

Lifting the taboo on adaptation

Renewed attention to policies for adapting to climate change cannot come too soon for Roger Pielke, Jr, Gwyn Prins, Steve Rayner and Daniel Sarewitz.

During the early policy discussions on climate change in the 1980s, adaptation was understood to be an important option for society. Yet for much of the past two decades the mere idea of adapting to climate change became problematic for those advocating emissions reductions, and was treated “with the same distaste that the religious right reserves for sex education in schools. That is, both constitute ethical compromises that in any case will only encourage dangerous experimentation with the undesired behaviour”¹. Indeed, former US vice-president Al Gore forcefully declared his opposition to adaptation in 1992, explaining that it represented a “kind of laziness, an arrogant faith in our ability to react in time to save our skins”.

But perspectives have changed. Adaptation is again seen as an essential part of climate policy alongside greenhouse-gas mitigation. Both the recent Stern Review on the Economics of Climate Change² and the efforts of the Intergovernmental Panel on Climate Change³ demonstrate that adaptation is firmly back on the agenda. There are at least three reasons why the taboo on adaptation can no longer be enforced.

First, there is a timescale mismatch. Whatever actions ultimately lead to the decarbonization of the global energy system, it will be many decades before they have a discernible effect on the climate. Historical emissions dictate that climate change is unavoidable. And even the most optimistic emissions projections show global greenhouse-gas concentrations rising for the foreseeable future.

Second, vulnerability to climate-related impacts on society are increasing for reasons that have nothing to do with greenhouse-gas emissions, such as rapid population growth along coasts and in areas with limited water supplies. As Hurricane Katrina made devastatingly clear, climate vulnerability is caused by unsustainable patterns of development combined with socioeconomic inequity⁴. Post-Katrina debate focused on whether or not the event bore the signature of global warming, despite the fact that scientists have known for decades the inevitability of a Katrina-like disaster in New Orleans.

Finally, those who will suffer the brunt of climate impacts are now demanding that the international response to climate change focus on increasing the resilience of vulnerable societies to damaging climate events that — like Katrina — will occur regardless of efforts to



R. RANOCO/REUTERS/CORBIS

Rising sea levels are only part of the story — in the Philippines, land use changes have increased flood risk.

mitigate emissions. In 2002, developing countries put forward the ‘Delhi Declaration’, calling for greater attention to adaptation in international climate-change policy negotiations⁵.

Mind the gap

The rehabilitation of the idea of adaptation is overdue and seems straightforward. But there is an elephant in the room: the core assumptions underlying contemporary climate-change policy conflict with the goal of increasing resilience to natural climate change and variability. Adaptation cannot just be dusted off and embraced — new ways of thinking about, talking about and acting on climate change are necessary if a changing society is to adapt to a changing climate.

The United Nations (UN) Framework Convention on Climate Change (UNFCCC) treats adaptation in the narrowest sense — as actions taken in response to climate changes resulting from anthropogenic greenhouse-gas emissions⁶. By contrast, for decision-makers and researchers focused on sustainable development and disaster mitigation, adaptation describes a

much broader range of actions that make societies more robust to changes, including, but not limited to, those caused by climate change⁶.

This distinction profoundly affects society’s ability to take effective action. In the UNFCCC’s view, adaptation is only necessary because of greenhouse-gas emissions — an interpretation that is widely accepted. For instance, the Stern Review explained that adaptation “is crucial to deal with the unavoidable impacts of climate change to which the world is already committed”². Adaptation, therefore, represents a cost of human-caused climate change that would be avoided if climate change were prevented through emissions mitigation.

At the margins

But most projected impacts of anthropogenic climate change are marginal increases on already huge losses. Locating adaptation in this margin creates bizarre distortions in public policy. For example, in the Philippines, policy-makers have begun to acknowledge the flood threats posed by the gradual sea-level rise of 1 to 3 millimetres per year, projected to occur with climate change. At the same time, they remain oblivious to, or ignore, the main reason for increasing flood risk: excessive groundwater extraction, which is lowering the land

“New ways of thinking about, talking about and acting on climate change are necessary if a changing society is to adapt to a changing climate.”



Malaria risks are increasing for reasons that have nothing to do with climate change.

surface by several centimetres to more than a decimetre per year⁷. As with Katrina, the political obsession with the idea that climate risks can be reduced by cutting emissions distracts attention from the more important factors that drive flood risks.

Similarly, non-climate factors are by far the most important drivers of increased risk to tropical disease. For instance, one study found that without taking into account climate change, the global population at risk from malaria would increase by 100% by 2080, whereas the effect of climate change would increase the risk of malaria by at most 7% (ref. 8). Yet tropical disease risk is repeatedly invoked by climate-mitigation advocates as a key reason to curb emissions. In a world where political attention is limited, such distortions reinforce the current neglect of adaptation.

The wrong direction

Virtually every climate impact projected to result from increasing greenhouse-gas concentrations — from rising storm damage to declining biodiversity — already exists as a major concern. As long as adaptation is discussed in terms of its marginal effects on anthropogenic climate change, its real importance for society is obscured.

The focus on mitigation has created policy instruments that are biased against adaptation⁸. Under the Kyoto Protocol to the UNFCCC, rich countries pay costs that poor countries incur by adapting to the marginal impacts of climate change — but they can in principle avoid these costs through enhanced mitigation efforts⁹. This provision of the Protocol exemplifies the failure to take adaptation seriously: not only are the funds involved provided on a voluntary basis by rich countries but they are held hostage to mitigation⁹. The logic is

that greenhouse-gas reductions will, in turn, reduce marginal adaptation costs. In practice, this means that the UNFCCC will pay “costs that lead to global environmental benefits, but not those that result in local benefits”⁹. To those experiencing devastating losses from climate impacts in developing countries, such logic must sound surreal: policy ‘success’ means not investing in adaptation even as climate impacts, driven mainly by non-climate factors, continue to mount.

To address the bias in the Kyoto Protocol, some have suggested that a new protocol, focused on adaptation, be developed under the Climate Convention¹⁰, but it does not seem to have wide support. Others suggest that adaptation be ‘mainstreamed’ into existing institutions focused on sustainable development and disaster reduction, such as the UN International Strategy for Disaster Reduction¹¹. The reality, of course, is that adaptation is already mainstreamed. The roof over your head, complex reinsurance contracts for disasters or, indeed, every other institution, technology and policy that helps people to live safely and prosperously in the face of climatic variability, change and uncertainty are mainstream. The challenge is to move more of humanity into this mainstream.

Taking responsibility

Progress on adaptation is also distorted by the common assumption that marginal adaptation is a local issue, whereas mitigation is a global one, requiring global coordination^{2,9}. But does the distinction hold? With the ongoing failure of many rich nations to reduce emissions, action on mitigation has become increasingly diffuse as communities, cities, states and

companies pursue emissions reductions. By contrast, the absence of a high-profile international vehicle for focusing attention on the broad benefits of adaptation seems to be one reason for its poor-cousin status at all scales of policy making¹¹.

What would a more vigorous international debate on adaptation bring? Those who have been concerned that attention to adaptation (and sustainable development) would detract from mitigation efforts have sought to avoid such a debate. Yet policy-makers need to understand the limitations of mitigation for reducing vulnerabilities, and give more urgent consideration to broader adaptation policies — such as improved management of coastal zones and water resources — that will enhance societal resilience to future climate impacts regardless of their cause. To define adaptation as a cost of failed mitigation is to expose millions of poor people in compromised ecosystems to the very dangers that climate policy seeks to avoid.

A poor fit

But defining adaptation in terms of sustainable development does not fit comfortably into the current political framework of the climate-change problem. By introducing sustainable development, one is forced to consider the missed opportunities of an international regime that for the past 15 years or more has focused enormous intellectual, political, diplomatic and fiscal resources on mitigation while downplaying adaptation. Until adaptation is institutionalized at a level of intensity and investment at least equal to

those of the UNFCCC and Kyoto Protocol, climate impacts will continue to mount unabated, regardless of even the most effective cuts in greenhouse-gas emissions. ■

Roger Pielke, Jr, is at the University of Colorado. Gwyn Prins is at the London School of Economics and Columbia University. Steve Rayner is at Oxford University's James Martin Institute. Daniel Sarewitz is at Arizona State University. e-mail: pielke@colorado.edu

“Policy-makers need to understand the limitations of mitigation for reducing vulnerabilities.”

1. Thompson, M. & Rayner, S. *Cultural Discourses in Human Choice and Climate Change* Vol. 1 (Battelle Press, Columbus, 1998).
2. Stern, N. (ed.) *The Economics of Climate Change: The Stern Review* (Cambridge Univ. Press, Cambridge, 2006).
3. Intergovernmental Panel on Climate Change <http://www.ipcc.ch>.
4. Pielke, R. A. Jr & Sarewitz, D. *Population and Environment* **26**, 255–268 (2005).
5. UNFCCC *The Delhi Declaration on Climate Change and Sustainable Development* at http://unfccc.int/cop8/latest/delhidecl_infprop.pdf (October 2002).
6. Pielke, R. A. Jr *Environmental Science & Policy* **8**, 548–561 (2005).
7. Rodolfo, K. S. & Siringan, F. P. *Disasters* **30**, 118–139 (2006).
8. Goklany, I. *Science* **306**, 55–57 (2004).
9. Bouwer, L. & Aerts, J. C. J. H. *Disasters* **30**, 49–63 (2006).
10. Burton, I. *Policy Options* December–January, 33–38 (2005).
11. Huq, S. & Reid, H. *IDS Bulletin* **35**, 15–21 (2004).

See Editorial, page 567.