

Preface

North America and the Caribbean are affected by extreme weather and climate change at a variety of scales and within the context of an even greater diversity of geographies, ecologies and institutions. Whereas droughts affect the western part of the USA and Canada, the eastern portion of the continent is particularly prone to flooding and sea-level rise. Even in the Caribbean, where tropical cyclones have been the primary risk factor for generations, a persistent drought is leading to severe ecological stresses that are driving unprecedented transformations in economy and society.

According to the Fifth Assessment Report (AR5) produced by the Intergovernmental Panel on Climate Change (IPCC), recent climate variations and individual extreme events demonstrate both impacts of climate-related stresses and the vulnerabilities of exposed systems. Many climate stresses that carry risk—particularly related to severe heat, heavy precipitation and declining snowpack—will increase in frequency and/or severity in North America in the coming decades. AR5 also states that current and future climate-related drivers of risk for small islands during the twenty-first century, such as those in the Caribbean region, will include sea-level rise (SLR), tropical and extratropical cyclones, increasing air and sea surface temperatures, and changing rainfall patterns. In addition, these patterns are likely to persist in some of the most advanced urban environments in the world, including Miami, Washington, D.C., New York and Boston.

Among other things, AR5 states that adaptation to climate change generates greater benefits when delivered in conjunction with other development activities, such as disaster risk reduction and community-based approaches to development. Whether it is a sparsely populated Caribbean island or a major continental urban region, adaptation processes are increasingly be recognized as critical steps where conventional modes of consumption, production and risk mitigation are unsustainable. The above state of affairs illustrates the need for a better understanding of how climate change affects North America and for the identification of processes, methods and tools that may help countries and communities to develop an adaptive capacity. There is also a critical need to showcase successful examples of how to

manage the social, economic and political complexities posed by climate change, so that lessons can be learned and best practices may be disseminated.

This book serves the purpose of showcasing experiences from research, field projects and best practice in climate change adaptation in North America that may be useful or implemented in other countries and regions. A further aim of this book is to document and disseminate the wealth of experiences available today. Part I describes experiences on climate adaptation management in rural and urban areas, including elements related to community deliberations and the influences of policy and governance. Part II focuses on climate change and the built environment, also emphasizing aspects of planning. Part III includes a set of papers with an emphasis on adaptation, resilience and multi-hazard mitigation. Part IV puts an emphasis on information, communication, education and training on climate change. Part V entails elements related to climate change, planning and health, as well as two examples from other regions. A final chapter offers a cross-disciplinary perspective on the factors shaping North American adaptation research.

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