

**The Economics of Adaptation**  
Stern Review Workshop  
9 May 2006

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*Session III: International Dimensions of Adaptation*

Climate change is emerging as a real threat to human security, in developing and developed countries alike, and new approaches to international cooperation on adaptation are needed to address the challenges.

I would like to make five propositions about the way that adaptation is addressed by the international community, taking into account the need to enhance adaptive capacity in developing countries. These propositions emerge from the research that I have been doing with Robin Leichenko on global environmental change in the context of globalization, and they point to the need to consider adaptation to climate change in the context of a world that is undergoing dramatic changes in all realms—economic, social, political, cultural, technological, biophysical, and institutional.

1. *The capacity to adapt to climate change is strongly linked to the capacity to respond to shocks and long-term transformations of any type.* Those who are likely to be negatively affected by market liberalization, disease outbreaks, natural hazards, and other agents of change often have a lower capacity to respond to shocks, change, and uncertainty in general. Climate change reveals the underlying contextual vulnerability that characterizes people and places. Changing the context in which climate change occurs is critical to adaptation, whether in developing or developed countries. This requires addressing the conditions (social, economic, institutional, biophysical, political, cultural, or technological) that increase exposure and limit the capacity to respond effectively.

2. *Adaptive capacity is not static or unidirectional, but instead is continuously changing in response to contextual changes, often driven by shocks or transformations linked to other processes (HIV/AIDS, natural hazards, trade liberalization, privatization of natural resources, etc.).* The capacity to adapt to climate change can be undermined or contradicted by economic or social policies that are unrelated to climate change. For example, the development and distribution of seasonal climate forecasts in Africa and Latin America offers farmers, water managers, and other “users” the possibility of changing production or management strategies in response to forecasted conditions. Yet, changes in market or credit access linked to policies aimed at reducing state budgets may limit the capacity of some individuals to take actions based on the forecasts, leaving them only with information. From a wider perspective, this represents a “left hand – right hand” problem, i.e., “the left hand doesn’t know what the right hand is doing”.

While development policies and projects, as well as poverty reduction strategies, often seek to improve the context in which people live and can thus influence adaptive capacity, they are often counteracted or rendered ineffective by other processes, including climate change and other environmental changes. The potentially increased magnitude and intensity of storms, floods, droughts, and other hazards may change the context for investment, contribute to loss

of assets and infrastructure and result in high mortality. These outcomes can create enormous setbacks for personal and national economies and development, which in turn reduces the capacity to respond to future climate events or changes.

3. *In a globalizing world, thinking of development in terms of a North-South binary may not be the most effective way to focus or target development objectives.* Globalization processes are creating profound changes in all realms of life, with uneven outcomes both among and within countries. The notion of developed versus developing countries is being replaced by the concept of the “global South”, which refers to those people and places that are marginalized, impoverished, or excluded from the benefits associated with human development. This means that adaptation policies should not be targeted at countries, but at groups or communities who are least likely to be able to respond to change, including climate change. An assessment of vulnerable individual or groups – rather than vulnerable countries – is needed to identify those who are most in need of support for climate change adaptation.

Globalization has expanded the linkages between different places – through investment, migration and tourism, media and communication, etc. The connectivity of people and places means that the negative impacts or consequences of climate change are shared more widely than they were thirty or fifty years ago. UK residents with extended families living abroad, UK citizens living abroad, tourists, businesses with foreign direct investments, etc. are likely to feel the impacts and consequences of climate changes in other places, just as the impacts of climate change on the UK will be felt in other places of the world. Issues of mainstreaming climate change need to be considered in all contexts, with development policy being an important but not unique example.

4. *In some situations, adaptation to climate change may create new problems.* One person or group’s adaptation strategy may be another’s vulnerability. For example, building high sea walls to protect against storm surges may influence local ecology and livelihoods. Expanded irrigation schemes to support agriculture may limit water availability for others. Issues of equity and fairness in adaptation are important aspects to consider in any efforts to address adaptation through international cooperation.

Change of any type creates opportunities and benefits for some, and challenges and constraints for others. Indeed, there are likely to be some who benefit from climate change, whether directly from the changes in the biophysical environment, or indirectly from the preparation for change (from new technologies, new constructions, etc.). But changes can also lead to losses, which will be valued differently by different individuals or groups.

5. *There are limits to adaptation as a response to climate change.* These include technological limits; financial limits; informational and cognitive limits; social and cultural limits; and institutional and political limits, which are linked to the rate and magnitude of climate change. The limits are often realized when actual losses occur, directly or indirectly as a result of climate change, and they must be considered in relation to different values and metrics. The loss of one species, for example, may for some be considered a reflection of the limits of adaptation. Furthermore, the capacity to adapt may not always translate into actual adaptations, and there remain many questions surrounding the feasibility, costs, effectiveness, and extent of adaptations to climate change, particularly in relation to potentially high rates and magnitudes of change.

Based on these five propositions, I would argue that climate change adaptation in the 21<sup>st</sup> century requires looking not only at specific measures and strategies, but also at the larger picture – how we are driving processes of change, and influencing the capacity to respond to change. The international dimensions of adaptation extend beyond issues of development, to issues of human security in a rapidly changing world.