

Adapting to Climate Change: A Challenge and Opportunity

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Question One: Does climate change require new approaches to making decisions? Is the way we currently plan for the future and react to unexpected change sufficient to accommodate the uncertainty, scale, long lead time, and complexity associated with climate impacts?

Humanity has been adapting to all kinds of conditions, especially climatic conditions, for millennia and has done so with relative success so far. Human societies will continue to do so in response to potential adverse impacts of climate change as well. However, the level of such adverse impacts can be reduced considerably by pro-active or planned adaptation. The issue being addressed here is to what extent we can learn from the past and the science about the future to plan in advance to reduce those adverse impacts when they occur.

Questions being responded to:

- 1. Is the way we currently plan for the future and react to unexpected change sufficient to accommodate the uncertainty, scale, long lead time, and complexity associated with climate impacts?*

2. *For example, are current decision-making processes used by governments able to incorporate the long-term nature, surprises, heightened change and variability and the uncertainty of climate change or does such decision making require an entirely new approach?*
3. *If so, what needs to change? And why?*
4. *If not, how should current practices be harnessed to plan for and react to climate risks today and in the future?*

Preamble

I will argue that dealing with (or adapting to) the adverse impacts of human induced climate change is something that our generation and the next will have to learn to do in all countries, but starting in the poorest and most vulnerable countries (and the poorest and most vulnerable communities in all countries) for decades to come. If efforts to reduce global emissions of greenhouse gases fail to keep mean global temperature increase below 3 or 3.5 degrees Centigrade (the current trajectory) then such adverse impacts are likely to be of a globally catastrophic magnitude and may be beyond adaptation in many countries and communities.

However, even if global temperature rise is kept to below 2 degrees Centigrade (the current level of aspiration) many ecosystems and communities (perhaps involving hundreds of millions of mostly poor and vulnerable people) face severe adverse impacts. Such adverse impacts will occur first (and indeed may already be occurring) in the most vulnerable regions of the world where the poor make up the largest part of the population, but will in time also affect many richer parts of the world.

Thus, while over time all nations will have to learn to adapt to the adverse impacts of climate change, the poorest countries are the ones that will have to do so first (and indeed are already doing so). However, our knowledge and experience of what to expect and then how to prepare for it, is still in its infancy and we will collectively have to climb a very steep learning curve.

In answering the above set of questions I will argue that:

1. We are currently not well placed to deal with these kinds of long-term problems, either at the global or national levels (although countries do differ from one another in this respect).

2. Current decision-making processes, at both global as well as national level, are inadequate "“ but responding to climate change presents an opportunity to do things differently.
3. What needs to change is the way decisions are made and implemented.
4. Present processes, structures and institutions, even if inadequate, cannot be wished away and must be involved in the change.
5. In developing a new paradigm of learning and decision-making on adaptation to climate change, the rich (countries and people) can learn from the poor (countries and communities).

Adaption to climate variability vs adaptation to climate change?

It can be argued that mankind has been adapting to all kinds of conditions, especially climatic conditions, for millennia and has done so with relative success so far. This is indeed true and human societies will continue to do so in response to potential adverse impacts of climate change as well. However, the level of such adverse impacts can be reduced considerably by pro-active or planned adaptation. The issue being addressed here is to what extent can we learn from the past and the science about the future to plan in advance to reduce those adverse impacts when they occur (acknowledging that adaptation cannot reduce adverse impacts to zero)?

There are generally two types of potential future impacts of climate change that are considered to require action (while acknowledging that there are also likely to be some benefits from climate change in some places for some communities, I am going to deal with the adverse impacts only). These are *climatic hazards* such as floods, droughts and hurricanes which are likely to become more frequent or more severe (or both) and *slow-onset hazards* such as increasing salinity in low lying coasts and eventual inundation due to sea level rise.

Dealing with the first kind of climate hazards is not new, either at national or global level. Floods, droughts and hurricanes are well known phenomena which affect many parts of the world. However, preparing for the increased frequency and/or increased magnitude of events is something we have only just started to think about (both at the global as well as national level). One example is the way that the global disaster management community is geared to respond to events after they occur (e.g. the Tsunami in the Indian Ocean or the more recent earthquake in Haiti) but are not at all well prepared in advance of the events. The paradigm shift that is needed is to move away from the current reactive mode to a more pro-active mode

or from disaster management (post disaster) to disaster preparedness (or disaster risk reduction). Such problems also occur at national level with Hurricane Katrina in the United States providing a stark example of the richest and most technologically advanced country in the world failing to protect the lives of some of its poorest and most vulnerable citizens in the ninth Ward of New Orleans.

On the other hand some of the poorest and most vulnerable countries have shown that taking pro-active measures can indeed reduce adverse impacts significantly. I will give one example from Bangladesh which was hit by a devastating cyclone in 1991 which killed over 100,000 people. Nearly two decades later in 2007 Cyclone Sidr, of similar magnitude, hit the country and only 3,000 or so people died (mostly fishermen on boats who could not get back to land) with over 2 million people successfully evacuated to cyclone shelters. This can be attributed largely to an extensive programme of building cyclone shelters around the entire coast, combined with developing strong early warning systems (including both the technical aspects of weather tracking and public outreach using Red Crescent and NGO volunteers as well as education in schools, etc) in the last decade. In contrast, another cyclone (Cyclone Nargis) that hit the neighbouring country of Myanmar (formerly Burma) a few months later, killed over 140,000 people - mainly due to the lack of any kind of preparation by the government. It should be noted that although the loss of human lives was reduced in Bangladesh from Cyclone Sidr, there was nevertheless a great deal of loss to infrastructure and the economy (so losses were not reduced to zero) and that the measures that were taken were not done for climate change reasons.

Thus, adapting to well known climatic hazards such as cyclones, droughts and floods are a good place to start to include adaptation to climate change but the two are not the same. Adaptation to climate change (ACC) includes longer-term, possibly slow-onset hazards which are not always included in run-of-the mill disaster management, or what might be termed adaptation to climate variability (ACV).

Adaptation *in situ* vs planned re-location (or assisted migration)

For the early years of adaptation studies it was assumed that adaptation to climate change was about assisting communities to continue (as best they could) to live their lives and earn their livelihoods without having to move. This might be termed adaptation *in situ*. It was thus assumed that adaptation to climate change (unlike

mitigation) was a local (or national) phenomenon, and not a global (or cross-border) one. However, this is clearly no longer true as some parts of the world (such as some low lying coasts of islands and deltas, drylands in mid-continent and some highlands) are no longer be able to sustain the communities currently living there. These communities will have to be helped to move somewhere else (whether within their own national borders or across international borders if their country itself disappears). While it can be argued that migration has been an age-old human response either to adversity or seeking new opportunities, the climate change-induced need to re-locate is something new in that it is a global responsibility to help those affected communities to re-locate in a planned and assisted manner (otherwise they will migrate anyway in an unplanned manner).

This will require new ways of dealing with migrants (or refugees) both internationally across borders as well within countries, for which we are not well prepared.

Adaptation to climate change vs development

It has been argued by some that adaptation to climate change is just the same as development (or even sustainable development, or more recently climate "resilient development"). While such a case can indeed be made, I will argue that adaptation to climate change will require some new attributes that have not (so far) been associated with traditional development. The first is the need to be science-oriented. Climate change impacts are still only vaguely known within the scientific community and our knowledge of such impacts (at the global as well as national level) will need to grow rapidly over time. Decision makers (whether global or national) will need to be hooked-up with their respective scientific communities in order to be aware of the latest developments in climate science.

Another attribute will be the need to build awareness and capacity on climate change amongst different stakeholders from within as well as outside governments. Indeed the entire next generation of school children and university graduates will need to have some level of climate literacy.

Bottom-up vs top-down (globally and nationally)

Until recently adaptation to climate change has been seen largely as a global issue, emanating from the scientific community (such as the IPCC) and global policy-making (such as the UNFCCC). However, more recently some governments have

started to take action at a national level. At the same time many actors working at community level are also taking action. It is interesting to note that such actions are taking place first in the poorest countries and communities. Thus, for example, the first countries to produce their National Adaptation Plans of Action (NAPAs) were the forty-eight least developed countries (LDCs).

These were carried out in a quick-and-dirty manner to use existing scientific information on potential impacts of climate change within those countries, develop adaptation actions through a participatory manner and prioritise those actions. Some of the countries have moved on to implementing some of the adaptation actions identified in their respective NAPAs. While far from perfect as scientific and technical exercises, the NAPAs enabled the LDCs to develop their knowledge and capacities on climate change and work out the inter-institutional aspects of decision-making, which are mostly the same in all countries, whether rich or poor.

Thus now that the richer countries are beginning to develop their own adaptation plans, and are able to bring much greater amounts of financial and intellectual resources to bear, nevertheless they could learn much from the efforts of the poorest countries as many of the institutional problems are the same.

In a similar vein many actors working with some of the poorest and most vulnerable communities in the developing world have also been developing actions (now called Community Based Adaptation or CBA) and have been sharing their experiences and learning through a series of international conferences on CBA held over the last few years.

Again many decision-makers at national and global level can learn much from these actors working at the grass-roots on how to inform and empower people to make their own decisions about their own futures.

Conclusions

The last few examples cited above enable us to think of a new paradigm of learning and decision-making on adaptation to climate change at global as well as national levels, where the rich (countries and people) can learn from the poor (both countries as well as communities).

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