

Climate Change and Adaptation: Summary

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1.0 Introduction

1. Adaptation to the impacts of climate change is emerging as a critical concern for countries in all regions of the world. The on-going rise in global temperatures has profound implications for the productivity, diversity and function of many ecosystems, and for the economies, livelihoods and cultures they support.¹ Changes are already being experienced (ACIC 2004; IPCC 2001) and increasingly will affect human health and safety, social relations, cultural integrity and economic development.² The burden of these impacts will be felt most heavily by poorer societies with weaker social, health and economic support systems. They will likely hinder the ability of developing countries to achieve and maintain the targets set out in the Millennium Development Goals.
2. Growing recognition of the immediate and long-term implications of climate change for sustainable development has spurred greater discussion and action regarding adaptation at the national and international level. The prominence of efforts to cope with and adapt to the impacts of climate change is expected to grow in the future. Adaptation will be a critical component of any international regime established under the United Nations Framework Convention on Climate Change (UNFCCC) after 2012. It is already the priority concern of many developing countries, particularly Small Island Developing States (SIDS) and Least Developed Countries (LDCs), and is increasingly an issue for developed countries.
3. The international community is only beginning to understand how to effectively respond to the complex socio-economic and environmental impacts resulting from climate change. Although there is growing awareness of the need to integrate adaptation considerations into sustainable development policy- and decision-making processes, there is little experience with ways to achieve this objective. Adapting to human-induced climate change is a new process for all countries, developed and developing, and there is great scope for learning together and sharing experiences.
4. As the impacts of climate change are increasingly felt, there is an immediate need to enhance efforts to integrate adaptation into core policy-making. Doing so requires mobilizing the full range of resources within and outside of the UNFCCC process and the “climate change community.” At the same time, a long-term strategy for adapting to climate change needs to be developed. Identification of options for the post-2012 period is just beginning, and efforts to enhance international understanding of how to move forward on adaptation are needed.
5. As the international community moves forward on adaptation to climate change, key issues include:
 - How to support integration of adaptation considerations into mainstream projects, plans, policies and sustainable development strategies at the local, sectoral, national and international level, including:
 - How to develop, test and share the knowledge, tools and technologies required to increase capacity to adapt to climate change; and
 - How to obtain and expand the financial resources required to support adaptation efforts;
 - How to address the special needs and concerns of developing countries; and
 - Determination of how to address adaptation to climate change in an integrated manner under a post-2012 climate change agreement.

¹ Even at modest levels of global warming, by 2080, it is predicted that tens of millions of people worldwide will be put at additional risk of experiencing hunger and coastal flooding, hundreds of millions of experiencing malaria, and billions of people of experiencing water shortage (Parry *et al* 2001).

² For example, Swiss Re predicts that the economic costs of natural disasters could double to US\$150 billion a year in 10 years, hitting insurers with US\$30-40 billion in claims (Atkins 2004).

2.0 An Integrated Approach to Adaptation

6. While global climate models are helpful in predicting long-term climatic changes at the regional and global level, they do not provide local policy-makers with the information needed to develop appropriate policy responses (Klein 2004). In contrast, a bottom-up approach driven by the need to address current vulnerabilities is more suited to developing near-term adaptation strategies (UNFCCC 2004). An integrated approach that weaves adaptation into decision-making expands the range of opportunities for reducing vulnerability to climate change and addressing impacts more efficiently (OECD 2005; EC 2005).
7. **At the local, sectoral, national and international level** there are numerous opportunities for integrating adaptation considerations into mainstream development strategies, including: emergency preparedness programs; watershed management plans; community health and social services; business management plans; national economic planning and budgetary processes; donor assistance strategies; World Bank Country Assistance Strategies; World Trade Organization decisions; and the Millennium Development Goals. However, few policies in developed or developing countries currently reflect the need to respond to and prepare for the impacts of climate change (EC 2005). Targeted strategies are needed to better ensure that decisions and investments made today do not reduce the ability of communities, economic sectors and governments to adapt to future climatic changes.
8. **The knowledge, tools and technology** needed to support implementation of targeted adaptation strategies are in the early stages of development. Increased awareness and knowledge of the implications of climate change, particularly among policy-makers and influencers, is “an immediate and continuous challenge” (EC 2005). To act upon this knowledge, an expanded array of tools and technology appropriate to local circumstances are required.³ Tools are particularly needed to understand the economic implications of climate change impacts and to monitor and evaluate adaptation strategies and practices. There is also a clear need for the exchange of knowledge, tools and technologies between countries, along with enhanced local research, data collection and capacity. Although adaptation must be tailored to national circumstances, common factors such as geography and a shared interest in tools, information products or technologies provide the basis for international cooperation (Willems 2005).
9. **Financing adaptation efforts** is a critical concern for all countries. Billions of dollars will be needed to implement vulnerability reduction activities and address the immediate affects of climate change, such as more frequent and intense extreme weather events.⁴ Integration of adaptation considerations into existing financial arrangements, such as national budgeting processes, bilateral and multilateral development funding, private sector investments, and insurance sector activities, can serve to leverage the funding required. Incorporating adaptation to climate change into routine risk management strategies can help ensure that investments made today, particularly in long-term initiatives such as infrastructure development projects, do not increase vulnerability or compromise the ability of people to adapt in the future. At the same time, the financial sector, insurance industry and international financial institutions have a role to play in providing the capital needed to reduce the impacts of extreme weather events. Insurance can lessen the financial burden of impacts at various levels,⁵ while alternative risk transfer instruments (e.g., weather derivatives, weather hedging and catastrophe bonds) can reduce financial exposure to climate change impacts.

³ Tools and technologies are needed to: understand current risk and coping strategies; estimate future risks and impacts; review policies, programs and projects to assess if they will be affected by climate change, contribute to maladaptation and/or support capacity to adapt to climate change; identify appropriate reform measures and investment options; implement adaptation strategies; and monitor and evaluate efforts.

⁴ For example, by the 2080s, estimated insured losses from extreme weather events could rise by: around three-quarters to a total of US\$100- to US\$150-billion for extreme US hurricanes; and two-thirds to \$25- to \$34-billion for wind-related damages caused by extreme Japanese typhoons (ABI 2005).

⁵ Examples include: public-private partnerships, national and regional catastrophe insurance schemes, below-market rate reinsurance cover and micro-insurance.

3.0 Supporting the Needs of Developing Countries

10. Developing countries, with their greater vulnerability to climate change impacts—some of which are already being experienced—have particular concerns with respect to financing and building their capacity to adapt (IPCC 2001). Reflecting obligations under the UNFCCC,⁶ the three Marrakesh Funds—the UNFCCC’s Least Developed Countries Fund (LDCF) and Special Climate Change Fund (SCCF), and the Kyoto Protocol’s Adaptation Fund (AF)—have been established to help address these needs. Although important, these funds are insufficient to meet developing country needs.⁷ Long-term, firm and regular financial commitments under the UNFCCC are needed to ensure the viability of these funds and continued support of adaptation in developing countries (ICCTF 2005). It will also be important to learn from the LDCF and SCCF experience to date when designing the AF, and to ensure that activities supported by the Marrakesh Funds complement each other as well as bilaterally- and nationally-funded climate change adaptation efforts.
11. Bilateral and multilateral development agencies, as well as non-governmental development organizations, must play a greater role reducing the vulnerability of developing countries to climate change. Integration of adaptation into the regular budgetary, policy, program and project level work of these agencies would reduce their exposure to climate change risk and allow them to take advantage of potential synergies. These potential synergies would allow for more effective use of the limited financial resources that exist. It needs to be recognized that voluntary contributions to the Marrakesh Funds and funding for bilateral and multilateral projects and programs all draw from the same resource base. New and additional resources are required to boost contributions to the Marrakesh Funds and support integration of adaptation into mainstream development planning, accompanied by the efficient, synergistic use of resources.

4.0 Looking Beyond 2012

12. Any future international climate regime will need to address adaptation more prominently than in the past, reflecting the growing urgency to prepare for and respond to the impacts of climate change. Such a regime will likely reflect the importance of a vulnerability-based, integrated approach that incorporates adaptation considerations into mainstream policy- and decision-making processes. A critical issue for Parties is to determine the role of the UNFCCC in supporting an integrated approach to adaptation in the period after 2012. What role (if any) should the UNFCCC play in supporting the integration of adaptation concerns into (for example): national or sectoral policies and decisions; private sector strategies, management plans and investments; and other multilateral processes such as the other Rio Conventions, and the work of the World Health Organization and the World Trade Organization?
13. One broad approach for addressing adaptation under the UNFCCC is to treat it as a cross-cutting theme; another is to treat it as a stand-alone issue. A cross-cutting approach within the UNFCCC would interweave the need to adapt to the impacts of climate change into the design of future commitments, research, capacity building, technology transfer and support for sustainable development more generally (EU 2004). If pursued as a stand-alone issue, adaptation would be addressed through a separate stream of negotiation. Existing post-2012 proposals for the stand-alone approach include: addressing adaptation in a separate track of activity funded by industrialized countries that builds upon the Marrakesh Funds (CAN 2003); taking a more comprehensive approach in which Annex I Parties fund and support capacity building activities in developing countries, GEF rules are modified to make it easier to pursue adaptation projects, and innovative insurance schemes are piloted (Ott *et al* 2004); and the establishment of a separate Adaptation Protocol designed to secure the transfer of funds and technology to vulnerable countries and support measures that increase their capacity to adapt to climate change while moving recipient countries onto a low-emission development path

⁶ These obligations are set out in Articles 4.2, 4.3, 4.4, 4.5, 4.8 and 4.9 of the UNFCCC.

⁷ To date, voluntary contributions to the LDCF have totalled US\$42.8-million and US\$39.8-million has been provided to the SCCF. A total of US\$50-million has been allocated to the GEF pilot Strategic Priority for Adaptation (GEF 2004). The level of financial resources to be provided through the AF is presently uncertain as funding is to be derived in part from a two per cent levy on the sale of certified emission reductions.

(Torvanger *et al* 2005). Given the scale of the resources needed to support adaptation in developing and developed countries, adaptation should be addressed within the UNFCCC process as well as through other opportunities such as bilateral and multilateral development agencies, the private sector and international financial institutions.

14. Elements of a post-2012 regime that will support an integrated approach to adaptation could include:
 - *Financial instruments for supporting adaptation in developing countries.* Future financing of adaptation could be provided through voluntary contributions (as with the Marrakesh Funds). However, mandatory contributions based on criteria such as historical emissions, ability/capacity to pay, or per capita emission levels are more likely to generate firm and regular financial resources at the high levels needed. Financing also could be provided through the establishment of agreed upon levies⁸ or be leveraged from various insurance and risk transfer instruments.
 - *Support for national-level activities.* These activities could range from efforts that build knowledge to the transfer of technologies for adaptation to the implementation of concrete projects that reduce vulnerability and respond to immediate impacts.⁹ The implementation of actual projects will most effectively be achieved when integrated with other planning and development instruments.
 - *UNFCCC-led activities that support all Parties in their efforts to adapt to climate change.* The UNFCCC could play a stronger role in further knowledge sharing and communication, such as by serving as a one-stop information clearinghouse or as a knowledge broker.¹⁰
15. Few concrete proposals have been put forward for how adaptation could be addressed in the post-2012 period (Bodansky *et al* 2004). In part this situation reflects the international community's current lack of practical experience in implementing adaptation strategies. Further research is needed to identify appropriate options within existing and new frameworks for addressing adaptation in a post-2012 climate regime.

5.0 Moving Forward

16. Adaptation to climate change is an immediate and long-term concern that could be addressed by enhancing consistency between climate change and development policies within and outside of the UNFCCC regime (Agrawala 2004; Burton and van Aalst 2004; OECD 2005). This policy coherence would: enhance the ability of countries to reduce their exposure to the risks associated with the impacts of climate change; improve their capacity to adapt to changes, and particularly those changes felt by the poor; and increase the efficiency and effectiveness of adaptation efforts.
17. Integration of adaptation considerations into policy- and decision-making is a process that can begin now, to build up a needed base of experience and address current needs, while looking ahead to a post-2012 regime that more comprehensively addresses adaptation. In moving forward on this agenda, strategies are needed to ensure the development, deployment and diffusion of the knowledge, tools and technologies to support efforts to adapt to a changing climate—and to share information, practices and lessons between countries. Parties to the UNFCCC will also need to engage potential partners in the private sector, financial sector, international financial institutions, and others to leverage the substantial financial resources required to

⁸ For example, it has been suggested that a Climate Change Insurance Fund be introduced to cover the restorative costs associated with climate change. This Fund would be financed through a levy on fossil fuel sales in Annex I countries and contributions from governments, insurance funds and high emitting industries (Government of Tuvalu 2005).

⁹ Examples of possible activities include: the development, deployment and diffusion of technologies for adaptation; building institutional capacity; raising awareness among decision-makers, the private sector and the public; demonstration projects; monitoring and evaluation of adaptation activities; socio-economic analysis of projected impacts; risk reduction measures; relocation assistance for vulnerable communities and infrastructure; coastal zone protection; crop substitution; watershed management projects, catastrophic insurance and risk pooling schemes, micro-insurance initiatives; and the development of targeted tools and projects that specifically target vulnerable communities.

¹⁰ The establishment of a Vulnerability Assessment Clearinghouse, for example, has been suggested (Government of Tuvalu 2005).

support adaptation to climate change. Particular efforts will be needed to develop mechanisms that provide developing countries with the necessary financial resources to address their greater vulnerability to the impacts of climate change. Firm and regular financial contributions to the existing Marrakesh Funds are needed, along with an enhanced role for bilateral and multilateral development agencies in supporting adaptation activities that maximize opportunities for synergies and ensure effective use of financial resources. In parallel with these efforts, more research and improved knowledge-sharing are needed to better understand how the UNFCCC can support an integrated approach to climate change adaptation after 2012.

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