



CHAPTER 5
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There are differences among and within South Asian countries in the ability to adapt to the impacts of climate change. The capacity to adapt to climate change depends on a wide range of factors that include social, economic, and political dimensions. How these factors interact differs between and within countries and determines vulnerabilities and coping capacities. Within any sector or social group, some may be more vulnerable than others depending on their economic status and exposure to likely climate risks. Reflecting the diverse nature of the challenge, chapter 5 addresses activities in key sectors ranging from agriculture, biodiversity, energy, transport, urban development, and water to social development. It recognizes that a changing climate affects development through many lenses and an effective response must combine both mitigation and adaptation. This document advocates an integrated approach to address the impact of climate change on agriculture, ecological resources, health, infrastructure, livelihoods, and natural disasters. South Asia's heavy reliance on agriculture provides an important lesson. The impact of climate change on agriculture cannot be decoupled from water resources, floods, drought, and economic structure. These interact in ways that determine vulnerabilities, impacts and adaptation

opportunities. The subsequent chapters identify the many cross-sectoral and regional linkages.

Chapter 6 on the impact of climate change on water tackles the fundamental challenge to balance more variable water supplies with accelerating water demands. The potential adverse impacts of climate change could be alleviated through enhanced cooperation and dialogue between and within regional countries. India and Bangladesh have 54 transnational rivers. Many important tributaries originate in Nepal, Bhutan, and China and supply water to Bangladesh, India, and Pakistan. Although there are agreements between some countries in the South Asia region, further regional cooperation will be required to address these future climate challenges.

Chapter 7 highlights the urgency for implementing measures that are needed to revive agricultural growth in the region and address rural poverty. With their economies closely tied to the natural resource base and climate-sensitive sectors such as agriculture, South Asian countries are expected to suffer significant losses from climate change. In this context, the impact of climate change on agriculture is an issue of great significance to the lives of millions of poor people in South Asia who depend on agriculture.

⁴² Suresh Ramalingam and Richard Damania.

Chapter 8 articulates the risks from and responses to natural disasters, to which South Asia is highly vulnerable. Many of the impacts associated with climate change alter the risk profile of existing hazards, such as floods, droughts, cyclones, and other extreme weather-related events. Adaptation measures can benefit from the practical experience in disaster management. When dealing with climate-change risks, it is important to recognize the existing vulnerability to climate variability. Enhancing the ability of local communities to manage current natural hazard risks will help improve their capacity to prepare for and respond to future climatic changes. In this context, the disaster-risk-mitigation and climate-adaptation agendas require an integrated approach.

Chapter 9 provides a broad qualitative overview of the relationship between climate change and human health, which are complex and difficult to assess. In South Asia, heat waves, flooding, and increased intensity of tropical storm surges all pose threats to human well-being and health. Possibly the greatest health impacts could be those associated with population dislocation and displacement. People displaced internally or across borders are vulnerable to disease.

Chapter 10 highlights the social dimensions of climate change. In natural disasters, female mortality vastly exceeds that of males. Indigenous people, with their dependence on forests and natural resources, are also particularly sensitive to climate variations. The rural poor whose livelihoods are based on agriculture are another group that will be directly impacted by climate change. Chapter argues that climate change could exacerbate prevailing disparities unless the root causes of the problems are addressed. Effective adaptation strategies would need to address these fundamental disparities.

Chapter 11 looks into how climate change will increase the damage from current risks and present new challenges to the sustainability of ecosystems and their services. The region's

natural resource base is currently facing tremendous pressure from rapid population and economic growth. The chapter suggests that better environmental stewardship can help build greater resilience to future climate risks and also assist with stabilizing emissions.

Chapter 12 draws attention to the opportunities for harnessing low-carbon growth in the region by addressing substantial loss of energy due to poor transmission infrastructure and inefficiencies in power generation. Rising energy demand is driven by urbanization, industrialization, and prosperity, all of which are parts of a broader process of development that is lifting millions out of poverty. However, increased energy consumption has been accompanied by rising GHG emissions. The energy that does not have to be generated due to loss reduction or efficiency gains is attractive from both the cost and the climate-change standpoints. Chapter 12 suggests that there is a need for more active and extensive interventions to tilt the balance in favor of cleaner technologies.

Chapter 13 explores the policy measures and initiatives needed to address the impending increase in transport carbon emissions. While the transport sector has been a relatively small contributor to South Asia's CO₂ emissions, the rapid pace of urbanization and likely acceleration of motorization trends present a threat to mitigation efforts in the future.

Chapter 14 investigates the vulnerability of cities to climate change and their contribution to GHG emissions. It suggests that the threats are likely to grow as cities expand in a largely unplanned manner. In general the concentration of people and assets in cities increases its vulnerability to climate change. But South Asian cities are uniquely vulnerable to climate-change impacts. This is due to a combination of nonclimatic and climatic risks. Factors such as high levels of urbanization and concentration of poor people and poor infrastructure increase the vulnerability of South Asian cities.