



Today's climate-related disasters foreshadow the likely adverse future impacts of climate change, signalling an urgent need to minimize current vulnerabilities. For poor communities living on fragile and degraded urban and rural lands, such as steep hillsides, drylands and floodplains, actions must address the deteriorating environmental conditions that undermine their livelihoods and capacity to cope with disasters. IUCN, IISD, SEI and Intercooperation are working together to strengthen the role of ecosystem management and restoration activities in reducing the vulnerability of poor communities to climate-related disasters and climate change. Protecting and enhancing natural services through activities such as watershed restoration, mangrove reforestation and rangeland rehabilitation, can help these communities secure their livelihoods and improve their capacity for adapting to the impacts of climate change.

In an effort to encourage the use of such activities and their integration into emerging policy frameworks, this series of Information Papers has been developed to highlight success stories from around the world. It is hoped that the lessons learned in these stories will inform ongoing and planned adaptation efforts.

Increasing Community Resilience to Climate-Related Disasters through Sustainable Livelihoods

A Conceptual Framework for Climate Change Adaptation

Introduction: Climate change impacts and vulnerability

In its Third Assessment Report (TAR), the Intergovernmental Panel on Climate Change (IPCC) concluded that the globally-averaged surface temperature increased $0.6 \pm 0.2^\circ\text{C}$ in the 20th century. This trend is expected to persist, with a 1.4 to 5.8°C increase predicted for the current century. Warming will vary by region and be accompanied by significant changes in precipitation, sea level rise, and changes in the frequency and intensity of some extreme events. These changes will affect natural and human systems independently or in combination with other determinants to alter the productivity, diversity and functions of many ecosystems and livelihoods around the world. Yet these impacts will not be distributed or felt uniformly, as those "with the least resources have the least capacity to adapt and are the most vulnerable."¹

The poor are already vulnerable to climate risks. Settlement on marginal or unstable lands such as steep slopes or floodplains heightens their exposure to the impacts of climate hazards. Heavy dependence on ecosystem services can place their welfare and survival at the mercy of environmental conditions. As the availability and quality of natural resources decline due to natural and human-induced pressures, so does the viability and security of their livelihoods. With limited capacities and resources at their disposal to respond to stresses such as droughts and floods, their ability to meet basic needs and move out of poverty is constrained. Climate change, therefore, threatens to exacerbate existing vulnerabilities and further entrench development disparities. Those with the least stand to suffer the most. Thus, with regional changes and impacts already being observed, the need for adaptive response measures is imperative. For the poor and other vulnerable people, the need is urgent.

Responding to climate change: The case for adaptation

From the beginning of climate negotiations, it has been accepted that adaptation has some role to play in reducing vulnerability to climate change. While it has been difficult to define what role adaptation should play in the international negotiations, it has become increasingly apparent that all countries will need to develop thorough and sustainable adaptation strategies if the impacts of climate change are to be effectively addressed. Regardless of successes in negotiating emission reductions, climate change is already occurring and will become an even more serious issue in the future.

Much of the early work on adaptation focused on future climate scenarios using General Circulation Models (GCMs), which helped to identify potential impacts. These models proved to be extremely limited in telling us about regional impacts of climate change. A new generation of research is now addressing the issue by looking at vulnerability and adaptation within the context of current climate change and variability as well as longer-term climate change, since communities who are vulnerable to today's climate stresses will only become more vulnerable as global temperatures rise. It follows then, that adaptation must start with actions that target current vulnerabilities, allowing communities to build more resilient and secure livelihoods that can confront the impacts of climate change.



<http://www.iucn.org>



<http://www.sei.se>



<http://www.iisd.org>



<http://www.intercooperation.ch>

Reducing vulnerability through sustainable livelihoods

If reducing current vulnerabilities is the starting point of adaptation, then poverty reduction is essential to the process, since poverty is both a condition and determinant of vulnerability. Yet poverty reduction requires an understanding of how local livelihoods are conducted and sustained, as the assets and capabilities that comprise peoples' livelihoods often shape poverty and the ability to reduce it. Moreover, by understanding the dynamics of poor people's livelihoods, we can begin to understand how they will be affected by climate change impacts, how they might respond with the resources they have, and how these conditions can be reflected and built upon for successful adaptation strategies.

Given the reliance of the poor on environmental services for their livelihoods, a central element of this adaptation approach should be ecosystem management and restoration activities such as watershed rehabilitation, agroecology and forest landscape restoration. By protecting and enhancing the natural services that support livelihoods, vulnerable communities can maintain local safety nets and expand the range of options for coping with disruptive shocks and



Vietnam Mekong Delta Floods (November 2000).
Photo: Viet Tanh/International Federation of Red Cross and Red Crescent Societies

Inset: Mozambique Floods (March 2001).
Photo: Christopher Black/International Federation of Red Cross and Red Crescent Societies

trends. Thus, restoring mangroves along the cyclone-battered coasts of Vietnam, for example, not only restores degraded ecosystems and increases physical protection against storms, but also boosts aquaculture production, which generates much-needed income for local communities. This combination of a secured natural resource base, reduced exposure to natural hazards and diversified livelihood activities has increased resilience to future threats, including climate change. In fact, this sustainable livelihoods approach to adaptation has the advantage of meeting immediate development needs while contributing to longer-term capacity development that will create a basis for reducing future vulnerabilities.

Promoting a livelihoods approach to adaptation: Disciplinary and institutional synergies

Developing a strategic framework for this livelihoods approach to adaptation calls for the convergence of four distinct communities, each of whom has long been tackling the issue of vulnerability reduction through their respective activities: disaster risk reduction; climate and climate change; environmental management; and poverty reduction. Drawing from their respective project portfolios and years of lessons learned, these communities now have the opportunity to jointly explore and strengthen synergies that promote climate change adaptation. IUCN, IISD, SEI-B, and Intercooperation are working together to identify and operationalize these synergies, particularly those involving ecosystem management and restoration activities, and promote their integration into emerging policy frameworks.



Vietnam Mekong Delta Floods (November 2000).
Photo: Viet Tanh/International Federation of Red Cross and Red Crescent Societies

