe delta and coastal flooding in Vietnam, Bangladesh, and Egypt (UNDP 2007). Julia Martinez drew attention to the specter of "two Mexicos," with droughts inducing critical water shortages in the Mexico City metropolitan area and the North-West, and erratic rainfall raising vulnerability to flooding in the South (Figure 1).

Climate change has increased the vulnerability of the poor through multiple channels. Unchecked, extreme weather events and incremental climatic changes could lead to very deep cuts in agricultural productivity in many developing countries, ranging from 10 percent in Asia to 17 percent in Sub-Saharan Africa (Figure 2). Ms. Martinez alerted listeners to the rising risks of morbidity due to heat waves and an increase in vector borne diseases like dengue fever and malaria because of erratic and often intense precipitation. The impact of climate change on developing countries provides more than just an economic imperative for action: "to take a stance that would allow a problem generated by the rich world to be dealt with by the poor world without international support would be a deeply unethical starting point," said Mr. Watkins.

Figure 1: Impact of Climate Change on Water Availability in Mexico, 2030

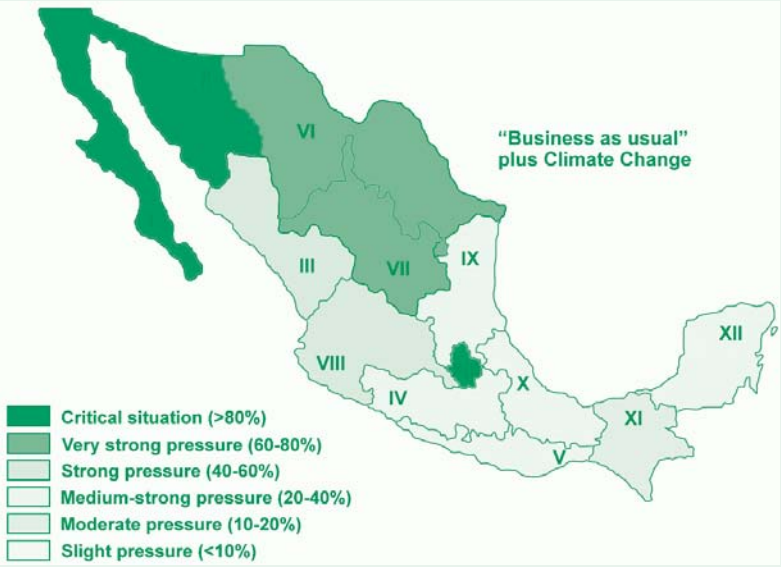
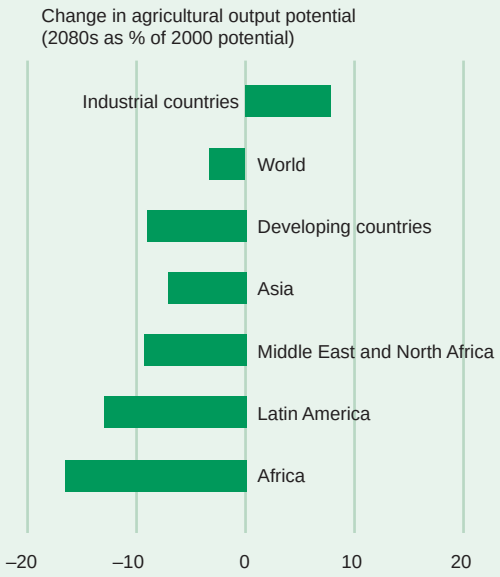


Figure 2: Impact of Climate Change on Agricultural Output, 2080



Source: Cline 2007.

In addition to extending the income gap between rich and poor countries, climate change would exacerbate inequalities within countries. Ms. Martinez described a powerful correlation between socio-economic marginalization and vulnerability to climate change in Mexico: "communities and regions with most poverty are usually those that suffer most due to meteorological phenomena," while "poverty can limit the adaptive capacity required" to manage the impact of climate change. Incremental climate change quietly threatens to push "people who are close to the edge … over the edge," said Mr. Watkins, by forcing them to adopt low risk-low return strategies that result in permanent poverty traps. In the face of climate associated risk, the poor are less likely to produce marketable crops and are most vulnerable to erosion of physical assets and reduced spending on health and education. Citing research for Ethiopia, Mr. Watkins described how children under five are 36 percent more likely to be malnourished and 41 percent more likely to be stunted if they were born during a drought year and affected by it (UNDP 2007).

Adaptation and Mitigation: Rhetoric and Reality

Developing countries will not only bear the brunt of the impact of climate change, they are far less equipped to respond to the challenges of adaptation and mitigation. To model for risks and to develop strategies to minimize them "you need information," said Mr. Watkins, but "the part of the world that faces the greatest risks is the part with the least information," with all of Sub-Saharan Africa having fewer weather

stations than France. The political economy of reforms represents another obstacle: citing emission trading policies, Mr. Aldy noted that most developing countries "do not have strong environmental policy agencies" capable of pushing through administratively complex and politically controversial reforms.

Capacity building in developing countries has been impeded by donors' reluctance to convert rhetoric on climate change into reality. "It costs money to decarbonize growth," noted Mr. Watkins, yet a "massive gap in political leadership" persists, as donors have so far failed to deliver on their commitments to transfer technology. He went on to identify an "adaptation apartheid" between developed and developing countries: in the former, governments have effectively scaled up "climate proofing" investments; in the latter, the majority of adjustment is undertaken privately, whether through community investments in sea dykes or household coping strategies, such as walking further to collect water or reducing consumption. In other words, the response to climate change has itself produced dis-equalizing effects, as "risk is being socialized in rich countries … and is being privatized in the world's poorest countries."

International actions aimed at climate change mitigation have also created unintentional consequences for the poorest countries and communities. Most notably, investments in biofuels have contributed to recent hikes in food prices, with the threat of crisis particularly pronounced in West Africa and the Horn of Africa. The speakers pointed to a potential conflict between policies which are optimal from a climate change perspective and those which are best for the poor. For instance, the removal of fuel subsidies makes sense from the perspective of internalizing the environmental costs of emissions, noted Antonio Estache, but can risk confounding the MDG targets, many of which depend on enhanced mobility of the poor.

The Agenda Ahead

With the implications of climate change for equity at the forefront of the discussions, the speakers highlighted three priority areas of action for the World Bank and its partners.

First, they underscored the importance of strengthening current knowledge on the relationship between climate change, growth and poverty. There were unanimous calls for more spatially and temporally refined impact analysis, an enhanced focus on the vulnerability of the poor, and greater attention to the distributional consequences of policy responses. Work underway in Mexico provided an encouraging example, indicated Ms. Martinez, with a forthcoming publication on the social impacts of climate change translating research findings "into a common language" (Sánchez and Soria). Given its research and analytical capacities in both the areas of climate change and shared growth, the World Bank is particularly well-placed to push the research agenda forward and disseminate the findings to those who will most benefit from them.

Second, the speakers outlined the contours of a capacity and institution-building agenda that ought to proceed in tandem with advances in the knowledge base: as Mr. Estache cautioned, "let's not wait until we have the right data to do things." Ms. Martinez drew attention to the institutional shifts required to incrementally integrate climate change policymaking into national development planning. In Mexico, the creation of an Inter-Ministerial Commission on Climate Change has enabled the inclusion of climate-related policies in sectoral planning. A series of ministerial-level workshops has helped to change mindsets by alerting policymakers to the likely consequences of climate change throughout the economy and society. Mexico's efforts will culminate in the integration of a Special Program on Climate Change into the National Development Plan. The speakers noted that capacity support from the World Bank and other donor agencies will help to encourage the mainstreaming of mitigation and adaptation strategies in other developing countries, particularly in low income countries and fragile states where capacity is severely constrained.

Last, and certainly not least, the presenters drew attention to the urgency of identifying and mobilizing additional sources of financing from both the private and public sectors. Given the impact of climate change on risk, insurance represents a particularly valuable market for expansion. The speakers identified several programs that might be scaled up or adapted for other country contexts, including Ethiopia's Productive Safety Nets Program, which has

provided predominantly cash-based transfers to vulnerable groups in areas prone to food crises, and the use of weather derivatives in India, to compensate farmers for major deviations in weather norms. They applauded the outcomes of the Bali Conference in 2007, including the creation of an Adaptation Fund with resource flows of an estimated $500 million by 2012, and also welcomed recent technological transfer funds set up by the governments of Japan, the United Kingdom and the United States. But the challenge remains one of ensuring that donors deliver on these commitments, noted Mr. Watkins.

The delicate balance between public and private sector activity was a key concern. Ms. Martinez noted that even where the private sector is playing a principal role in providing safety nets, the public sector can provide invaluable research on climate-related risk. Policymakers should be sensitive to the risk of "crowding out" of private sector activities, noted Mr. Aldy, while mindful of the need to develop safety nets for risks that cannot be insured against. The public sector will also need to step in to ensure that climate change mitigation initiatives, such as support for biofuels and the removal of fuel subsidies, do not negatively impact the poor, he noted, and introduce cash transfer or voucher schemes to compensate the worst hit households if appropriate.

Asked "what do we expect from the World Bank," Mr. Watkins answered simply "leadership." At an event which had underscored the inseparability of climate change, growth and poverty, Mr. Aldy noted that "ultimately, promoting development will be the best policy" to help poor countries cope with the twin challenges of adaptation and mitigation. The World Bank's role will be at once one of uniting donors behind the climate change agenda, while continuing to promote broad-based development so that countries are more adept at withstanding the impact of climate change on growth and equity.

References

All speakers' presentations are available at http://go.worldbank.org/G6BC7BIRU0.

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About the note series

The PREM notes on the Economics of Climate Change are part of the effort conducted by the Poverty Reduction and Economic Management Vice Presidency of the World Bank to raise awareness on poverty, distributional, financial, fiscal, and trade related issues that tend to be underestimated in the more scientific and political debates surrounding Climate Change. The notes do not necessarily reflect the view of the World Bank, its board or its member countries. However, they do reflect the content of some of the internal debates among economists interacting traditionally on emerging or overlooked economic consequences of environmental policies.

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PREM network
Poverty Reduction and Economic Management

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