Foreword

Scientific projections are necessarily subject to scientific questioning and climate change is no exception. There are sceptics who question whether available data, including the fact that 11 of the 12 years from 1995 to 2006 rank among the 12 warmest years since 1850, really establish a long-term trend. That said, the ranks of sceptics are thinning and the dominant opinion is moving inexorably towards an acceptance of, and consequent concern with, climate change as a very real phenomenon.

The leading international body for the assessment of climate change, established by the United Nations Environment Programme and the World Meteorological Organization, is the Intergovernmental Panel on Climate Change (IPCC). The IPCC projects that the Earth’s surface temperature could rise by an additional 1.8–4°C by the end of this century and that the sea level could rise by 18–59 cm. These changes will lead to a dramatic increase in the scale and frequency of major climate events such as floods, droughts, hurricanes and higher storm surges, all of which will have devastating consequences for the people impacted. Recent examples of destruction caused by such extreme events are the flash floods in Uttarakhand, India in 2013 and Hurricane Sandy in the USA in 2012. They may or may not be evidence that climate change is underway but certainly demonstrate the enormous loss that can be inflicted on human life and economic value.

These considerations suggest that it is necessary to take bold and comprehensive steps to deal with this challenge. The world must react to the challenge in two ways: it must take steps to mitigate carbon emissions and thus reduce the extent of climate change and it must take steps to adapt to such climate change as is unavoidable. The pursuit of mitigation strategies runs into the problem of externality. The benefits of mitigation action are not restricted to the country that takes mitigation steps. They extend to the whole world, and in the face of this externality, it is well established that individual countries will do much less than they should. A successful mitigation strategy therefore requires international cooperation in which all countries join collectively. For this to happen, the burden of mitigation has to be equitably distributed across all countries. The ongoing United Nations Framework Convention on Climate Change (UNFCCC) negotiations were expected to come up with an international agreement on a fair
distribution of the burden of the costs of mitigation. It is unfortunate that very little progress has been made thus far. Developing countries argue that since it is the industrialized countries that are responsible for the historical accumulation of greenhouse gases, and also since they are economically stronger, they must bear the principal burden. The world has yet to agree on what is a fair outcome and pending that there is no agreement on mitigation.

Unlike mitigation, which involves externality, adaptation does not. The benefits of adaptation actions accrue to the country taking them and it is therefore important to define adaptation strategies that should be followed, given that some climate change seems unavoidable. This book provides a timely and thoughtful discussion of strategies for adaptation to climate change, which can complement mitigation strategies being developed by other experts throughout the world, to reduce the risk of disaster.

The book focuses on eight countries in Asia, which together are home to 2.8 billion people, about 40 per cent of the world’s population. They are among the areas that will experience the most severe impact of climate change and many are extremely vulnerable in terms of capacity to cope with the impact. These territories have very diverse geographies (extensive coastlines, deserts, mountains and megacities), demographics (population ranging from less than ten million to over a billion) and economics (variation in size of the economy as well as per capita income).

This diversity provides the authors with an opportunity to discuss adaptation strategies for many of the urgent and critical threats expected to be faced by sectors that are most impacted by climate change. Their conclusions are relevant beyond the individual countries analysed. Specifically, they discuss the challenges for large cities due to water scarcity, flooding, sea level rise and heat island effect; the dangers to biodiversity due to degradation of fragile environments; the devastating implications for human health due to rise in diseases such as malaria, dengue, cholera and diarrhoea; the potential large-scale food shortages due to rural water scarcity, declining agricultural yields and disruption of food imports; and the migration of large numbers due to disruption of livelihoods in rural areas.

The authors discuss adaptation strategies for each of these significant threats. They highlight plans that have been successful and explore what else can be done to address the gaps. Their observations and recommendations should prove very useful to policy makers in other countries facing similar threats who are focusing on building their adaptive capacity to cope with climate change. An important point made in this volume is that though effective policies and systems at a national level are critical to meet the challenges faced by a country, these must be complemented at the local level by the private sector, local government and civil society. The success,
or otherwise, of the strategies highlighted in this book have lessons for key constituencies at all levels and for how to achieve coordination among them.

The authors recognize the trade-offs inherent in the desire for economic growth now versus the need to invest in building adaptive capacity for the future, and urge the governments to actively engage in careful evaluation of those trade-offs. Their research highlights where such trade-offs have been most successful and offer lessons for national and local decision makers. They also stress the need for action now, for leveraging technology and for continuing an iterative process of research, action and monitoring to refine and develop enhanced strategies. These recommendations can inform the agendas for research institutes and government agencies that plan and implement adaptation strategies.

The authors in this book have been deeply engaged in the area of the environment, energy and climate change, as academics at leading universities and as members of research institutes or government bodies, and they draw on their enormous knowledge and experience to present valuable discussion of adaptation to climate change in Asia.

An aspect that is not specifically quantified is the cost of adaptation. Many of the measures proposed will involve significant costs. As long as the costs are less than the cost of not adapting, there is an economic case for undertaking adaptation but this does involve a draft on available resources. To the extent to which this burden is being imposed on developing countries because of action predominantly taken by industrialized countries over a long period, there is a moral case for the industrialized countries sharing this burden, especially from low incomes countries. As in the case of mitigation, this is one of the items on the agenda of the UNFCCC negotiations, and is effectively mired with all the others. Nonetheless, as the authors emphasize, this is the time for action on many fronts and I urge the policy makers to give serious attention to the strategies presented in this book.

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