

## The Urgency of Climate Adaptation

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The nations of the world, including the United States, have gathered in Katowice, Poland for the last two weeks to urge each other to do more than pretend to address climate change. There is now near-universal recognition (Donald Trump excepted) that their rhetorical commitments at Paris three years ago will, even if honored, be insufficient to slow climate change enough to keep average global temperatures below, or even at, 2 degrees Celsius (3.6 degrees Fahrenheit) above average temperatures at the start of the industrial revolution in 1750.

And the shameful fact is that the Paris commitments are not being honored in practice, either in the United States under Trump or in major developing countries such as Brazil and Indonesia. While China and possibly even India may be able to meet their Paris commitments by reducing (China) or limiting (India) future greenhouse gas (GHG) emissions, those commitments are, according to Climate Action tracker, grossly insufficient to bring their emissions down to the levels required for the world to avoid an increase of 3 degrees Celsius (5.4 degrees Fahrenheit) or more over pre-industrial levels. If U.S. and E.U. GHG emission reductions do not meet their Paris commitments (and Poland, an E.U. member is currently racing to build more coal plants) and developing country emissions continue to increase sharply, average global temperature could even increase by 4 degrees Celsius (7.2 degrees Fahrenheit) by the end of our century, making large parts of the world uninhabitable and changing dramatically the natural environment in which human life has flourished over the past five thousand years.

As I have written before, these efforts to sharply reduce (or "mitigate") GHG emissions are essential to a livable world. However, it is clear now that they are not sufficient and absolutely must be matched by a parallel effort, equally urgent, to help the world adapt to climate change and its impacts that are now inevitable because of the continuing failure of both developed and developing countries to reduce their GHG emissions since the adoption of the United Nations Framework Convention on Climate Change in 1992. Carbon dioxide and other GHGs can remain active in the atmosphere for a century or more, and the Earth's oceans, which absorb more than 90 percent of the excess heat from the atmosphere and are already warming and experiencing increased acidification, could take several millennia to return to "normal" conditions after our GHG emissions are stabilized.

There is no government, either democratic, hereditary or even dictatorial, that can survive conditions in a "Four Degree World," when tens of millions of its citizens lack food, water, homes, medical care and the ability to withstand extreme heat, floods and fires and when conflict over scarce resources makes civil society (including the rule of law) a distant memory for even well-intentioned democratic governments. If current level of migration from Africa, the Middle East or Latin America threaten democracy and the rule of law in the E.U. (and the United States), consider the reaction when migrant levels rise exponentially over the next several decades as climate change accelerates under the influence of GHGs already in the atmosphere and oceans. (As it happens, representatives from 164 countries met in Marrakech, Morocco this past Monday to adopt a new Global Compact for Safe, Orderly and Regulation Migration, a landmark agreement that is, unfortunately, non-binding. Under Trump, the United States has denounced this important new Compact, and Australia, Hungary and Poland have refused to sign).

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Meaningful and rapid adaptation is therefore a necessity, particularly in developing countries, which are widely predicted to bear the brunt of climate impacts. With few exceptions, those nations have done the least to cause our current crisis, will suffer the most direct consequences and have the fewest financial and institutional resources to help their citizens adapt to and survive the conditions described above. In terms of “environmental justice,” this may be the most extreme example of environmental injustice our world has yet seen. In terms of enlightened self-interest, the failure of the developed world to assist in that adaptation is startling. The focus of the Poland climate change conference, like earlier conferences in Paris and Copenhagen, has largely been on mitigating GHGs rather than climate adaptation. Yet there are some promising signs, largely beyond the spotlight, that show what might be done if a similar effort were directed at adaptation. Unlike mitigation, adaptation can also be carried out in concrete steps that have significant near or medium-term benefits for local communities and lend themselves to tangible cooperative efforts by the international community.

There are two separate U.N.-sponsored organizations aimed at climate adaptation, a specialized Adaptation Fund established in 2010 following the Copenhagen conference and the Green Climate Fund (GCF) established the following year at the Cancun climate conference. Although the GCF’s mandate also includes mitigation, it has approved, often in conjunction with other public funding agencies, a broad array of climate adaptation and “cross-cutting” projects in developing countries. These projects, which are summarized on the GCF website ([www.greenclimatefund.org](http://www.greenclimatefund.org)), focus largely on rural programs to improve weather forecasting, irrigation, crop substitution, refrigeration, solar-powered wells and similar small-scale initiatives to help local farmers in Africa, Asia and Latin America (many of whom are women) adapt to abruptly changing rainfall and drought patterns and to compete in an increasingly global marketplace. In a few cases, the GCF has also been able to help finance broader rural adaptation efforts in Bangladesh, Senegal, India and elsewhere aimed at preserving threatened coastlines, replenishing shallow aquifers or, in one case, diverting a river to meet farmers’ irrigation needs. Urban adaptation, which is often far more expensive because of the need to relocate major infrastructure or whole communities, appears to have been largely out of reach for the GCF, presumably because of the GCF’s own limited budget. Initial funding for the GCF amounted to approximately \$10 billion for both mitigation and adaptation projects, of which approximately \$1.5 billion has been approved and some \$650 million actually disbursed to date. The GCF is currently seeking additional funding commitments from the parties to the UNFCCC.

The Adaptation Fund ([www.adaptationfund.org](http://www.adaptationfund.org)) has approved some \$530 million in climate adaptation projects in Africa, Asia, the Middle East and Latin American since 2010 and reports that has received requests for approximately \$270 million in project assistance during the past year. These projects too are largely, and reasonably, aimed at rural adaptation farming needs, though some focus on the needs of internally displaced persons (IDPs). A number of Adaptation Fund projects also take a regional perspective by helping adjacent countries carry out coordinated planning projects for shared water resources, as Kenya, Tanzania, Burundi, Rwanda and Uganda are doing in the Lake Victoria basin in East Africa and as Benin, Burkina Faso, Cote d’Ivoire, Ghana, Mali and Togo are doing in the Volta Basin in West Africa.

While the adaptation projects currently under way or undergoing review by the Green Climate and Adaptation Funds are important first steps and likely necessary to test their respective financing models, it must be said that the scale of their combined operations is inadequate to the challenge faced by developing countries, and thus inadequate for the developed world as well. This is surely not the Funds’ fault, for they are still in start-up mode. However, there is simply no way that the \$10 billion pledged to the GCF or the less than \$1 billion in projects approved by the Adaptation Fund will be adequate to permit the most vulnerable countries carry out both the thousands of local adaptation projects and the hundreds of large-scale urban, coastal, regional and cross-border adaptation project that will be required over the next decade to help farmers adjust to new flood, drought and market conditions and aid cities in managing their growing populations at the same time that water and food availability is reduced and municipal services are overwhelmed by both natural disasters and internal migration. The combined efforts of the two Funds, as well as other multilateral efforts, are still nowhere near the \$100 billion annually that the Paris Agreement promised would be made available to developing countries for adaptation—and even that global figure was inadequate when compared to the \$80 billion or more that individual U.S. cities and states needed after devastating storms.

Where is that money going to come from? If developed countries were unwilling to appropriate the necessary funds when they were enjoying the recent economic surge and the United States was fully committed (at least verbally) to addressing climate change, how likely is it that they will now substantially increase their contributions to \$100 billion annually during a brewing global trade war, ensuing economic slowdown, rising domestic unrest and an absence of any U.S. leadership? Moreover, long-term adaptation projects need long-term financing commitments, which are hard to make even if adequate resources are appropriated for a year or two by donor governments. While some opportunities may exist for public-private partnerships in mitigation projects, it is much more difficult to identify similar opportunities for adaptation projects, which are less likely to yield reliable near-term profits for investors.

What is needed, in short, is a reliable multi-year source of increased adaptation funds that is not dependent either on annual appropriations by donor governments or short-term private sector investment decisions. As indicated in previous columns, I believe the best way to secure those funds on an on-going dedicated basis is through a small charge (amounting to a few basis points) on all international financial transactions, as recommended by the New York City Bar Association's Task Force on Climate Adaptation three years ago. All proceeds from such a charge, which could be imposed by the G-20 countries (or even their major clearinghouse banks), would be dedicated to either the GCF, the Adaptation Fund or a comparable World Bank or other facility and used solely for climate adaptation programs of the sort described above, but scaled up to meet the foreseeable demand for such assistance over the next 25 years. With international money transfers providing a reliable basis for dedicated funding, it would then become possible for both of the Funds, and possibly other programs as well, to provide the assistance required to go beyond their initial projects to help countries prepare their citizens to survive foreseeable climate impacts. Such a financial transaction charge would also help place at least some of the burden of climate adaptation on the global marketplace, which has contributed significantly to the accelerating pace of climate change in all countries.

Even with a dedicated funding source, there would be projects that would fail for poor planning or implementation, and some funds would inevitably be lost through corruption. Nevertheless, such an international financial transaction charge (or mini-tax) would go a long way toward helping developing countries plan for and implement the kind of systemic adaptation necessary to save their rural farms, manage their growing cities, provide for their internally displaced citizens and accommodate refugees from neighboring countries. Perhaps it is time for the Bar Association proposal to receive the attention it deserves now that the urgency of climate adaptation is finally being recognized. Hopefully the parties meeting in Poland this week can make that, and climate adaptation generally, a priority equal to the mitigation commitments they are seeking from their reluctant partners.

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