

Challenges and Opportunities

Knowledge for development under climate change

BY HABIBA GITAY AND
MICHELE DE NEVERS

CLIMATE CHANGE IS AN EXAMPLE of three converging issues: i) technological advances that have allowed us to over-exploit a natural resource—specifically the absorption capacity

of the atmosphere ii) failure or lack of markets to balance greenhouse gas emissions with the absorptive capacity of the atmosphere and iii) a global resource (atmosphere) being treated as a externality at the national level (see earlier article by Sweeney). Given the recognition of the urgent need to address climate change and the need to deal with these three



Community based adaptation activities in Northwest Bangladesh: This billboard explains the causes of climate change, the impacts of climate change on the communities, and what can be done to adapt to these impacts.

issues, what are the challenges and opportunities for effective and sustainable outcomes for the climate system and development?

Earlier articles in this report deal with these issues from different perspectives: Stern and Noble have highlighted the financial support and/or investments needed to develop and/or implement effective actions for reducing greenhouse gas emissions and for adaptation. The articles by Gupta and McKee deal with some market approaches and microfinance for mitigation and adaptation. Sweeney, Ray and Xuedu, and his co-authors, have summarized the technological and regulatory frameworks for mitigation and approaches to adaptation, globally or in their respective countries. National policies and regulatory frameworks and collective action at the international level are indeed needed to begin internalizing the cost from greenhouse gas emissions—the Bali Action Plan is a start as pointed out by Mead and her co-authors. Denton and her colleagues demonstrate a “learning by doing approach” to knowledge generation and capacity building—an essential element in all three issues. This article concentrates on knowledge management and capacity enhancement challenges and opportunities for climate resilient development.



Strategic and concerted effort for knowledge management

ALTHOUGH THERE IS A NEED to generate knowledge for both mitigation and adaptation, a more urgent need exists for a concerted and coordinated effort to share existing knowledge and encourage its effective use both for analyzing and developing policies and for action on the ground. As this knowledge is applied, often new knowledge is generated and gaps identified. Since mitigation and adaptation actions are still in the early stages of implementation in many countries, capturing and widely sharing the knowledge generated becomes a necessity. Along with this, capacity development and/or enhancement are necessary to effectively apply that knowledge.

With the increasing interest in climate change, many organizations and funders are starting mitigation and adaptation activities in multiple countries and within various sectors in those countries. However, there is a concern that much needed resources—financial and human—would not be used effectively or few long-term benefits towards either low carbon economies or resilient societies would occur. Drawing on earlier work on development and experiences of countries, such

as Costa Rica, a set of potential actions could be taken to avoid these outcomes. They include:

- A national clearing house mechanism to assist in coordinating capacity development and knowledge generation activities;
- The establishment of learning and knowledge organizations with a clear mandate for knowledge management and capacity development to ensure sustainability over the long-term; and
- An effort to link financial mechanisms, such as microfinance, market mechanisms and national borrowing/grants from bilateral and multilateral development agencies, with climate change related actions. For some countries, this is very important as often climate change portfolios are not in the development line ministries that typically deal with these financial mechanisms.

As part of the Bali Action Plan and existing programmes under the UNFCCC (for example, the Nairobi Framework, which concentrates on mitigation, the Nairobi Work Programme on Impacts, Vulnerability and Adaptation, and capacity building activities), there are efforts to provide coordination at the international level. However, whether such coordination flows down to the national level is not yet clear.



energy, agriculture, health, etc. can be developed, there is a danger that such responses could lead to further problems. For example, agricultural policies that increase the areas under irrigation as a response to decreased and variable rainfall can affect hydropower production, water availability to urban areas downstream and the environmental flow, and thus the potential livelihoods of people. Hence, one challenge is for sector-based organizations to effectively work together, share knowledge and respond to the mitigation and adaptation challenge collectively. Past experiences in many sectors (e.g., water management, community development programs—Ostrom, 1990) demonstrate that an approach, which encourages full and active participation of the varied stakeholders, leads to effective knowledge sharing and use and thus a better chance for climate resilient development.

Knowledge for national and local climate risks

THE GENERAL AWARENESS of climate change has increased recently due, in part, to intensified media and political attention, and the fact that many societies are experiencing the impacts of the increased frequency and intensity of extreme climatic events. However, a deeper understanding of climate change is needed for countries to be able to develop their own context-specific policies and subsequent actions on a long-term basis and integrate them into their development agendas. Developing and/or enhancing human capital and skills is an important component for this.

A wide set of literature has shown that active participation and incorporation of country-specific and local-level knowledge is necessary for effective development outcomes. Broad stakeholder participation, including those with the local knowledge, would allow the incorporation of such knowledge into the development process (Ostrom 1990, Carr et al 2007). While the development community has faced challenges in valuing and incorporating a diverse knowledge base, developing and/or adopting this knowledge for climate change presents additional challenges for the knowledge agenda, namely the urgency for the knowledge to be generated and/or used for practical realities.

Knowledge and capacity are also critical for the development of policies that are coherent at the national level, particularly since climate change affects multiple sectors in multiple ways — be it in the way we produce and use our energy or how we deal with the impacts of climate change. Although sectoral policies for

Opportunities from climate change

CLIMATE CHANGE IS PROVIDING opportunities for additional innovation, moving towards collective global action, protecting a global good and sustainable development. Existing and new knowledge and the capacity to use that knowledge are extremely important along with various policy, financial, market and investment instruments. In this emerging field, knowledge must be generated, captured and used for practical purposes. However, climate impacts, adaptation options and development goals can be very context specific. Thus, there is a need to devise ways of maintaining local knowledge and skills over the long-term and generating knowledge for particular contexts. Enhanced capacity and skills would assist in improving our ability to manage climate risk in the short to long-term, and from the local to the national level, and to reach better outcomes for the atmosphere, human societies and, ultimately, our planet.

Habiba Gitay and Michele de Nevers are based at the World Bank Institute, The World Bank, Washington DC.

References

- Carr, E. R., P. M. Wingard, S. C. Yorty, M. C. Thompson, N. K. Jensen, and J. Roberson, 2007. Applying DPSIR to Sustainable Development. *International Journal of Sustainable Development and World Ecology* 14 (6) 543-555.
- Ostrom, E., 1990. *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge University Press. 298pp.