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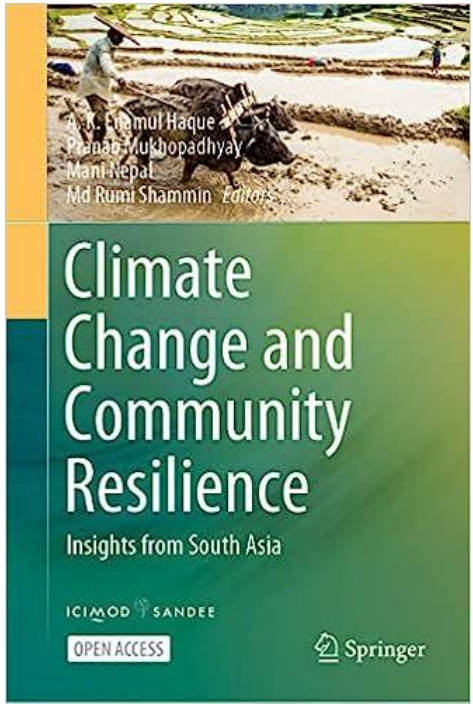
BOOK REVIEW

The Challenges of Climate Change and Community Resilience

M. N. Murty*

A.K. Enamul Haque, Pranab Mukhopadhyay, Mani Nepal, and Md Rumi Shammin, (Editors). 2022. *Climate Change and Community Resilience: Insights from South Asia*. Singapore: Springer Nature.



This timely and important edited volume is dedicated to Professor Karal-Goran Maler (1939–2020), who, along with Professor Sir Partha Dasgupta of Cambridge University, founded the South Asian Network for Development and Environmental Economics (SANDEE). The volume consists of 29 chapters organized into 8 thematic sections, featuring contributions from 70–odd authors affiliated with SANDEE. Their scholarly focus is on exploring how various communities belonging to rural and urban ecosystems in South Asia attempt to tackle climate change challenges by developing long-term resilience

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capacities.

As is now well-documented, climate change has dramatically altered and stressed a wide range of ecosystems. The global rise in average temperatures has led to unprecedented glacial melt, a rise in sea levels, a steep increase in cyclones, and changes in rainfall patterns. Communities across the world are exploring adaptation and mitigation strategies to minimise losses in the short and long run, respectively. Moreover, given the sheer scale and rapidity with which extreme weather events have begun to impact livelihoods and threaten the subsistence of a vast number of communities, there is an urgent need for studies that can take stock of the challenges and explore adaptation strategies and coping responses.

In addressing these issues, the volume under review attempts to discuss how community-based resilience strategies are being implemented in parts of South Asia. The volume emphasises the community-based adaptation (CBA) strategies that appear to be evolving are bottom-up, participatory, and place-specific, and aimed at taking care of the needs of community members.

The essays, in particular, take up the study of CBA strategies in both rural and urban ecosystems. Several elements of the CBA—such as traditional knowledge and technological options for adaptation and coping with disasters—are subjected to scrutiny across the volume. Alternative livelihood options for rural communities are also discussed, along with a careful assessment of institutional or government support for assisting communities to achieve resilience capacities.

The essays also point out that field-based studies can unequivocally confirm that rainfall patterns are indeed changing and have begun to affect rural communities in several South Asian countries. Given such increasing uncertainties, communities are being forced to figure out strategies to adapt to recurring flooding or water scarcity. In several instances such as in Bhutan, farmers have shifted from maize to rice and then from modern to traditional varieties of rice. Similarly, farmers in Pakistan have chosen to elevate their houses in order to keep stored foods safe from the growing number of flood shocks. In the south Indian state of Kerala, local communities have repaired damaged bunds, worked on restoring soil quality, and developed wider supply networks to achieve resilience and ensure that they still have access to much-needed farm inputs during periods of extreme flooding. In other parts of South India, on the other hand, wells have been deepened to cope with water scarcity. In Nepal, farmers in the mountainous zones are actively involved in building rainwater harvesting structures besides also changing their crop mix from

water-intensive, traditional cereal crops to vegetables. In Sri Lanka, it is noted that small-tank cascading systems containing several types of tanks have now become critical to consolidating local resilience. These tanks appear to provide direct and indirect agricultural benefits such as water for irrigation, fisheries, and livestock; flood prevention; and control of soil erosion.

The volume includes several case studies on the theme of indigenous technologies for CBA. In Bangladesh, floating agriculture contributes to farmers' resilience against water logging and floods. *Bandallings*, a traditional structure made of locally available wood, are frequently deployed to protect river banks from erosion. Some studies indicate that the increased uptake of solar energy, forest conservation efforts, and the provision of the option of Liquefied Petroleum Gas (LPG) for cooking in India and Bangladesh have contributed to the significant reduction in CO_2 emissions.

Many South Asian countries, the volume informs, are working towards developing more robust institutions to manage climate change–related disasters like cyclones, storm surges, and floods. In Bangladesh, for instance, there are several government and NGO initiatives for coordinating efforts at national, subnational, and local levels for disaster management. Similar initiatives are present in other countries, including India. One of the essays points out that in the bid to reduce storm damage in coastal areas in India, the role of mangroves has come in for new appreciation. Mangroves often blunt the impact of strong winds and thereby help reduce the loss of life and property in coastal zones that regularly face cyclones. In view of these benefits, the government should provide incentives to coastal communities for the conservation of mangroves and avoid turning them into shrimp farms for commercial profits or deforesting them for fuel wood. In an essay on the broader theme of disaster risk reduction, Saudami Das (chapter 17), estimates that a mangrove forest of one-kilometre width in the study area could save as much as ₹ 3,339,166 for the economy and ₹ 3,968 from reduced liability to the government.

In the urban context, several efforts to achieve CBA have aimed at the eco-friendly management of solid waste, urban sewage, and drainage. Studies on urban waste management in Nepal show that providing randomized intervention for information and sensitization on waste management resulted in cleaner neighbourhoods. Household surveys show that people are willing to pay more for better solid waste management. In Bangladesh, women are at the centre of waste management in a typical urban household. Muntaha, Nabila, and Haque's case study (chapter 24) shows how women's

awareness about segregating waste at home results in the better management of city waste and thereby helps avoid water logging. In another study on India, Sharma, Brahmbhatt, and Panchal (chapter 22) highlight the role of participatory and decentralized institutions to show how urban poor and women from low-income households can be mobilized for climate change actions through the creation of community action groups (CAGs).

Due to acute drinking water shortages caused by the drying up of natural springs—which has been attributed to climate change—several conservation efforts in the Himalayan towns of Nepal have focussed on upstream dwellers (water service providers) who can improve the drinking water supply for downstream dwellers (water users). A voluntary agreement between water service users and water providers for the payment of conservation efforts of providers (payment for ecosystem services) could ensure regular water supply to the urban dwellers downstream.

Finally, the book discusses alternative livelihood options for the communities of South Asia's climate change–affected rural ecosystems. For example, in Bhutan, community tourism benefits have been shown to help rural households when agriculture and other income sources are affected by climate change.

In sum, this edited volume provides valuable and instructive case studies to help us understand and take stock of the growing challenges that climate change impacts have brought about in South Asia. The essays, which are mostly fieldwork–based studies, are empirically rich and provide compelling ground–level evidence. They enable us to debate and discuss the various complexities involved in studying resilience. This edited collection will be useful to students, interdisciplinary researchers, policymakers, and those interested in the climate change debate in South Asia.

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