



# Climate Change

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Intervention Strategies and  
Sustainable Development in the  
Global South

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*Edited by*

Debra D. Joseph · Maud Mthembu ·  
Camille Huggins

palgrave  
macmillan

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*This book is dedicated to persons involved in climate change and all that it entails, especially those in the Global South. We appreciate efforts to bring awareness to this topic and we support and encourage solutions to all challenges faced. This book was written to encourage those concerned in making the world a better place and to let them know that they should never give up on hope for a better future despite the climate change crisis. We can share and learn from each other.*

## FOREWORD

Climate change is altering natural and human systems across the globe, but the most significant impacts are being experienced in the nations that contribute least to this planetary crisis. In 2021, Camille Huggins and Debra Joseph collaborated on a book about *Gender and Domestic Violence in the Caribbean*, which revealed strong linkages between floods and other climate-related disasters and family violence in the Caribbean Islands. In 2023, these award-winning professionals were joined by Maud Mthembu as they set about to record the voices of social scientists from the parts of the world most vulnerable to climate change and least represented in the scientific literature. This current volume represents those voices and includes case studies and regional analyses of climate change impacts and adaptation strategies written by social workers in the Global South. It reveals the diversity of observed impacts and the challenges ahead based on their observations, experiences, and empirical studies in their respective countries. The chapters highlight the importance of climate change informed social work practitioners who are equipped to work in disaster-prone areas. The chapters collectively underscore the disproportionate effects of climate change on poor communities in nations with developing economies and, particularly, the burden of coping on women.

Several chapters in this book focus on the unique challenges facing Small Island Developing States and their struggle to achieve sustainable development goals. The case studies from Africa highlight the importance of interventions for those who derive their subsistence directly from natural ecosystems, those with pastoral livelihoods, the elderly, and other at-risk populations when social networks and national policies challenge their ability to survive and prosper in territories of their choice. This body of work draws attention to the important role of social work professionals in understanding and anticipating the impacts of climate change and in the development of solutions that do not amplify impacts on marginalised people groups. It provides context for future social science research and communities of practice in the Global South. It can help inform the design of training programmes for psychologists, mental health counsellors, and other social work practitioners who are often considered the most trusted in providing guidance in communities after a major disaster.

This book represents a unique and valuable departure from the biophysical assessment reports that have underpinned global decisions about climate change mitigation and adaptation. It forms a sort of social science bridge between local knowledge and western science that has dominated the climate change literature for over 30 years. It offers a glimpse into the challenges facing social welfare systems under a changing climate in Africa, Latin America, and the Caribbean. The authors assert that the principles of social justice and collective responsibility are central to social work and that social workers have a responsibility to protect vulnerable populations from the negative impacts of climate change.

The work of the editors and chapter authors illustrates a lesser-known component of climate change story, perhaps inspiring other social science scholars and practitioners from the Global South to document their experiences and describe the challenges they face in supporting communities at risk. Their work is important in building awareness of the human dimensions of climate change in vast southern regions of our changing planet.

Virginia Burkett  
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**Virginia Burkett** has published roughly 100 journal articles, book chapters, and reports that focus on wetlands, global change, and low-lying coastal systems. She was a Lead Author of the United Nations Intergovernmental Panel on Climate Change (IPCC) Third, Fourth and Fifth Assessment Reports and the IPCC Technical Paper on Water. She was also a Lead Author of the First, Second and Third US National Climate Assessments. She served as Chair of the \$2.6 billion U.S. Global Change Research Program during 2016–2019. She is currently serving as Chief Scientist for Climate and Land Use Change at the U.S. Geological Survey.

## ACKNOWLEDGEMENTS

I would like to express extreme gratitude for the opportunity to work on this book entitled '*Climate Change: Intervention Strategies and Sustainable Development in the Global South*'. This project highlights the urgent realities facing the Global South in the context of climate change. Many countries in this region are currently grappling with rising temperatures, severe flooding, vector-borne diseases, and water scarcity. These challenges significantly impact livelihoods particularly in agriculture along with land use, public health, air quality, and patterns of migration. The primary goal of this book is to build upon the foundation established by the previous volume, *The Impact of Climate Change on Vulnerable Populations: Social Responses to a Changing Environment*. The earlier work focused on how climate change affects vulnerable populations, exploring the social responses to these challenges from a Social Work perspective. In this follow-up volume, we aim to delve deeper, showcasing strategies for sustainable development and resilience in the Global South.

A heartfelt thanks is extended to the contributing authors who provided chapters, insights, and research. These authors were scholars from the University of the West Indies located in Trinidad and Barbados, South Africa, and South America. The chapters in this book explore a diverse range of critical topics, including the psychological impact of natural disasters, food insecurity, migration patterns of displaced persons, African social work intervention perspectives, the role of small business enterprises in addressing climate change, and the innovative applications

of Artificial Intelligence (AI) in this field. Together, these contributions provide a comprehensive view of the multifaceted challenges and solutions related to climate change in the Global South.

Special gratitude for the co-editors, Drs. Maud Mthembu and Camille Huggins for their invaluable input and support as peer reviewers and proofreaders for the various chapters. They were committed to the process and shared the vision of what this publication could provide for the continued issues encountered with regard to climate change.

We extend thanks to Rachael Ballard, Global Head and Publisher, Geography and Environment at Palgrave Macmillan, who assisted us in the first phase of this publication from book proposal to acceptance of same. Her guidance was invaluable. Also, Mr. Naveen Dass, Production Editor, who was assigned to this book publication to ensure that we had a quality finished product. He kept in contact throughout the process with reminders to keep the work in focus.

Dr. Joseph—I would personally like to thank my sons and close friends for their support, understanding, and encouragement. This gave me the motivation to complete the task. Time constraints were a challenge and I had to carve out the time to assist in bringing this publication to fruition. I would also like to thank Dr. Roshnie Doon who assisted with the journey of this book in its initial stages. I am extremely grateful to Professor Adele Jones for her input and support in the process.

Dr. Mthembu—My heartfelt thanks go to my children, Langelihle Cebekhulu and Wakhile Mhlongo, for their unwavering support, patience, and understanding during the long hours I spent immersed in academic pursuits. Your encouragement has been my greatest source of strength. I am forever grateful to the Mthembu family for laying a strong foundation that has empowered me to strive and grow professionally, personally, and spiritually. To my colleagues at the University of KwaZulu-Natal, Discipline of Social Work, your intellectual contributions and camaraderie have been a constant source of inspiration and motivation.

Dr. Huggins—For my niece and nephews, hoping you are prepared for the future.

Finally, to the pioneering scholars in this field, your groundbreaking work has not only paved the way but also provided the solid framework for this exploration. Your dedication continues to inspire me and countless others.

We appreciate the readers and anyone who has shown interest in the book entitled '*Climate Change: Intervention Strategies and Sustainable Development in the Global South*' and we have hope for the book's impact on and contribution to the field of Social Work.

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**Melony Shoye** has a B.Sc. (Hons) in Social Work and an M.Sc. in Natural Resource and Environmental Management, both gained from the University of the West Indies, Cave Hill Campus. She is a Barbados Welfare Officer with 21 years of experience and has an interest in issues surrounding the elderly, electronic mapping and disaster management.

She is currently pursuing an M.Phil. in Social Work and has completed same.

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# ABBREVIATIONS

AARs	After Action Reviews
AI	Artificial Intelligence
AIC	African Indigenous Communities
AOSIS	Alliance of Small Island States
APA	American Psychological Association
API	African-centred Psychosocial Interventions
CCCCC	Caribbean Community Climate Change Centre
CDEMA	Caribbean Disaster Emergency Management Agency
COP	Conference of the Parties
COVID	Coronavirus Disease
CPD	Continuous Personal Development
DRSmC	Disaster Risk Smart Classifier
DSM	Diagnostic and Statistical Manual of Mental Disorders
DSW	Developmental Social Welfare
EM	Ethekwini Municipality
EPA	Environmental Protection Agency
FAO	Food and Agricultural Organisation
GATE	Government Assistance for Tuition Expenses
GDP	Gross Domestic Product
GHG	Green House Gases
GRID	Global Report on Internal Displacement
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome
ICT	Information and Communication Technology
IDMC	Internal Displacement Monitoring Centre
IFRC	International Federation of Red Cross and Crescent Societies

IFSW	International Federation of Social Work
IPCC	Intergovernmental Panel on Climate Change
ISDM	Integrated Service Delivery Model
KZN	KwaZulu-Natal
LAC	Latin America and the Caribbean
LGBT	Lesbian, Gay, Bisexual, Transgender and Intersex
LR	Logistic Regression
LWC	Living Waters Community
ML	Machine Learning
MSMEs	Micro, Small, and Medium Enterprises
MYDNS	Ministry of Youth Development and National Service
NAPA	National Adaptation Programme of Action
NASA	The National Aeronautics and Space Administration
NCCAS	National Climate Change Adaptation Strategy
NCCRP	National Climate Change Response Plan
NDC	Nationally Determined Contribution
NGO	Non-Governmental Organizations
NHC	National Hurricane Centre
NOAA	National Oceanic and Atmospheric Administration
OCHA	United Nations Office for the Coordination of Humanitarian Affairs
OECS	Organization of Eastern Caribbean States
PAHO	Pan-American Health Organization
PANCAP	Pan Caribbean Partnership Against HIV and AIDS
PMPRRR	Prevention, Mitigation, Preparedness, Response, Recovery, and Rehabilitation
POC	Proof-of-Concept
PTSD	Post-Traumatic Stress Disorder
PVO	Private Voluntary Organisations
SDGs	Sustainable Development Goals
SIDS	Small Island Developing States
SMEs	Small and Medium Enterprises
SVM	Support Vector Machine
T&T	Trinidad and Tobago
TCDDPO	Town and Country Development Planning Office
UN	United Nations
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNCC	United Nations Climate Change
UNCTAD	United Nations Conference on Trade and Development
UNDESA	United Nations Department of Economic and Social Affairs
UNDP	United Nations Development Programme
UNDRR	United Nations Office for Disaster Risk Reduction

UNECLAC	United Nations Economic Commission for Latin America and the Caribbean
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNFCC	United Nations Framework Convention on Climate Change
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations International Children's Emergency Fund
USD	United States Dollars
UWI	University of the West Indies
WHO	World Health Organisation
WMO	World Meteorological Organisation

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## Introduction

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According to Dados and Connell (2012), the phrase ‘Global South’ refers broadly to the regions of Latin America, Africa, Asia, and Oceania. It denotes regions outside of Europe and North America that are mostly (not all) low-income and which are often politically or culturally marginalised. The Global South, home to most of the world’s population and some of its most biodiverse regions, stands at the frontline of the climate crisis. These nations, with complex socio-economic landscapes and historical underpinnings of colonial exploitation, now face escalating environmental pressures. Rising temperatures, erratic weather patterns, and intensified natural disasters pose unprecedented challenges, impacting

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livelihoods, destabilising food systems, and forcing communities into increasingly precarious situations.

Strazzante et al. (2021) purports that the Global Climate Risk Index 2021 shows that the poorest countries in the world, even though they may be viewed as having the lowest industrial pollution levels, seem more susceptible to the negative impact of climate change. The inequity experienced by countries in the Global South situates them in a position of disadvantage, exposing them to the vulnerabilities of climate change. Consequently, this exacerbates the already existing global inequalities.

Ogwu et al. (2024) state that many countries in the Global South face significant and growing challenges influencing the attainment of food security. They reiterate that food insecurity in the Global South has an extricable feedback loop linked to poverty, inequality, environmental degradation, biodiversity loss, population growth, and urbanisation, apart from other situations. They add that conflicts, natural disasters, reduction in dietary diversity, and knowledge worsen malnutrition. Diseases, inadequate storage, conflicts, climate change, and poverty-driven migration can impact food insecurity. Consequently, these impacts can increase crime rates, health issues, and political instability.

Donatti et al. (2024) analyse the occurrence of climate-related disasters over 20 years and connected their impact on populations worldwide depending on their levels of human development. They found that Central America, the Caribbean, Eastern Africa, and Southern and Eastern Asia had the highest levels of climate-related disasters. The percentage of persons affected in countries with a high developmental index vastly differed from those with a low human developmental index; the latter with the lower index was more affected. They state that this low human developmental index (HDI) is expected as countries with a high developmental index would likely have more resources to plan for climate-related disasters and warn and educate at-risk populations.

In the Global South, climate change reverberates inequalities by impacting the poorest of communities, for example, Black, Indigenous, and People of Colour, as well as women and children the most. These vulnerable groups can also include smallholder farmers. In many developing countries, farmers produce up to 75% of the food supply. Adverse weather conditions, floods, and droughts affect smallholder farmers' activities (Strazzante et al., 2021).

The following areas highlight some specific adverse climate events: