



As the Climate Changes, Adaptation Becomes Imperative

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The latest round of climate negotiations under the auspices of the United Nations opened on December 1, 2014, in Lima, Peru. Meeting amid melting glaciers and recent droughts in the Andean region, many conferees now realize that it is too late to prevent substantial climate change, no matter how fast governments work now to limit dangerous carbon emissions. Even as discussions about mitigation move forward, governments, experts, and private groups are being forced to consider the steps needed to adapt to the environmental shifts that are already apparent or inevitable in coming years and decades. Adaptation raises difficult questions, however, not only about who will pay but also about who will benefit.

Costs and Trade-Offs

Adaptation to climate change will require substantial public investment. Sea walls will be needed to protect coastal zones against floods like those when Hurricane Sandy battered New York in 2012. Early warning and evacuation systems will be needed to protect against tragedies like those resulting from Typhoon Haiyan in the Philippines in 2013 and Hurricane Katrina in New Orleans in 2005. Cooling centers and emergency services will be needed to cope with heat waves like the one that killed 70,000 people in Europe in 2003. Investments in water systems will be needed to protect farmers and pastoralists from extreme droughts like the one that gripped the Horn of Africa in 2011. To keep pace with the shift of warmer temperature zones toward the north and south poles, big projects must be mounted to replant forests and shift species.

With such huge adaptive efforts on the horizon, debates on costs and benefits have begun. Who will pay for adaptation – by contributing, for example, to the United Nation's Green Climate Fund? How will the money be spent? Questions of equality and clashing economic interests will be front and center in such debates.

A thought experiment illustrates the choices we face. Imagine that without major new investments in adaptation, climate change will cause world incomes to fall by 25 percent across-the-board over the next two decades, with everyone's income going down, from the poorest farmworker in Bangladesh to the wealthiest real estate baron in Manhattan. Adaptation can reduce some but not all of those income losses. What should be our priority in adaptation – to reduce losses for the farmworker or the real estate baron?

- For roughly one billion people in the world who live on one dollar a day, a 25 percent income loss will amount to an absolute loss of only twenty-five cents per day – but this small amount might make the difference between life and death.
- In contrast, for the real estate baron – and his fellow U.S. "one-percenters" with average incomes of about \$2000 per day – a 25 percent loss will be a matter of regret, to be sure, but not a matter of survival. He will undoubtedly find a way to get by on \$1500 a day.

In human terms, the baron's loss pales compared to that faced by the Bangladeshi farmworker. In dollar terms, however, it's 2000 times larger: a daily loss of \$500 versus twenty-five cents.

Economic Efficiency or Human Equity?

Conventional economic models offer one way to make the trade-off between income losses for barons and farmworkers. They prescribe spending more to protect barons, following a rationale for maximizing dollar pay-offs that was set forth with brutal clarity in a 1992 memorandum signed by Lawrence Summers, then chief economist of the World Bank. Writing about where "dirty industries" should be located, Summers argued that "the economic logic of dumping a load of toxic waste in the lowest-wage country is impeccable and we should face up to that." This logic rests on a notion of economic efficiency that counts each dollar equally. A dollar is a dollar, no matter whether it goes to a starving child or a millionaire. The only task of economists, in this view, is to maximize the size of the total dollar pie. How it's sliced is not their problem.

The standard economic logic invoked by Summers would dictate that climate change adaptation should focus first and foremost on protecting the wealthiest and most productive areas and people – even if that means helping the rich at the expense of the poor.

A very different way to set adaptation priorities is to count each person equally, not each dollar. This approach rests on the ethical principle that a healthy environment is a human right, not a commodity to be distributed on the basis of purchasing power. Nor, in this rights-based approach, is a healthy environment a privilege to be distributed on the basis of political power.

The equity principle is widely embraced around the world – from the affirmation of the U.S. Declaration of Independence that people have an inalienable right to "life, liberty and the pursuit of happiness," to the guarantee in the South African Constitution that everyone has the right "to an environment which is not harmful to their health or well-being." Following this principle, public investments in projects to adapt to a fast-changing environment would place safeguarding the lives of the many – most of whom are poor – ahead of protecting the incomes and property of the rich.

The Coming Decisions – And Who Will Make Them

Hard choices clearly lie ahead – to be tackled by communities, regional and provincial governments, national governments, and world governing bodies. As climate change wreaks havoc in coming years, the world will have to decide between protecting people and protecting dollars – and the decisions we make will reveal much about what 21st-century societies truly value.