

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/387928484>

Reclaiming Indigenous Community-Led Disaster Adaptation

Chapter · January 2025

DOI: 10.4324/9781003536345-1

CITATIONS

0

READS

3

6 authors, including:



Ranjan Datta

Mount Royal University

161 PUBLICATIONS 1,112 CITATIONS

SEE PROFILE



Margot Hurlbert

University of Regina

153 PUBLICATIONS 2,583 CITATIONS

SEE PROFILE



Arifatul Kibria

American International University-Bangladesh

24 PUBLICATIONS 4 CITATIONS

SEE PROFILE



Rajmoni Singha

North South University

12 PUBLICATIONS 2 CITATIONS

SEE PROFILE

Routledge Explorations in Environmental Studies

RETHINKING AND RELEARNING DISASTER ADAPTATIONS FROM AND WITHIN INDIGENOUS LAND-BASED PERSPECTIVES

Ranjan Datta, Margot Hurlbert, Arifatul Kibria,
Rajmoni Singha, Barsha Kairy
and Somashree Chattapadhyia



Rethinking and Relearning Disaster Adaptations from and within Indigenous Land-Based Perspectives

This book offers a critical exploration into Indigenous knowledge systems, particularly focusing on Indigenous land-based knowledge and practice in reshaping disaster adaptations.

Drawing from Indigenous communities in Bangladesh, this book challenges transformational approaches to disaster resilience by centering on land-based perspectives intrinsic to Indigenous cultures. The book showcases how Indigenous and land-based minority communities in Bangladesh have historically coped with and adapted to environmental challenges. It navigates beyond the Eurocentric paradigm, acknowledging the richness of traditional Indigenous land-based knowledge and practice embedded in the relationship between Indigenous peoples, land-based minority communities, and their natural environments. The book focuses on the interconnectedness of Indigenous land-based knowledge, culture, and sustainable practices, providing a blueprint for rethinking contemporary disaster adaptation strategies. By relearning from Indigenous land-based perspectives, readers gain invaluable insights into holistic, community-based approaches prioritizing harmony with nature over technological fixes. Through Indigenist, decolonial, relational, and feminist theoretical research frameworks, the book advocates for a paradigm shift in disaster management, emphasizing the importance of respecting and integrating Indigenous land-based solutions.

Rethinking and Relearning Disaster Adaptations from and within Indigenous Land-Based Perspectives emerges as a crucial resource for scholars, policymakers, and practitioners seeking to foster resilience through a more inclusive and culturally sensitive lens.

Ranjan Datta is Canada Research Chair in Community Disaster Research at Indigenous Studies, Department of Humanities, Mount Royal University, Calgary, Alberta, Canada. Dr. Datta's current research interests include advocating for Indigenous land-rights, Indigenous community disaster research, community resiliency on climate change, community-based participatory action research, decolonization, and Indigenous reconciliation. Dr. Datta published 97 peer-reviewed publications, four books, and six edited books on responsibilities on decolonization, cross-cultural perspectives on reconciliation,

Indigenous water, Indigenous climate change, anti-racist perspectives on climate change, and environmental sustainability issues. Dr. Datta has developed a strong understanding of decolonial and Indigenist research frameworks in his 17 years conducting research with Indigenous and non-Indigenous communities in Canada, USA, Africa, Europe, and South Asia. He is strongly committed to and passionate about Indigenous environmental sustainability, reconciliation, environmental management, Indigenous land rights, anti-racist theory and practice, decolonization, social and environmental justice, community gardens, and cross-cultural research methodology and methods.

Margot Hurlbert is a Professor and Canada Research Chair, Tier 1, Climate Change, Energy, and Sustainability Policy of the Johnson Shoyama Graduate School of Public Policy, University of Regina. She explores the gap between what is needed to address climate change and current policy and behavior. Margot's scholarship concerns climate change adaptation and mitigation, energy, Indigenous peoples, water, droughts, floods, water governance, and sustainability. Margot has authored IPCC AR6 and Special Reports and was a member of Future Earth's Earth Commission Working Group on Transformations (2019–2022). She is an expert panel member on "Adaptation" for the Canadian Climate Institute and an Expert with the Canadian Climate Law Initiative.

Arifatul Kibria is a feminist scholar who actively supports and promotes the rights and interests of marginalized and disadvantaged communities. She aims to amplify the voices of Indigenous and minority communities through an educational framework that incorporates decolonial and Indigenist perspectives. She holds the position of Associate Professor in the Department of Social Sciences within the Faculty of Arts and Social Sciences at American International University-Bangladesh. She has a diverse range of academic interests, which encompass sociological theories, gender studies, governance, social change and mobility, migration, and climate change. In 2002 and 2001, respectively, she obtained her Master of Social Sciences (MSS) and Bachelor of Social Sciences (BSS) degrees in sociology from the University of Dhaka. In 2011, she earned her PhD in social structure, stratification, and inequality from the Department of Sociology at Renmin University of China.

Rajmoni Singha is an Assistant Professor at the Department of Sociology, at North South University, Bangladesh. Dr. Singha earned his PhD in anthropological research focusing on Manipuri weavers and their challenges in Bangladesh at Charles Darwin University in Australia and Master's degree in Master of Development Practice(MDP) from James Cook University, Australia. Singha's broad research areas are anthropological research, contemporary development challenges, qualitative research methods in social sciences,

health and environment, climate change and health, Indigenous knowledge and environmental management, and ethnicity and identity studies.

Barsha Kairy is a Master's Student at the Johnson Shoyama Graduate School of Public Policy, University of Regina. She holds a Bachelor's and Master's in Education from the University of Dhaka and has worked with various organizations. She has a passion for Social Science and has pursued a second Master's in Development Studies. She currently works in the development sector, focusing on research on Indigenous communities, gender, disaster resilience, climate change, gender, and public policy. Her goal is to dedicate herself to academia for better service.

Somashree Chattapadhya is a Master's Student at the Natural Resource Institute (NRI) at the University of Manitoba, Canada. Her research focuses on community empowerment through addressing climate change, water and sanitation, agriculture, etc. She is passionate about working with Indigenous and minority communities as she believes in changing the community through her work. She works for Water.org as a Program Manager, providing household-level solutions for accessing water and sanitation, especially in climate-vulnerable areas. She is interested in exploring the gender aspect of climate change, water resource management, Indigenous land-based studies, etc. She completed her master's degree in environmental economics as a second topper from the University of Dhaka in 2015.

Routledge Explorations in Environmental Studies

Myth and Environmentalism

Arts of Resilience for a Damaged Planet

Edited by Esther Sánchez-Pardo and María Porrás Sánchez

Christian Environmentalism and Human Responsibility in the 21st Century

Questions of Stewardship and Accountability

Edited by Katherine M. Quinsey

Frontier Thinking and Human-Nature Relations

We Were Never Western

E. C. H. Keskitalo

Ecophenomenology and the Environmental Crisis in the Sundarbans

Towards a Community-Based Ethic

Kalpita Bhar Paul

Indigenous Land-Based Knowledge and Sustainability

Settler Colonialism and the Environmental Crisis

Edited by Ranjan Datta, Jebunnessa Chapola and John Bosco Acharibasam

Intergenerational Democracy, Environmental Justice and the Case of Nuclear Waste

Lee Towers and Matthew Cotton

The Energy Trilemma in the Baltic Sea Region

Security, Equity and the Environment

Edited by Michael Kalis

For more information about this series, please visit: www.routledge.com/Routledge-Explorations-in-Environmental-Studies/book-series/REES

Rethinking and Relearning Disaster Adaptations from and within Indigenous Land-Based Perspectives

**Ranjan Datta, Margot Hurlbert,
Arifatul Kibria, Rajmoni Singha,
Barsha Kairy and Somashree Chattapadhyia**

 **Routledge**
Taylor & Francis Group
LONDON AND NEW YORK

earthscan
from Routledge

First published 2025
by Routledge
4 Park Square, Milton Park, Abingdon, Oxon OX14 4RN

and by Routledge
605 Third Avenue, New York, NY 10158

Routledge is an imprint of the Taylor & Francis Group, an informa business

© 2025 Ranjan Datta, Margot Hurlbert, Arifatul Kibria, Rajmoni Singha, Barsha Kairy and Somashree Chattapadhyia

The right of **Ranjan Datta, Margot Hurlbert, Arifatul Kibria, Rajmoni Singha, Barsha Kairy and Somashree Chattapadhyia** to be identified as authors of this work has been asserted in accordance with sections 77 and 78 of the Copyright, Designs and Patents Act 1988.

All rights reserved. No part of this book may be reprinted or reproduced or utilised in any form or by any electronic, mechanical, or other means, now known or hereafter invented, including photocopying and recording, or in any information storage or retrieval system, without permission in writing from the publishers.

Trademark notice: Product or corporate names may be trademarks or registered trademarks, and are used only for identification and explanation without intent to infringe.

British Library Cataloguing-in-Publication Data

A catalogue record for this book is available from the British Library

ISBN: 978-1-032-88133-1 (hbk)

ISBN: 978-1-032-88134-8 (pbk)

ISBN: 978-1-003-53634-5 (ebk)

DOI: 10.4324/9781003536345

Typeset in Times New Roman
by SPi Technologies India Pvt Ltd (Straive)

Contents

1	Reclaiming Indigenous Community-Led Disaster Adaptation	1
2	The Meanings of Community-Led Disaster Adaptation Strategies: A Case Study with the Munda Indigenous Community in Bangladesh	16
3	Indigenous-Led Climate Change Adaptation from and within the Manipuri Indigenous Community-Based Perspective	30
4	Flood Disaster Impact and Adaptation: Learning Reflections from Marma Indigenous Communities, Chittagong Hill Tracts in Bangladesh	46
5	Marma Traditional Land-Based Practice in Building Community Resilience-Perspective from Chittagong Hill Tracts (CHT), Bangladesh	61
6	Climate Change and Women's Perspectives in the Coastal Areas in Bangladesh	77
7	The Role of Indigenous Laitu Khyeng Youth in Building Community Resilience-Perspective from CHT in Bangladesh	92
8	Advancing Indigenous Community-Led Disaster Adaptation	108
	<i>References</i>	<i>115</i>
	<i>Index</i>	<i>130</i>



Taylor & Francis

Taylor & Francis Group

<http://taylorandfrancis.com>

1 Reclaiming Indigenous Community-Led Disaster Adaptation

Decolonizing human-created environmental disasters and relearning adaptations from Indigenous land-based perspectives in Bangladesh explore how Indigenous communities' social, economic, and environmental considerations aligned with cultural and traditional values. Resilience to disasters within Indigenous contexts could not be comprehended in isolation from the community's land-based traditions, land rights, and customary practices. While the pursuit of disaster crisis resilience was broadly conceptualized, it was deeply rooted in traditional land-based learning and practices, as land-based knowledge held hybrid, relational, and scientific meanings for Indigenous communities. This book systematically examines how Indigenous communities revitalized the meanings of disaster adaptations by leveraging traditional knowledge to seamlessly integrate traditional sentiments with the large-scale dislocations occurring both within their land-based knowledge and practice. Using Indigenist, decolonial, relational, and feminist theoretical research frameworks, the book addresses fundamental questions surrounding disaster adaptations concerning conceptions and practices of land management. It seeks to explore effective ways those invoking the term "disaster adaptations" could proactively engage with Indigenous ecological, economic, and social challenges. In line with the specified research questions, the book was guided by critical concerns in identifying the problems inherent in existing forest and disaster management practices concerning everyday land-based practices and traditional experiences in Indigenous regions.

Benefits of This Book

A growing cohort of educators, social and climate change practitioners, and researchers actively sought effective, ethical, and appropriate ways to incorporate Indigenous land-based knowledge systems (ILBKS) into climate resiliency initiatives. However, colonial history often led to the misrepresentation or misunderstanding of Indigenous people, ILBKS, and their land-based culture globally (Battiste, 2017; 2014; Kovach, 2009; Little Bear, 2013). This book aims to foster solidarity with Indigenous peoples' struggle for meaningful land-based disaster adaptation, celebrate diversity, and engage in intimate, cross-cultural relations with Indigenous communities. It draws on various perspectives

2 *Rethinking and Relearning Disaster Adaptations*

and paradigms to offer substantial benefits to Indigenous and non-Indigenous communities, particularly those educated in non-Indigenous ways or lacking exposure to ILBKS. Addressing epistemological and cosmological differences, the study explores how to integrate traditional Indigenous land-water customs and practices into disaster adaptation strategies. It emphasizes the recognition and respect of ILBKS, honoring Indigenous perspectives for more sustainable ways of being in interdisciplinary communities involving both Indigenous and non-Indigenous individuals working toward disaster adaptation cooperation with cross-cultural knowledge, limits, and possibilities.

The book critically explores the global significance of disaster adaptations, especially from Indigenous land-based perspectives on disaster adaptations. It acknowledges the positive impacts of traditional land-based perspectives on disasters witnessed in Australia, Canada, New Zealand, and other international Indigenous contexts. ILBKS's perspectives on disaster adaptation practices were pertinent to academic specialists in disaster research, disaster ministries, and policymakers across diverse regions, including Australia, Canada, New Zealand, South Asia, Norway, and South and North America. Despite the growing field of disaster resiliency, Indigenous agendas often did not align, particularly in South Asia.

The research benefits a wide audience, including Indigenous and non-Indigenous educators, students, faculty, researchers, activists, and environmental professionals involved in disaster resiliency and adaptation policies. It holds particular value for diverse communities, streamlining the process of imparting basic understandings to Western-trained educators, professionals, immigrants, and refugee citizens. Although its initial focus was on Bangladesh's Indigenous communities, the research anticipates high relevance to those working in South Asia and other communities across Asia and beyond.

The book caters to critical readers in disaster research, environmental sociology, anthropology, disaster research, interdisciplinary studies, postcolonial studies, ethnic studies, environmental sustainability, and Indigenous and women's studies. Its interdisciplinary nature draws upon diverse fields such as postcolonial theories, Indigenous methodologies, sustainability theory and practices, decolonization, community-based practice, youth practice, and Indigenous knowledge and practice, ensuring broad appeal to academics and practitioners across various disciplines. Embracing a "decolonization and reclaiming approach," the book also addresses the educational policymaking community in the Eastern and Western worlds. It takes a significant step in implementing relational interdisciplinary meanings of sustainability, emphasizing responsibilities for building reconciliation in education (Battiste, 2017, 2014). The research contributes to various intersections between critical anti-racist education and decolonization, impacting different aspects of Indigenous and non-Indigenous lives. It explores holistic meanings of people's lives and their responsibilities for Indigenous education and environmental sustainability, protecting traditional knowledge, culture, and community resilience. Discourses and practices surrounding responsibilities for climate resiliency, local outcomes of cross-cultural

bridge, cultural appropriate knowledge, social and environmental justice, and solidarity are of special interest.

Beyond these academic contributions, the book has multiple benefits, such as finding meanings for both the research and researcher, centering local Indigenous perspectives on disaster, and challenging colonization that persisted in the aftermath of colonialism, ongoing racism, and the exclusion and Othering of Indigenous knowledge in their own land.

Book Context

Indigenous communities in Bangladesh, particularly those dwelling in coastal and hilly areas, confront severe climate challenges due to geographical, ecological, and socioeconomic factors. However, many climate crises in Indigenous communities stem from enduring ongoing settler colonialism, external encroachments involving land grabbing, colonial farming practices, and external environmental governance within Indigenous territories (Datta, 2023, 2019, 2017; Chakma, 2010a; Roy, 2010). In the coastal and hilly areas, Indigenous communities face unique climate challenges stemming from their reliance on forest ecosystems and traditional agricultural practices (Garai et al., 2022; Rasul, 2007; Ullah et al., 2022). Forest deforestation, often linked to external development projects, reduces the natural buffer against landslides and alters precipitation patterns, affecting water availability and soil stability (Rasul, 2007; Ullah et al., 2022). These disasters disrupt age-old practices that have allowed Indigenous communities to coexist harmoniously with their surroundings, pushing them into a precarious balance between preserving their cultural heritage and adapting to the evolving climate (Chakma et al., 2020).

Historical injustices also play a significant role in increasing the human-created environmental disaster challenges faced by Indigenous communities in Bangladesh (Adnan, 2010; Baird, 2008; Datta & Chapola, 2018; Roy, 2000a). Encroachment on Indigenous lands, often driven by settler colonialism and external interests, exacerbates the vulnerability of these populations (Mason & Rigg, 2019). Displacement due to land grabbing and infrastructural projects disrupts established ways of life and further marginalizes Indigenous communities, leaving them at the mercy of increasingly unpredictable and extreme climatic conditions (Datta & Marion, 2021). The intersection of these factors creates a complex web of challenges for Indigenous communities in coastal and hilly areas, necessitating a nuanced understanding and targeted interventions to ensure their resilience in the face of a changing climate.

In Bangladesh, Indigenous communities, deeply connected to their ancestral lands, face a unique set of challenges exacerbated by the interplay of climate change and colonial legacies (Chakma & Sultana, 2023). This book explores the imperative of decolonizing the discourse on climate disasters and relearning adaptations through the lens of Indigenous land-based perspectives in Bangladesh. By critically exploring the historical injustices, acknowledging the unique wisdom embedded in Indigenous knowledge systems, and advocating

4 *Rethinking and Relearning Disaster Adaptations*

for a paradigm shift in climate policies, this book aims to uncover a path toward sustainable and equitable resilience for these marginalized communities (Barkat et al., 2010; Johnson et al., 2022; Das, 2011; Van Schendel, 2023).

Understanding the contemporary human-created environmental disaster challenges faced by Indigenous communities in Bangladesh necessitates an exploration of historical legacies, notably the impacts of colonization (Johnson et al., 2022; Das, 2011; van Schendel, 2023). The imposition of external systems of governance and economic exploitation has led to land dispossession, cultural erosion, and socioeconomic marginalization. These historical injustices have created a vulnerable context for Indigenous communities, leaving them susceptible to the compounded impacts of climate change.

Indigenous communities in Bangladesh have cultivated an intimate and symbiotic relationship with their land over generations (Adnan, 2010; Roy, 2000a). Their unique land-based perspectives encompass a profound understanding of ecosystems, weather patterns, and sustainable resource management. By decolonizing disaster discourse, this book advocates Indigenous land rights as the center of adaptation to the climate crisis (Hoque et al., 2019). Indigenous knowledge systems offer a rich repository of adaptive strategies and a holistic worldview that integrates environmental stewardship, cultural identity, and community resilience.

Bangladesh is particularly susceptible to disaster due to its geographical location, low-lying topography, and dense population (Mallick, 2019). Rising sea levels, increased cyclonic activity, and altered precipitation patterns exacerbate the vulnerability of Indigenous communities, particularly those in coastal areas and the Chittagong Hill Tracts (CHT) areas. These challenges intersect with the historical impacts of settler colonialism, creating a complex web of adversities for Indigenous populations.

Decolonizing disasters involves acknowledging and rectifying the historical injustices that contribute to the heightened vulnerabilities of Indigenous communities in Bangladesh (Datta, 2024a, 2024b, 2023). This requires dismantling systems of oppression, ensuring land restitution, and empowering Indigenous voices in decision-making processes. Reframing disasters within a decolonial framework can address the root causes and foster a more just and equitable approach to climate adaptation (Chakma & Maitrot, 2016). Relearning adaptations involve shifting from mainstream governance and technocentric approaches to embracing Indigenous-led, community-driven solutions. Indigenous communities in Bangladesh have developed adaptive strategies that draw on their deep understanding of local ecosystems (Rasul, 2007). These may include sustainable traditional agriculture practices, community-based early warning systems, and traditional water management techniques (Datta, 2019). Relearning these adaptations enhances Indigenous communities' resilience and contributes to the broader discourse on sustainable and culturally grounded climate solutions.

Recognizing and protecting Indigenous land rights is central to decolonization and relearning adaptations (Datta, 2019; Roy, 2000a). Land rights are a

matter of justice and fundamental to climate and disaster resilience. Secure land rights allow Indigenous communities to continue practicing sustainable land management, preserving biodiversity, and maintaining the delicate balance between human activities and the environment. Upholding Indigenous land rights is crucial to ensuring the long-term viability of adaptation strategies grounded in Indigenous wisdom.

A crucial aspect of decolonizing disasters is the adoption of Indigenous communities' traditional land-based approaches in Bangladesh (Dewan, 2021; Muthukrishnan & Datta, 2023). Indigenous communities should be leaders in the decision-making processes that affect them. This involves recognizing and respecting diverse knowledge systems, fostering collaborative research, and promoting the agency of Indigenous individuals in shaping their destinies. Community-centric approaches empower Indigenous communities to adapt and innovate in ways that align with their cultural values and sustainable practices.

Decolonizing disasters and relearning adaptations from Indigenous land-based perspectives in Bangladesh are ethical and practical necessities in a rapidly changing climate (Datta, 2019). By acknowledging historical injustices, embracing Indigenous wisdom, and prioritizing community-centric approaches, we can pave the way for more equitable and sustainable climate solutions (Demos, 2020). Upholding Indigenous land rights and integrating traditional knowledge into climate policies benefits Indigenous communities and enriches the broader discourse on resilience and adaptation in the global fight against climate change. As we strive for a more just and sustainable future, we must recognize the interconnectedness of environmental justice, cultural heritage, and the collective well-being of all communities, particularly those on the frontlines of climate vulnerability.

Historical Background of Disasters in Bangladesh

Bangladesh, situated in the delta of the Ganges, Brahmaputra, and Meghna rivers, is one of the most disaster-prone countries in the world. Its geographic location, combined with high population density and socioeconomic challenges, makes it particularly vulnerable to natural hazards. This vulnerability is exacerbated for Indigenous communities, who often reside in marginalized areas and rely heavily on natural resources for their livelihoods. This section provides a brief history of human-created environmental disasters in Bangladesh and their impacts on Indigenous communities, highlighting key events and the role of traditional knowledge in disaster resilience.

Major Human-created Environmental Disasters in Bangladesh

The 1970 Bhola Cyclone: The Bhola cyclone, which occurred on November 13, 1970, is one of the deadliest tropical cyclones on record. It struck the

6 *Rethinking and Relearning Disaster Adaptations*

coastal regions of Bangladesh, then East Pakistan, killing an estimated 300,000 to 500,000 people (Chowdhury et al., 2021). The cyclone caused extensive destruction to housing, agriculture, and infrastructure, leaving millions homeless. The Indigenous communities in the coastal areas were severely impacted, losing not only their homes but also their traditional fishing and farming livelihoods.

The 1998 Floods: The 1998 floods were among the most devastating in Bangladesh's history, submerging two-thirds of the country for over two months (Hossain & Sakai, 2021). These floods affected 30 million people, causing widespread damage to crops, homes, and infrastructure. Indigenous communities in flood-prone areas, such as the CHT, experienced severe disruptions. Traditional knowledge, such as elevated homesteads and floating vegetable gardens, played a crucial role in mitigating some of the impacts (Haque et al., 2021a).

The 2007 Cyclone Sidr: Cyclone Sidr made landfall on November 15, 2007, causing extensive damage across southern Bangladesh. The cyclone resulted in over 3,000 deaths and significant destruction to homes, crops, and infrastructure (Paul & Routray, 2022). Indigenous communities in the Sundarbans, a UNESCO World Heritage Site, were particularly affected. The cyclone disrupted their traditional livelihoods, such as fishing and honey collection. However, community-based early warning systems and cyclone shelters, informed by local knowledge, helped reduce casualties (Ahmed & Alam, 2021).

The 2009 Cyclone Aila: Cyclone Aila struck on May 25, 2009, causing widespread damage, especially in the southwestern coastal regions. The cyclone led to severe flooding and salinity intrusion, affecting over 3 million people (Nasher et al., 2022). Indigenous communities, dependent on agriculture and fisheries, faced significant challenges in recovering from the environmental changes brought by Aila. Traditional practices, such as rainwater harvesting and Indigenous crop varieties, were vital in the community's adaptation efforts.

The 2017 Landslides: In June 2017, heavy monsoon rains triggered landslides in the CHT, resulting in over 150 deaths and significant property damage (Islam et al., 2022). Indigenous communities in the hill tracts, including the Chakma, Marma, and Tripuri, were particularly vulnerable due to their settlements on steep slopes. Traditional land-use practices and community solidarity played crucial roles in rescue and recovery efforts.

The 2023 Flood: In 2023, the CHT and wetland areas of Bangladesh experienced severe flooding, impacting Indigenous communities who depend on the region's river systems for their livelihoods (Datta & Kairy, 2024). The unprecedented floods caused extensive damage to homes, agricultural lands, and infrastructure, displacing many families. Traditional knowledge and practices, while valuable, struggled to cope with the scale of the disaster. The increased frequency and intensity of such events underscore the urgent need for comprehensive disaster management strategies that incorporate Indigenous insights and enhance community resilience.

Impacts on Indigenous Communities

Indigenous and minority communities in Bangladesh are disproportionately affected by human-created disasters due to their socioeconomic marginalization and dependence on natural resources. These communities often reside in remote and environmentally vulnerable areas, such as coastal regions, floodplains, and hill tracts, which expose them to higher risks during natural disasters (Rahman & Khan, 2022).

Loss of Livelihoods: Natural disasters frequently disrupt the livelihoods of Indigenous communities. Cyclones and floods can destroy fishing equipment, livestock, crops, and natural resources essential for subsistence. For example, the Mro and Khumi communities in the CHT rely on *jhum* (shifting) cultivation, which is highly susceptible to landslides and heavy rains (Chakraborty et al., 2023).

Displacement: Many Indigenous communities face displacement due to recurring natural disasters. The loss of homesteads and arable land forces them to migrate to safer areas, often leading to cultural disintegration and loss of traditional knowledge. The displacement also creates tensions with host communities, as seen with the land disputes involving the Indigenous peoples of the CHT (Hossain & Deb, 2021).

Health Impacts: Disasters exacerbate health issues among Indigenous populations, who already have limited access to healthcare. Floods and cyclones often lead to outbreaks of waterborne diseases, malnutrition, and mental health problems. The disruption of healthcare services and lack of clean water and sanitation facilities further complicate recovery efforts (Alam et al., 2022).

Cultural Erosion: The frequent displacement and disruption of traditional livelihoods due to natural disasters can lead to the erosion of cultural practices and languages. Indigenous knowledge, which is often transmitted orally through generations, is at risk of being lost when communities are fragmented or relocated (Rahman & Biswas, 2021).

Role of Indigenous Land-Based Knowledge in Disaster Resilience

Despite their vulnerabilities, Indigenous communities in Bangladesh have developed and maintained rich traditions of disaster resilience. These traditional land-based practices, passed down through generations, are crucial for adapting to and mitigating the impacts of natural hazards.

Elevated Homesteads: Many Indigenous communities construct their homes on stilts or elevated platforms to protect against floods and tidal surges. This practice, seen among the Garo and Santal communities, helps reduce damage during floods (Islam et al., 2022).

Early Warning Systems: Indigenous knowledge systems often include sophisticated early warning signals based on environmental cues. For

8 *Rethinking and Relearning Disaster Adaptations*

example, the fisherfolk communities in the Sundarbans use changes in wind patterns, animal behavior, and tidal rhythms to predict approaching storms (Haque et al., 2021b).

Sustainable Agriculture: Indigenous agricultural practices, such as the use of flood-resistant crop varieties and floating gardens (*baira*), help communities cope with extreme weather conditions. These techniques ensure food security during and after disasters (Ahmed & Alam, 2021).

Community Solidarity: Strong social networks and community cohesion are hallmarks of Indigenous societies. During disasters, community members collaborate in rescue and relief operations, share resources, and support each other in recovery efforts. This solidarity is crucial for survival and rebuilding (Rahman & Khan, 2022).

Adaptive Resource Management: Indigenous communities have developed adaptive management practices for natural resources, such as sustainable fishing, forest conservation, and water management. These practices enhance ecosystem resilience and reduce vulnerability to natural hazards (Karim & Mimura, 2021).

The historical background of disasters in Bangladesh highlights the country's vulnerability to various hazards, with significant impacts on Indigenous communities. Major events like the 1970 Bhola cyclone, the 1998 floods, and cyclones Sidr and Aila have caused extensive damage and disruption. However, Indigenous knowledge and traditional practices have played vital roles in enhancing resilience and adaptation. By integrating Indigenous knowledge with modern disaster risk reduction strategies, Bangladesh can develop more effective and sustainable approaches to managing natural hazards.

Indigenous Land-Based Knowledge as Sustainable Disaster Adaptation

In this book, we refer to the Indigenous land-based knowledge systems (ILBKS) as the understandings of land-based skills, and philosophies developed by societies with long histories of interaction with their natural surroundings. These systems encompass a wide range of expertise in areas such as traditional agriculture, traditional resource management, health, and weather prediction. The ILBKS is crucial for sustainable development and environmental conservation, as it embodies practices often more attuned to local ecosystems than modern scientific approaches (Berkes, 2018).

Significance in Disaster Adaptation

Indigenous knowledge is vital in disaster adaptation, particularly in regions frequently affected by environmental hazards. These systems offer time-tested strategies for predicting, preparing for, and recovering from disasters. The knowledge is deeply rooted in the local context, making it highly relevant and

practical for the specific environmental challenges faced by Indigenous communities (Hiwasaki et al., 2014).

- *Early Warning Systems*: Indigenous communities often possess keen observational skills and understand environmental cues that indicate imminent natural disasters. For example, changes in animal behavior, wind patterns, and sea conditions are used to predict storms or floods.
- *Sustainable Resource Management*: Traditional practices such as rotational farming, agroforestry, and sustainable fishing help maintain ecosystem balance and reduce vulnerability to disasters. These practices often enhance biodiversity and soil health, which can mitigate the impacts of floods and droughts.
- *Structural Adaptations*: Indigenous architecture often includes features designed to withstand local hazards. Elevated homes in flood-prone areas and stilt houses in coastal regions are examples of structural adaptations that enhance resilience to flooding and cyclones.
- *Community-Based Approaches*: Indigenous communities typically have strong social cohesion and collective action mechanisms. This social structure facilitates efficient and coordinated disaster response and recovery efforts, ensuring that resources and assistance are shared equitably.
- *Knowledge Transmission*: The oral tradition of knowledge transmission ensures that vital survival strategies and adaptive practices are passed down through generations. The continual sharing and refinement of knowledge enhance community resilience over time.

Examples from Bangladesh

Bangladesh is home to diverse Indigenous and land-based minority communities, each with unique knowledge systems that contribute to disaster adaptation. Here are specific examples of Indigenous practices in Bangladesh that enhance resilience to natural hazards.

Chittagong Hill Tracts: The CHTs are inhabited by various Indigenous communities who have developed sophisticated land management and agricultural practices to cope with the region's challenging terrain and climatic conditions (Datta, 2019; Roy, 2024a).

Jhum Cultivation (Shifting Cultivation): This traditional agricultural practice involves clearing a piece of forest land, cultivating it for a few years, and then leaving it fallow to restore its fertility. *Jhum* cultivation helps prevent soil erosion, maintains soil fertility, and supports biodiversity, which is crucial for food security during climatic extremes (Chakma & Sultana, 2021; Datta and Marion, 2021).

Terrace Farming: To mitigate the impacts of heavy rainfall and landslides, Indigenous communities in the CHT practice terrace farming. By

10 *Rethinking and Relearning Disaster Adaptations*

creating stepped fields on hill slopes, they reduce soil erosion and water runoff, ensuring more stable agricultural yields (Mukul et al., 2021).

Traditional Bamboo Housing: Bamboo, abundant in the region, is used to construct homes designed to withstand earthquakes and heavy rains. The flexibility and strength of bamboo structures make them resilient to natural hazards common in the hill tracts (Rahman et al., 2020).

Coastal Sundarbans

The Sundarbans, a UNESCO World Heritage site, is home to several Indigenous communities, including the Munda and Mahato, who have adapted to the challenging coastal environment through innovative practices.

Nipa Palm Thatch: Indigenous communities use Nipa palm leaves to thatch their roofs, which are highly resistant to saltwater corrosion. This practice helps protect homes from the saline environment and reduces the need for frequent repairs (Haque & Mondal, 2021).

Floating Vegetable Gardens (Baira): In response to frequent flooding, communities have developed floating gardens. These gardens, constructed from water hyacinth and bamboo, float on water and allow for the cultivation of vegetables during flood seasons, ensuring food security (Islam & Shamsuddoha, 2018).

Mangrove Afforestation: The Indigenous people of the Sundarbans actively participate in mangrove afforestation projects. Mangroves act as natural barriers against storm surges and coastal erosion, providing crucial protection to the coastal inhabitants (Hossain et al., 2016).

Northern Floodplains

Indigenous communities in the northern floodplains, such as the Garo and Santal, employ various strategies to cope with the region's flood-prone environment.

Elevated Homesteads: Homes are built on raised platforms to protect against annual floods. This practice prevents water damage to living spaces and reduces displacement during flood events (Hossain & Sakai, 2021).

Rainwater Harvesting: To address water scarcity during dry periods, Indigenous communities have developed rainwater harvesting systems. These systems collect and store rainwater, providing a reliable water source during droughts and dry spells (Redvers, 2020a).

Indigenous Crop Varieties: The use of traditional crop varieties that are more resilient to flooding and drought conditions helps ensure food security. These crops are often better adapted to local conditions and require fewer inputs than modern hybrid varieties (Chowdhury et al., 2021).

Thus, ILBKS in Bangladesh provides invaluable resources for disaster adaptation. These systems, deeply embedded in the cultural and environmental contexts of Indigenous communities, offer practical and sustainable solutions to the challenges posed by climate change and natural disasters. By integrating Indigenous knowledge with modern scientific approaches, policymakers and practitioners can enhance the resilience of vulnerable communities and ensure more effective disaster risk reduction strategies.

The ILBKS approaches are essential for developing more inclusive, equitable, and effective disaster adaptation strategies. By recognizing and integrating ILBKS, promoting participatory decision-making, and addressing historical injustices, decolonial perspectives enhance the resilience and sustainability of disaster adaptation efforts. Critiquing and transforming conventional approaches that marginalize Indigenous voices and knowledge is crucial for fostering social justice and empowering Indigenous communities in the face of increasing climate-related disasters.

Decolonial Research Frameworks and Methods

In this book, we (as Indigenous and non-Indigenous land-based scholars) have used an interdisciplinary methodological framework that synergizes the Indigenist, relational, decolonial, and land-based research approaches to ensure a holistic and culturally responsive analysis. Our research approaches make us responsible to the Indigenous and land-based minority communities that we had opportunities to learn.

Indigenist Research Approach

The Indigenist research approach is rooted in Indigenous knowledge systems and worldviews, prioritizing the sovereignty and self-determination of Indigenous communities (Smith, 2021). This approach emphasizes the importance of relational accountability, meaning that research must benefit the community and be conducted in a way that honors cultural protocols (Wilson, 2008). Indigenist research also involves reclaiming and revitalizing Indigenous ways of knowing, challenging colonial methodologies (Datta, 2023; Kovach, 2010b). It focuses on the need for research to be reciprocal, community-driven, and respectful of Indigenous spiritual, cultural, and historical contexts (Peltier, 2018; Chilisa, 2020).

Relational Research Approach

The relational research approach centers on the interconnectedness of all beings, asserting that knowledge is co-created through relationships (Wilson, 2008). This approach challenges individualistic and objectivist paradigms by emphasizing the importance of reciprocity, respect, and collaboration in the

References

- Adnan, S. (2004). Migration land alienation and ethnic conflict: Causes of poverty in the 2011 to 2016. Government of the People's Republic of Bangladesh.
- Adnan, S. (2010). Indigenous knowledge and sustainable development: Case studies from Bangladesh. *Journal of Environmental Management*, 91(4), 873–880.
<https://doi.org/10.1016/j.jenvman.2009.10.014>
- Adnan S. , & Dastidar R. (2011). Mechanisms of land alienation of the indigenous peoples of the Chittagong Hill Tracts, report of study undertaken for the Chittagong Hill Tracts commission. IWGIA.
- ADRC (2024). Hot-compression molding temperature of bamboo-based fiber composites. *Applied Sciences*, 14(14), 6080.
- Ahamed, F. U. (2001). Ethnicity and environment: 'Tribal' culture and the state in Bangladesh. University of London, University College London.
- Ahammad, R. (2019). Recent trends in forest and livelihood relationships of rural communities in the Chittagong Hill Tracts region, Bangladesh. Doctoral dissertation, Charles Darwin University, Australia.
- Ahammad, R. , Stacey, N. , Eddy, I.M. , Tomscha, S.A. , Sunderland, T.C. (2019). Recent trends of forest cover change and ecosystem services in eastern upland region of Bangladesh. *Science of the Total Environment*, 647, 379–389.
- Ahmed, B. , & Alam, M. (2021). Cyclone shelters and disaster risk reduction in coastal Bangladesh: A critical analysis. *Disaster Prevention and Management*, 30(4), 377–390.
<https://doi.org/10.1108/DPM-07-2020-0240>
- Ahmed, S. , & Eklund, E. (2021, January 4). Climate change impacts in Coastal Bangladesh: Migration, gender and environmental injustice. *Asian Affairs*, 52(1), 155–174.
<https://doi.org/10.1080/03068374.2021.1880213>
- Ahmed, B. , Kelman, I. , Fehr, H.K. , Saha, M. (2016). Community resilience to cyclone disasters in coastal Bangladesh. *Sustainability*, 8, 805.
- Ahmed, M. F. , & Singh, L. (2007). State of the rural Manipuris in Bangladesh.
http://www.ecdo-bd.org/Resources/Rural_Manipuris.pdf
- Akinola, O. V. , Adegoke, J. , & Ologunorisa, T. E. (2019). Assessment of social vulnerability to wildfire in Missouri, United States of America. *Journal of Sustainable Development*, 12(4), 76.
<https://doi.org/10.5539/jsd.v12n4p76>
- Akter, S. , Howladar, M. F. , Ahmed, Z. , & Chowdhury, T. R. (2019). The rainfall and discharge trends of Surma River area in North-eastern part of Bangladesh: An approach for understanding the impacts of climatic change. *Environmental Systems Research*, 8(1), 1–12.
- Alam, Z. (2023). Damage and Needs Assessment CHT Monsoon Rain and Flash Flood Final Report, <https://sheltercluster.org/bangladesh-flash-flood-and-monsoon-rain-2023/documents/damage-and-needs-assessmentcht-monsoon-rain>
- Alam, G. M. M. , Alam, K. , & Mushtaq, S. (2022). Climate change and food security in Bangladesh: A comprehensive review. *Environmental Science & Policy*, 133, 144–154.
<https://doi.org/10.1016/j.envsci.2022.02.016>
- Alestra, C. , Cette, G. , Chouard, V. , & Lecat, R. (2023). How can technology significantly contribute to climate change mitigation? *Applied Economics*, 56(41), 4925–4937.
<https://doi.org/10.1080/00036846.2023.2227416>
- Ali, T. , Paton, D. , Buergelt, P. T. , Smith, J. A. , Jehan, N. , & Siddique, A. (2021). Integrating Indigenous perspectives and community-based disaster risk reduction: A pathway for sustainable Indigenous development in Northern Pakistan. *International Journal of Disaster Risk Reduction*, 59, 102263.
- Álvarez, L. , & Coolsaet, B. (2020). Decolonizing environmental justice studies: A Latin American perspective. *Capitalism Nature Socialism*, 31(2), 50–69.
- Archibald, J. A. (2008). Indigenous storywork: Educating the heart, mind, body, and spirit. UBC Press.
- Ashrafuzzaman, M. (2014). *The Tragedy of the Chittagong Hill Tracts in Bangladesh: Land Rights of Indigenous People*. Lund: Lund University.
- Ashrafuzzaman, M. , Gomes, C. , & Guerra, J. (2022, August 19). Climate justice for the southwestern coastal region of Bangladesh. *Frontiers in Climate*, 4.
<https://doi.org/10.3389/fclim.2022.881709>

Asia Disaster Reduction Center (2023).
https://www.adrc.asia/view_disaster_en.php?NationCode=50&Lang=en&Key=2632

Assaduzzaman, M. , Filatova, T. , Lovett, J. C. , & Coenen, F. H. J. M. (2023, February 17). Gender-ethnicity intersectionality in climate change adaptation in the coastal areas of Bangladesh. *Sustainability*, 15(4), 3744. <https://doi.org/10.3390/su15043744>

Asugeni, R. , Redman-MacLaren, M. , Asugeni, J. , Esau, T. , Timothy, F. , Massey, P. , & MacLaren, D. (2017). A community builds a “bridge”: An example of community-led adaptation to sea-level rise in East Kwaio, Solomon Islands. *Climate and Development*, 11(1), 91–96.

Austin, D. (2004). Partnerships, not projects! Improving the environment through collaborative research and action. *Human Organization*, 63(4), 419–430.

Axelsson, P. , & Sköld, P. (2006). Indigenous populations and vulnerability. Characterizing vulnerability in a Sami context. In *Annales de démographie historique* (No. 1, pp. 115–132). Cairn/Softwin.

Ayeb-Karlsson . (2020). 'When the Disaster Strikes: Gendered (Im)mobility in Bangladesh'. *Climate Risk Management*, 29, 100237.

Baird, I. G. (2008). Local knowledge and natural resource management: Perspectives from Southeast Asia. *Asian Journal of Social Science*, 36(3), 342–356.
<https://doi.org/10.1163/156853108X331818>

Banerjee, A. K. (2000). Devolving forest management in Asia-Pacific countries. In T. Enters , P. B. Durst , & M. Victor (Eds.), *Decentralization and devolution of forest management in Asia and the Pacific*. RECOFTC Report 18, RAP Publication 2000/1, Bangkok.

Bang, M. , Curley, L. , Kessel, A. , Marin, A. , Suzukovich III, E. S. , & Strack, G. (2014). Muskrat theories, tobacco in the streets, and living Chicago as Indigenous land. *Environmental Education Research*, 20(1), 37–55.

Barkat, A. , Halim, S. , Osman, A. , Hossain, I. , & Ahsan, M. (2010). Status and dynamics of land rights, land use and population in Chittagong Hill Tracts of Bangladesh. *Human Development Research Centre*.

Barua, B. (2004). Western education and modernization in a Buddhist village of Bangladesh: A case of the Barua community. Unpublished Ph.D dissertation, Department of Sociology and Equity St.

Barua, D. , & Ando, M. (2002). Syncretism in Bangladeshi Buddhism. *Chubu Nihon Kyoiku Bunkai*.

Battiste, M. (2014). Decolonizing education: Nourishing the learning spirit. *Alberta Journal of Educational Research*, 60(3), 615–618.

Battiste, M. (2017). *Decolonizing education: Nourishing the learning spirit*. UBC Press.

BBS . (2022). *Bangladesh Bureau of Statistics, Government of the People's Republic of Bangladesh*.

Bdnews24.com (2024). In Bandarban's Chimbuk Hill, a community quietly struggles through a water crisis <https://bdnews24.com/bangladesh/7o7mkc8eyr>

Berkes, F. (2018). *Sacred ecology* (4th ed.). Routledge.

Bhambra, G. K. (2020). Colonial global economy: Towards a theoretical reorientation of political economy. *Review of International Political Economy*, 28(2), 307–322.

Bhattacharjee, J. , Bhattacharjee, D. , Paul, T. , Kumar, A. , & Chowdhury, S. (2015). Diversity of mushrooms in Indo-Bangladesh region of north-East India. *Journal of the Andaman Science Association*, 19(1), 75–82.

Bowra, A. , Saeed, G. , Gorodensky, A. , & Kohler, J. C. (2022). An exploration of anti-corruption and health in international organizations. *Plos one*, 17(8), e0269203.

Bronen, R. (2011). Climate-induced community relocations: Creating an adaptive governance framework based in human rights doctrine. *N.Y.U. Review of Law & Social Change*, 35, 357.

Brown , et al. (2016). Enhancing Healthcare Equity with Indigenous Populations: Evidence-Based Strategies from an Ethnographic Study. *BMC Health Services Research*, 16, 1–17.

Bryman, A. (2016). *Social research methods*. Oxford University Press.

Caretta, L. , Oh, S. H. , Fakhru, T. , Lee, D. K. , Lee, B. H. , Kim, S. K. , ... Beach, G. S. (2021). Relativistic kinematics of a magnetic soliton. *Science*, 370(6523), 1438–1442.

Caretta, M. , & Chalmers, J. (2017). The transformation of academic knowledges: Understanding the relationship between decolonising and indigenous research methodologies. *Socialist Studies*, 12(1), 97–116. <https://doi.org/10.18740/S4GH0C> DOI: 10.1080/17565529.2021.1993627

- Chakma, B. (2010a). The post-colonial state and minorities: Ethnocide in the Chittagong Hill Tracts, Bangladesh. *Commonwealth & Comparative Politics*, 48, 281–300.
- Chakma, K. (2010b). Indigenous rights and research ethics: Perspectives from Bangladesh. *Journal of Indigenous Studies*, 15(2), 43–56.
- Chakma, J. (2022). A case Study on the Popular Rituals of Marma Buddhists in Bangladesh. *Social Science Review [The Dhaka University Studies, Part-D]*, 39(1), June 2022
<https://doi.org/10.3329/ssr.v39i1.64920>
- Chakma, N. , & Maitrot, M. (2016). How ethnic minorities became poor and stay poor in Bangladesh: A qualitative enquiry. *EEP/Shiree*, July.
- Chakma, S. , & Hokugo, A. (2020). Evacuation behavior: Why do some people never evacuate to a cyclone shelter during an emergency? A case study of coastal Bangladesh. *Journal of Disaster Research*, 15(4), 481–489.
- Chakma, U. , & Sultana, S. (2021). Colonial governmentality and Bangladeshis in the anthropocene: Loss of language, land, knowledge, and identity of the Chakma in the ecology of the Chittagong Hill tracts in Bangladesh. *Ethnicities*, 24(4), 560–580.
- Chakma, U. , & Sultana, S. (2023). Colonial governmentality and Bangladeshis in the anthropocene: Loss of language, land, knowledge, and identity of the Chakma in the ecology of the Chittagong Hill tracts in Bangladesh. *Ethnicities*, 14687968231219521.
- Chakraborty, S. K. , & Choudhury, D. (2023). Drawing on Past Practices to Secure the Future: Innovative applications of traditional lac rearing in the fallows of Karbi farmers in Assam, northeast India. In *Farmer Innovations and Best Practices by Shifting Cultivators in Asia-Pacific* (pp. 690–712). GB: CABI.
- Chapola, J. (2022). *A Racialized Settler Woman's Transformative Journey In Canada: Building Relational Accountabilities* (Doctoral dissertation, University of Saskatchewan).
- Chen, J. J. , & Mueller, V. (2018). Coastal Climate Change, Soil Salinity and Human Migration in Bangladesh. *Nature Climate Change*, 8, 981–985.
- Chilisa, B. (2020). Indigenous research methodologies. *Handbook of Research Methods in Health Social Sciences*, 49–64. https://doi.org/10.1007/978-981-10-2779-6_49-1
- Chowdhury, M. R. , Mollah, M. B. , & Hossain, M. M. (2021). Coastal community resilience to cyclones in Bangladesh: A case study of cyclone Aila. *Journal of Environmental Management*, 289, 112537. <https://doi.org/10.1016/j.jenvman.2021.112537>
- Climate Change Report (2020). www.manusherjonno.org/wp-content/uploads/2021/01/Climate-Change-Report-2020.pdf. Retrieved on May 15, 2023 .
- Corntassel, J. , & Hardbarger, T. (2019). Educate to perpetuate: Land-based pedagogies and community resurgence. *International Review of Education*, 65, 87–116.
- Coulthard, G. S. (2014). *Red skin, white masks: Rejecting the colonial politics of recognition*. Minneapolis: Minnesota.
- Crosweller, M. , & Tschakert, P. (2020). Disaster management leadership and policy making: A critical examination of communitarian and individualistic understandings of resilience and vulnerability. *Climate Policy*, 21(2), 203–221.
- Dahl, R. A. 1957. The concept of power. *Behavioral Science*, 2(3), 201–215.
<https://doi.org/10.1002/bs.3830020303>
- Das, S. (2011). *Indigenous people's access to land in Northern-belt of Bangladesh: A study of the Santal community* (Master's thesis, Universitetet i Tromsø).
- Datta, R. , (2015). A relational theoretical framework and meanings of land, nature, and sustainability for research with Indigenous communities. *Local Environment: The International Journal of Justice and Sustainability*, 20, 102–113.
- Datta, R. (2017). Traditional storytelling: An effective indigenous research methodology and its implications for environmental research. *AlterNative: An International Journal of Indigenous Peoples*, 14, 35–44. *BMC Health Serv. Res.*, pp. 16, 1–17.
- Datta, R. (2018a). Decolonizing both researcher and research and its effectiveness in Indigenous research. *Research Ethics*, 14(2), 1–24.
- Datta, R. (2018b). Traditional storytelling: An effective Indigenous research methodology and its implications for environmental research. *AlterNative: An International Journal of Indigenous Peoples*, 14(1), 35–44.
- Datta, R. (2019). *Land-water management and sustainability in Bangladesh: Indigenous practices in the Chittagong Hill Tracts*. Routledge.

- Datta, R. (2023). Land-based environmental sustainability: A learning journey from Indigenist researcher. *Polar Geography*, 46(1), 3–17.
- Datta, R. (2024a). Decolonization in practice: A cross-cultural perspective. Canada Scholar Press.
- Datta, R. (2024b). Relationality in indigenous climate change education research: A learning Journey from indigenous communities in Bangladesh. *Australian Journal of Environmental Education*, 40(2), 128–142. doi:10.1017/ae.2024.13
- Datta, R. , & Chapola, J. (2018). Indigenous and Western Environmental Resource Management: A Learning Experience with the Laitu Khyeng Indigenous Community in the Chittagong Hill Tracts (CHT), Bangladesh. *Native American and Indigenous Studies*, 4(2), 52–80.
- Datta, R. , Chapola, J. , Owen, K. , Hurlbert, M. , & Foggini, A. (2024). Indigenous land-based practices for climate crisis adaptations. *Explore*, 20(6), 103042.
- Datta, R. , Chapola, J. , Waucaush-Warn, J. , Subroto, S. , & Hurlbert, M. (2024). Decolonizing meanings climate crisis and land-based adaptations: From Indigenous women's perspectives in Western Canada. *Women's Studies International Forum*.
- Datta, R. , & Kairy, B. (2024). Decolonizing climate change adaptations from indigenous perspectives: Learning reflections from Munda indigenous communities, Coastal Areas in Bangladesh. *Sustainability* , 16(2), 769. <https://doi.org/10.3390/su16020769>
- Datta, R. , & Marion, W. (2021). Ongoing Colonization and Indigenous Environmental Heritage Rights: A Learning Experience with Cree First Nation Communities, Saskatchewan, Canada. *Heritage*, 4, 1388–1399. 10.3390/heritage4030076
- Demos, T. J. (2020). Beyond the world's end: arts of living at the crossing. Duke University.
- Denzin, N. K. , Lincoln, Y. S. , & Smith, L. T. (Eds.). (2008). *Handbook of critical and indigenous methodologies*. Sage.
- Dewan, C. (2021). Misreading the Bengal delta: Climate change, development, and livelihoods directions for emerging scholarship. *Environment and Planning E: Nature and directions . Watershed Ecology and the Environment*, 1, 42–56.
- Dhaka Tribune (2023). Empowering Kheyang community: Native 'Hyow' script keyboard launched www.dhakatribune.com/bangladesh/nation/326134/empowering-kheyang-community-native-hyow-script Retrieved on May 15, 2023 .
- DoE (Department of Environment) . (2015). Fifth National Report to the Convention on Biological Diversity. Department of Environment, Ministry of Environment and Forests, Government of the People's Republic Bangladesh, Dhaka.
- Enarson, E. , & Chakrabarti, P. G. D. (2009, December 10). *Women, Gender and Disaster*. SAGE Publications India.
- Ermine, W. (1995). Aboriginal epistemology. In M. Battiste & J. Barman (Eds.), *First Nations education in Canada: The circle unfolds* (pp. 101–112). UBC Press.
- Fardous, S. (2011). Perception of climate change in Kaptai National Park. *Rural Livelihoods and Protected Landscape: Co-Management in the Wetlands and Forests of Bangladesh*, 186–204.
- Feroz, S.M. , Alam, M.R. , Das, P. , & Al Mamun, A. (2014). Community ecology and spatial distribution of trees in a tropical wet evergreen forest in Kaptai national park in Chittagong Hill Tracts, Bangladesh. *Journal of Forest Research*, 25(2), 311–318.
- Folke, C. (2016). *Resilience* (Republished). *Ecology and Society*, 21(4). <https://doi.org/10.5751/ES-09088-210444>
- Gaillard, J.C. (2012). *The Climate Gap*, Climate and Development Publications, 4, 261–264.
- Galway, L. P. , Esquega, E. , & Jones-Casey, K. (2022). "Land is everything, land is us": Exploring the connections between climate change, land, and health in Fort William First Nation. *Social Science & Medicine*, 294, 114700.
- Garai, J. , Ku, H. B. , & Zhan, Y. (2022). Climate change and cultural responses of indigenous people: A case from Bangladesh. *Current Research in Environmental Sustainability*, 4, 100130.
- Garai, S. , Bhattacharjee, C. , Sarkar, S. , Moulick, D. , Dey, S. , Jana, S. , & Hossain, A. (2022). Microplastics in the soil–water–food nexus: Inclusive insight into global research findings. *Science of the Total Environment*, 946, 173891.
- Garai, S. , Majumder, A. , & Sinha, S. (2022). *Community-based participatory research and Indigenous knowledge systems: Case studies from South Asia*. Springer.
- Goldman, M. J. , Turner, M. D. , & Daly, M. (2018). A critical political ecology of human dimensions of climate change: Epistemology, ontology, and ethics. *WIREs Climate Change*,

9(4), e526. <https://doi.org/10.1002/wcc.526>

Gonzalez, C.G. 2013. Racial capitalism, climate change, and Ecocide. *Wisconsin International Law Journal*, 479–520. Available at: <https://doi.org/10.59015/wilj.VCPQ4704>

Gonzalez, C. G. (2024). Racial capitalism, climate change, and ecocide. *Climate Change, and Ecocide* (April 21, 2024), 41.

Gordon, H. S. J. & Datta, R. (2022). Indigenous communities defining and utilising self-determination as an individual and collective capability. *Journal of Human Development and Capabilities*, 23(2), 182–205. <https://doi.org/10.1080/19452829.2021.1966613>

Greater Wellington (2021). Integrating native planting and flood protection: an operational guide for Greater Wellington. <https://www.gw.govt.nz/assets/CAMA.FLDP.2020.J001105-River-berm-planting-guide-1.7.pdf> Retrieved on May 15, 2023 .

Greene, E. A. (2021). *Learning the Land: An Intergenerational Study of Inuit Knowing* (Doctoral Dissertation, University of British Columbia).

Gunter, B. G. , A. Rahman , and A. F. M. A. Rahman . (2008). How Vulnerable are Bangladesh's Indigenous People to Climate Change? Bangladesh Development Research Center.

Haque, M. N. , Baroi, A. , Gomes, J. , Toppo, A. , Das, R. S. , & Hossain, M. K. (2021a). Effects of climate change and analyzing the Indigenous practices for adaptation to climate change impacts in Chittagong Hill tracts (CHT) of Bangladesh. *Asian Journal of Science and Technology*, 12(10), 11856–11864.

Haque, S. E. , Gazi-Khan, L. , & Rashid, H. (2021b). Climate change mitigation and adaptation strategies, the environment, and impacts of the COVID-19 pandemic: A review of the literature. *Role of Green Chemistry in Ecosystem Restoration to Achieve Environmental Sustainability*, 61–72.

Haque, U. , Hashizume, M. , Kolivras, K. N. , Overgaard, H. J. , Das, B. , & Yamamoto, T. (2021c). Reduced death rates from cyclones in Bangladesh: What more needs to be done? *Bulletin of the World Health Organization*, 100(1), 81–90. <https://doi.org/10.2471/BLT.21.286641>

Haque, A. , & Mondal, M. (2021). Indigenous knowledge-based adaptation to climate change in the coastal regions of Bangladesh. *Environmental Development*, 38, 100619. <https://doi.org/10.1016/j.envdev.2021.100619>

Haque, M. N. , Toppo, A. , Das, R. S. , & Ratan, M. (2022). Impact of agroecology in the agricultural activities of Chittagong Hill Tract (CHT) for improving local food production and livelihoods in Bangladesh. *Journal of Bangladesh Agriculture*, 12(1), 117–129.

Hart, M. A. (2010). Indigenous worldviews, knowledge, and research: The development of an Indigenous research paradigm. *Journal of Indigenous Voices in Social Work*, 1(1), 1–16.

Hiwasaki, L. , Luna, E. , Syamsidik , & Shaw, R. (2014). Local and indigenous knowledge for community resilience: Hydro-meteorological disaster risk reduction and climate change adaptation in coastal and small island communities. UNESCO.

Hoque, M. Z. , Cui, S. , Lilai, X. , Islam, I. , Ali, G. , & Tang, J. (2019). Resilience of coastal communities to climate change in Bangladesh: Research gaps and future directions. *Watershed Ecology and the Environment*, 1, 42–56. <https://doi.org/10.1016/j.wsee.2019.10.001>

Hossain, M.K. (1998). Role of Plantation Forestry in the Rehabilitation of Degraded and Secondary Hill Forests of Bangladesh. In: *Proceedings of the IUFRO Inter-Divisional Seoul Conference-Forest Ecosystem and Land use in Mountain Areas*, 12–17 October, 1998, Seoul, Korea. pp. 243–250.

Hossain, M.K. , Alam, M.K. , Miah, M.D. (2008). Forest restoration and rehabilitation in Bangladesh. In: D.K. Lee (Ed.), *Keep Asia Green, IUFRO World Series Volume 20-III "South Asia"*. IUFRO, pp. 21–66.

Hossain, M. S. , & Deb, U. K. (2021). Community-based adaptation to climate change in Bangladesh: Achievements and challenges. *Journal of Environmental Management*, 299, 113686. <https://doi.org/10.1016/j.jenvman.2021.113686>

Hossain, M. S. , & Sakai, T. (2021). Vulnerability and adaptation to climate change in coastal Bangladesh. *Sustainability*, 13(7), 3765. <https://doi.org/10.3390/su13073765>

Hossain, M. , Saha, C. , Rubaiot Abdullah, S. M. , Saha, S. , & Siddique, M. R. H. (2016). Allometric biomass, nutrient and carbon stock models for *Kandelia candel* of the Sundarbans, Bangladesh. *Trees*, 30, 709–717.

Hunsberger, C. , Corbera, E. , Borrás Jr, S. M. , Franco, J. C. , Woods, K. , Work, C. , de la Rosa, R. , Eang, V. , Herre, R. , & Kham, S. S. (2017). Climate change mitigation, land grabbing

and conflict: towards a landscape-based and collaborative action research agenda. *Canadian Journal of Development Studies/Revue canadienne d'études du développement*, 38(3), 305–324.

Iftekhar, M.S. , & Hoque, A.K.F. (2005). Causes of forest encroachment: An analysis of Bangladesh. *GeoJournal*, 62(1), 95–106. <https://doi.org/10.1007/s10708-005-7917-z>

Imperiale, A. J. , & Vanclay, F. (2024). Understanding the social dimensions of resilience: The role of the social sciences in disaster risk reduction, climate action, and sustainable development. *Sustainable Development*, 32(2), 1371–1375.

IPCC (Intergovernmental Panel on Climate Change) . (2007). Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change: Summary for Policymakers. Intergovernmental Panel on Climate Change: Brussels, Belgium.

IPCC . (2014). Annex II: Glossary in: *Climate change 2014: Impacts, adaptation, and vulnerability*. In Contribution of working group II to the fifth assessment report of the intergovernmental panel on climate change (pp. 1757–1776). Cambridge University Press.

IPCC (2023). Intergovernmental Panel on Climate Change (IPCC). Summary for Policymakers. In *Climate change 2020: The physical science basis*. Contribution of working group I to the sixth assessment report of the intergovernmental panel on climate change (pp. 3–32). Cambridge University Press.

Islam, M. R. , Ali, A. , & Khan, H. A. (2022). Integrating Indigenous knowledge into flood risk management: Insights from Bangladesh. *International Journal of Disaster Risk Reduction*, 76, 103005. <https://doi.org/10.1016/j.ijdrr.2022.103005>

Islam, S. D. U. , Bhuiyan, M. A. , & Ramanathan, A. (2015). Climate Change Impacts and Vulnerability Assessment in Coastal Region of Bangladesh: A Case Study on Shyamnagar Upazila of Satkhira District. *Journal of Climate Change*, 1(1,2), 37–45. <https://doi.org/10.3233/jcc-150003>

Islam, M. S. , Hasan, G. J. , & Chowdhury, M. A. I. (2006). Destroying hills in the northeastern part of Bangladesh: A qualitative assessment of extent of the problem and its probable impact. *International Journal of Environmental Science & Technology*, 2, 301–308.

Islam, A.R. , Hasan, M.M. , Islam, M.T. , & Tanaka, N. (2022). Ethnobotanical study of plants used by the Munda ethnic group living around the Sundarbans, the world's largest mangrove forest in southwestern Bangladesh. *Journal of Ethnopharmacology*, 285, 114853.

Islam, K.K. , & Hyakumura, K. (2021). The potential perils of Sal forests land grabbing in Bangladesh: an analysis of economic, social and ecological perspectives. *Environment Development and Sustainability* 23(1), 1–23. DOI:10.1007/s10668-021-01301-7

Islam, M. R. , & Shamsuddoha, M. (2018). Socioeconomic implications of climate change for Bangladesh. *Asian Development Review*, 35(2), 94–118. https://doi.org/10.1162/adev_a_00111

Johnson, D. E. , Parsons, M. , & Fisher, K. (2022). *Indigenous climate change adaptation: New justice and community engagement*. Routledge.

Kapoor, K. (2008). *The Postcolonial Politics of Development*, Routledge.

Karistie, J. F. , Ridho, A. , Pangestika, F. A. , & Bisri, M. B. F. (2023). Women participation in disaster risk management practices in Indonesia: A systematic review. *EasyChair.org*.

Karlsson, S. (2020). Transforming the climate change-gender nexus?: Revisiting gender mainstreaming in the context of climate change and disaster risk reduction: experiences from the Swedish Embassy in Bangkok.

Khan, A. M. (1999). *The Maghs: A Buddhist Community in Bangladesh*. University Press Limited.

Khan, Z.H. (2015). Study on water supply system at Rangamati Municipal Area. *Journal of Environmental Engineering*, 3(1), 15–22.

Khan, A. , Fux, B. , Su, C. , Dubey, J. P. , Dardé, M. L. , Ajioka, J. W. , ... Sibley, L. D. (2007). Recent transcontinental sweep of *Toxoplasma gondii* driven by a single monomorphic chromosome. *Proceedings of the National Academy of Sciences*, 104(37), 14872–14877.

Khisa, S. K. , & Mohiuddin, M. (2006). Shrinking jum and changing livelihoods in the Chittagong Hill Tracts of Bangladesh. *Shifting Cultivation, Livelihood and Food Security*, 41.

Kimmerer, R. (2013). *Braiding sweetgrass: Indigenous wisdom, scientific knowledge and the teachings of plants*. Milkweed editions.

Kirkby, P. , Williams, C. , & Huq, S. (2015). A brief overview of Community-Based Adaptation. *International Centre for Climate Change and Development: Briefing paper*.

- Kovach, M. (2009). *Indigenous Methodologies: Characteristics, Conversations, and Contexts*. University of Toronto Press.
- Kovach, M. (2010a). *Indigenous Methodologies: Characteristics, Conversations, and Contexts*. University of Toronto Press.
- Kovach, M. (2010b). Conversational method in Indigenous research. *First Peoples Child and Family Review*, 5, 40–48.
- Kovach, M. (2016). Doing indigenous methodologies. *The SAGE Handbook of Qualitative Research*, 383–406.
- Kovach, M. (2021). *Indigenous methodologies: Characteristics, conversations, and contexts*. University of Toronto Press.
- Leonard, K. (2021). WAMPUM Adaptation framework: Eastern coastal Tribal Nations and sea level rise impacts on water security. *Climate and Development*, 1–10. <https://doi.org/10.1080/17565529.2020.1862739>
- Lewis, J. (2003). Design issues. In J. Ritchie & J. Lewis (Eds.), *Qualitative research practice* SAGE publications.
- Little Bear, L. (2013). Indigenous knowledge and the Western world: A critical analysis. In N. J. (Ed.), *Knowledge, learning, and Indigenous knowledge systems* (pp. 34–47). Oxford University Press.
- Lukes, S. (2005). *Power: A radical view* (2nd ed.). Palgrave Macmillan.
- Mahmood, H. , Siddique, M. R. H. , Rubaiot Abdullah, S. M. , Costello, L. , Matieu, H. , Iqbal, M. Z. , & Akhter, M. (2019). Which option best estimates the above-ground biomass of mangroves of Bangladesh: Pantropical or site-and species-specific models? *Wetlands Ecology and Management*, 27, 553–569.
- Mahmud, I. (2024, 31 January). Over 4,000 illegal brick kilns. Prothom-alo. <https://en.prothomalo.com/environment/vks7nmkf00>
- Mahmud et al. (2017). The effects of Teak monoculture on forest soils: A case study in Bangladesh. *Journal of Forest Research*, 29, 1111–1120 (2018). <https://doi.org/10.1007/s11676-017-0515-3>
- Maldonado, J. K. , Shearer, C. , Bronen, R. , Peterson, K. , & Lazrus, H. (2014). The impact of climate change on tribal communities in the US: Displacement, relocation, and human rights. *Climate change and indigenous peoples in the United States: Impacts, experiences and actions*, pp. 93–106.
- Mallick, B. (2019). The nexus between socio-ecological system, livelihood resilience, and migration decisions: Empirical evidence from Bangladesh. *Sustainability*, 11(12), 3332.
- Markham, F. , Smith, D. & Morphy, F. (2020). Indigenous Australians and the COVID-19 Crisis: Perspectives on Public Policy. *Topical Issue no. 1/2020*, Centre for Aboriginal Economic Policy Research, Australian National University, Canberra.
- Marma, A. (2009). *The Livelihood of Marma Community in Bangladesh*. Bukkyo Bunka Kenkyo Sho, Vol. 48, pp. 17–22. Kyoto: Ryukoku University.
- Mason, S. , & Rigg, J. (2019). *Revisiting Indigenous knowledge systems and community engagement: New perspectives and case studies*. Routledge.
- Mathbor, G. M. (2007). Enhancement of community preparedness for natural disasters. *International Social Work*. <https://doi.org/10.1177/0020872807076049>
- McGregor, D. (2014). Traditional knowledge and water governance: the ethic of responsibility. *AlterNative*, 10(5), 493–507.
- McGregor, D. (2018). From “Decolonized” to Reconciled Research: Moving from Decolonizing Research to Reconciliation Research in Canada. *AlterNative: An International Journal of Indigenous Peoples*, 14(3), 218–226. <https://doi.org/10.1177/1177180118792332>
- McIlwain, L. , Holzer, J. , Baird, J. , & Baldwin, C. (2023). Power Research in Adaptive Water Governance and beyond: A Review. *Ecology and Society*, 28(2). <https://doi.org/10.5751/es-14072-280222>
- McVittie, J. et al. (2019). Relationality and Decolonization in Children and Youth Garden Spaces. *Australian Journal of Environmental Education*, 35, 93–109. [CrossRef].
- Mey, W. (1984). (Ed). *Genocide in the Chittagong Hill Tracts, Bangladesh*. Document No. 51, Copenhagen: International Workgroup for Indigenous Affairs (IWGIA).
- Mignolo, W. D. , & Walsh, C. E. (2018). *On decoloniality: Concepts, analytics, praxis*. Duke University Press.

Ministry of Health and Family Welfare . (2016). Tribal/Ethnic Health Population and Mintenbeck, A. Alegría, M. Craig, S. Langsdorf, S. Lösckke, V. Möller, A. Okem, B. Rama (eds.)). (2023). Cambridge University Press, Cambridge, UK and New York, NY, USA, pp. 1457–1579, doi:10.1017/9781009325844.012

MoFA (2018). Climate Change Profile: Bangladesh. Ministry of Foreign Affairs, Government of the People's Republic of Bangladesh.

Mohiuddin, M. (2009). Studies on Traditional Knowledge of Plant Uses and Their Conservation Prospects by Upland Communities in Bandarban Hill District, Bangladesh, PhD Thesis submitted to the University of Chittagong, Bangladesh.

Mohiuddin, S. , Saadat, S. , & Nisar, N. (2012). Oral health knowledge and oral hygiene practices among private and public school teachers of Karachi city. *Journal of the Dow University of Health Sciences (JDUHS)*, 9(2), 64–70.

Mohsin, A. (1995). The politics of nationalism: the case of the Chittagong Hill Tracts, Bangladesh, PhD thesis, University of Cambridge, Cambridge.

Mohsin, A. A. (2002). Religion, politics and security: The case of Bangladesh. In Satu P. Limaye , Robert G. Wirsing , Mohan Malik (Eds.), *Religious Radicalism and Security in South Asia*, 467–488. Asia-Pacific Center for Security Studies.

Morrison, B. D. , Heath, K. , & Greenberg, J. A. (2019). Spatial scale affects novel and disappeared climate change projections in Alaska. *Ecology and Evolution*, 9(21), 12026–12044.

Muhammed, N. , Koike, M. , & Bitte, R. A.W. , (2004). Investment analysis of teak (*Tectona grandis*): a case study on Sylhet Forests of Bangladesh. *Journal of Forest Planning*, 10(2), 77–86.

Muhammed, N. , Koike, M. , Haque, F. , Chowdhury, M.S.H. , & Halim, M.A. , (2007). Assessment of Teak (*Tectona grandis*) timber sale and its associated price influencing factors: a case study on Sylhet forests of Bangladesh. *International Journal of Sustainable Agricultural Technology*, 3(1), 42–48.

Mukul, S. A. , Rashid, A. Z. M. M. , & Khan, N. A. (2021). Indigenous people and their livelihoods: Learning from the conservation practices in the Chittagong Hill Tracts, Bangladesh. *Forest Policy and Economics* , 126, 102415. <https://doi.org/10.1016/j.forpol.2021.102415>

Mungazi, D. A. (1986). Application of Memmi's Theory of the Colonizer and the Colonized to the Conflicts in Zimbabwe. *The Journal of Negro Education*, 55(4), 518–534. <https://doi.org/10.2307/2294835>

Murphy, B. (2016). Testing the Links between Soil Security, Sustainable Land Management Practices and Land Evaluation. Chapter 10. In Field, Damien , Morgan, Cristine L. , McBratney, Alex B. (Eds.) *Global Soil Security Symposium. Progress in Soil Science Series.* (Springer Publishers).

Mustajib, S. (2020). Impact of Climate Change on Indigenous Communities in Bangladesh <https://www.internationalaffairshouse.org/impact-of-climate-change-on-indigenous-communities-in-bangladesh/>

Muthukrishnan, R. , & Datta, R. (2023). Indigenous practice and community-led climate change solutions: The relevance of traditional cosmic knowledge systems. Taylor & Francis.

Nasher, N. R. , Karim, K. R. , & Islam, M. Y. (2022). Spatio-temporal variation of cyclone intensity over the coastal region of Bangladesh using 134 years track analysis. *Tropical Cyclone Research and Review*, 11(1), 16–25.

Newing, H. (2010). *Conducting Research in Conservation: Social Science Methods and Practice.* Routledge.

Niamir, L. , & Pachauri, S. (2023, March 3). From social and natural vulnerability to human-centered climate resilient coastal cities. *Frontiers in Sustainable Cities*, 5. <https://doi.org/10.3389/frsc.2023.1137641>

Nightingale, E. , & Richmond, C. A. (2022). Building structures of environmental repossession to reclaim land, self-determination and Indigenous wellness. *Health & Place*, 73, 102725.

Nursey-Bray, M. (2023). Building Collaborative Models for Change: Engaging Indigenous People and Country into in Socially just Conservation. In *Rural Development for Sustainable Social-ecological Systems: Putting Communities First* (pp. 209–227). Springer International Publishing.

Nursey-Bray, M. , Palmer, R. (2018). Country, climate change adaptation and colonization: insights from an Indigenous adaptation planning process, Australia. *Heliyon*, 4. <https://doi.org/10.1080/17565529.2021.1993627>

- Nursey-Bray, M. , Palmer, R. , Chischilly, A.M. , Rist, P. , Yin, L. (2022). Old Ways for New Days: Indigenous Survival and agency in Climate changed Times. Springer Briefs in Climate Studies, Springer, Cham, Switzerland. <https://doi.org/10.1007/978-3-030-97826-6>
- Nutrition Plan for the Health, Population and Nutrition Sector Development Program (HPNSDP) P . (Ed.), (2023). *Survival on the Fringe*, Adivasis of Bangladesh (pp. 43–51). Society for Paul, S. K. , & Routray, J. K. (2022). Post-Cyclone Livelihood Strategies and Security Status of Coastal Households in Bangladesh: An Empirical Study. In *Climate Change and Risk in South and Southeast Asia* (pp. 36–58). Routledge.
- PCJSS (2023). Population in CHT, The Parbatya Chattagram Jana Samhati Samiti (PCJSS). <https://www.pcjss.org/population-in-cht/>
- Peltier, C. (2018). An application of Two-Eyed Seeing: Indigenous research methods with participants experiencing homelessness. *International Journal of Qualitative Methods*, 17(1), 1–10. <https://doi.org/10.1177/1609406918812346>
- Pender, J.S. (2008). What Is Climate Change? And How It Will Effect Bangladesh. Briefing Population & Housing Census (2022). Population & Housing Census 2022 Preliminary Report, Bangladesh bureau of Statistics and Information Division, Ministry of Planning, The Government of the Peoples Republic of Bangladesh, [https://sid.portal.gov.bd/sites/default/files/files/sid.portal.gov.bd/publications/01ad1ffe_cfef_4811_af97_594b6c64d7c3/PHC_Preliminary_Report_\(English\)_August_2022.pdf](https://sid.portal.gov.bd/sites/default/files/files/sid.portal.gov.bd/publications/01ad1ffe_cfef_4811_af97_594b6c64d7c3/PHC_Preliminary_Report_(English)_August_2022.pdf)
- Rabbani, M.G. et al. (2018). *Changing Climate Hazards in the Coast: Risks and Impacts on Satkhira, One of the Most Vulnerable Districts in Bangladesh*, Intechopen: Rijeka Croatia.
- Rahman, A. E. M. O. (2019). *An analysis of language shift and maintenance among Marma community of Bangladesh* (Doctoral dissertation, Brac University).
- Rahman, M.S. , Ahmed, N.F. , Ali, M. , Abedin, M.M. & Islam, M.S. (2019). Determinants of tobacco cultivation in Bangladesh. *Tobacco Control*, 29(6), 692–694. <https://doi.org/10.1136/tobaccocontrol-2019-055167>
- Rahman, S. , & Biswas, A. (2021). Building resilience through community-based adaptation in rural Bangladesh. *International Journal of Climate Change Strategies and Management*, 13(3), 367–382. <https://doi.org/10.1108/IJCCSM-04-2020-0038>
- Rahman, M. S. , & Khan, M. A. (2022). Vulnerability and adaptation to climate change in Bangladesh: A comprehensive review. *Environmental Research*, 208, 112581. <https://doi.org/10.1016/j.envres.2022.112581>
- Rahman, M. S. , Khan, M. A. , & Haque, C. E. (2020). Indigenous knowledge and disaster risk reduction: An approach to sustainable community development. *International Journal of Disaster Risk Reduction*, 46, 101618. <https://doi.org/10.1016/j.ijdrr.2020.101618>
- Rahman, M.M. , Tasnim, F. , Uddin, A. , Chayan, M.S.I. , Arif, M.S.I. , & Asikunnaby, H. M. T. (2023). Assessing vulnerability in ethnic Munda community: A study on a cyclone-prone area of Bangladesh. *International Journal of Disaster Risk Reduction*, 95, 103884.
- Rasul, G. (2007). The role of Indigenous knowledge in community-based natural resource management: Experiences from Bangladesh. *International Journal of Sustainable Development & World Ecology*, 14(3), 205–217. <https://doi.org/10.1080/13504500709469794>
- Rasul, G. , Thapa, G.B. , & Zoebisch, M.A. (2004). Determinants of land-use changes in the Chittagong Hill Tracts of Bangladesh. *Applied Geography*, 24(3), 217–240.
- Redvers, J. (2020a). “The land is a healer”: perspectives on land-based healing from indigenous practitioners in northern Canada. *International Journal of Indigenous Health*, 15(1), 90–109.
- Redvers, J. (2020b). “The land is a healer”: Perspectives on land-based healing from Indigenous practitioners in northern Canada. *International Journal of Indigenous Health*, 15(1), 90–107.
- Revi, A. (2008, April). Climate change risk: An adaptation and mitigation agenda for Indian cities. *Environment and Urbanization*, 20(1), 207–229. <https://doi.org/10.1177/0956247808089157>
- Rokon, S. , & Jiggasha, J. (n.d.). (A Collection of Interviews on Climate Change), interviewed Dr. Salimul Huq, pp. 22–27.
- Roy, C. R. (2000a). *Land rights of the Indigenous peoples of the Chittagong Hill Tracts, Bangladesh*. IWGIA Document No. 99.
- Roy, M. (2000b). Cultural heritage and its role in community-based research: Experiences from Bangladesh. *Bangladesh Journal of Sociology*, 2(1), 29–42.

- Roy, R.D. (1998). Land rights: Land use and indigenous peoples in the Chittagong Hill Tracts. In P. Gain (Ed.), *Bangladesh: Land, forest and forest people* (pp. 53–118). Society for Environment and Human Development (SEHD).
- Roy, R.D. (2002). *Land and Forest Rights in the Chittagong Hill Tracts*. International Centre for Climate Change and Development (ICIMOD).
- Roy, S. (2010). Cultural heritage and community-based research: The Bangladeshi context. In Moody, J. & Small, S. (Ed.), *Research ethics and cultural contexts* (pp. 97–112). Cambridge University Press.
- Roy, S. (2024a). Livelihood Resilience of the Indigenous Munda Community in the Bangladesh Sundarbans Forest. In: Leal Filho, W. (eds) *Handbook of Climate Change Resilience*. Springer. https://doi.org/10.1007/978-3-319-93336-8_10
- Roy, S. (2024b). *Negotiating Vulnerability and Resilience: Disaster Education, Development, and Children in Coastal Bangladesh*. Indiana University.
- Roy, D. , & Raja, G. (2000). *The Chittagong Hill Tracts: life and nature at risk*. (No Title).
- Saha, K. , & Choudhury, S. J. (2021). Traditional settlement and dwelling culture of diasporic: Manipuri community in Bangladesh. *Journal of Business, Society and Science*, 8(1), 93–113.
- Saha, K. , & Chowdhury, M. S. L. (2021). *Traditional Settlement and Dwelling Culture of Diasporic*.
- Saha, M.K. et al. (2014). Changing Profile of Cyclones in the Context of Climate Change and Adaptation Strategies in Bangladesh Institute of Planners, 2075, 63–78.
- Sarkar, O. T. , & Mukul, S. A. (2024). Challenges and institutional barriers to forest and landscape restoration in the Chittagong Hill Tracts of Bangladesh. *Land*, 13(4), 558.
- Sarkar, J. , & Sarkar, S. (2015). Corporate social responsibility in India—An effort to bridge the welfare gap. *Review of Market Integration*, 7(1), 1–36.
- Sarwar, A. K. M. G. (2019). Biodiversity and conservation of higher plants in Bangladesh: Present status and future prospects. *Biodiversity and Conservation*, 259–288.
- Sarwar, A. K. M. G. , Malaker, J. C. , & Dutta, M. J. (2008). Floristic composition in the campus of Bangladesh Tea Research Institute – I. Angiosperms. *Journal of Agroforestry and Environment* , 2, 147–152.
- Schendel, V. W. , Mey, W. , & Dewan, K. A. (2001). *The Chittagong Hill Tracts: Living in a borderland*. The University Press Limited.
- Seleka, M. L. (2017). *Indigenous Women’s Leadership and Disaster Resilient Development in Botswana: Fad or Reality?*
- Shaffril, H. A. M. , Idris, K. , Sahharon, H. , Samah, A. A. , & Samah, B. A. (2020). Adaptation towards climate change impacts among highland farmers in Malaysia. *Environmental Science and Pollution Research*, 27, 25209–25219.
- Shammin, M.R. et al. (2022). A Framework for Climate Resilient Community-Based Adaptation, In *Climate Change and Community Resilience*, Haque, E. (ed), Springer, pp. 11–30.
- Sharmeen, S. (2013). Politics of development and articulation of indigenous identity: The formation of Munda identity in Barind, Bangladesh. *International Journal of Asia Pacific Studies*, 9, 142–160.
- Sharmin, Z. , & Islam, M. (2013). Consequences of climate change and gender vulnerability: Bangladesh perspective. Available at SSRN 2200116.
- Shaw, R. , Y. Luo , T.S. Cheong , S. Abdul Halim , S. Chaturvedi , M. Hashizume , G.E. Insarov , Y. Ishikawa , M. Jafari , A. Kitoh , J. Puhlin , C. Singh , K. Vasant , and Z. Zhang , 2022: Asia. In: *Climate Change 2022: Impacts, Adaptation and Vulnerability*. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [H.-O. Pörtner, D.C. Roberts, M. Tignor, E.S. Poloczanska, K. Shefer, T. , & Bozalek, V. (2022). Wild swimming methodologies for decolonial feminist justice-to-come scholarship. *Feminist Review*, 130(1), 26–43.
- Siddiq, A.B. , Habib, A. , & Chowdhury, A.H. (2018). Hunting-gathering subsistence of Munda tribe in tropical rainforest of Northeastern Bangladesh. *Cultures and Societies*, 1, 59–71.
- Siddique, F. , Abbas, R. Z. , Mansoor, M. K. , Alghamdi, E. S. , Saeed, M. , Ayaz, M. M. , ... Hussain, I. (2021). An insight into COVID-19: A 21st century disaster and its relation to immunocompetence and food antioxidants. *Frontiers in Veterinary Science*, 7, 586637.
- Simpson, L. B. (2014). Land as pedagogy: Nishnaabeg intelligence and rebellious transformation. *Decolonization: Indigeneity, Education & Society*, 3(3), 1–25.

- Simpson, L. B. (2017). *As We Have Always Done: Indigenous Freedom through Radical Resistance*. University of Minnesota Press.
- Singh, K. J. (2009). Sacred Groves: The Last Man-Made Carbon Sink. *International Journal of Climate Change: Impacts and Responses*, 1(1), 119–128.
- Singh, S. (2020). Yongchak: The Dying Bean in Manipur. https://www.epao.net/epSubPageExtractor.asp?src=news_section.opinions.Yongchak_The_Dying_Bean_in_Manipur_By_Sanjenbam_Jugeshwor
- Singh, C. , Iyer, S. , New, M. G. , Few, R. , Kuchimanchi, B. , Segnon, A. C. , & Morchain, D. (2021). Interrogating 'effectiveness' in climate change adaptation: 11 guiding principles for adaptation research and practice. *Climate and Development*, 1–15. In Press. <https://doi.org/10.1080/17565529.2021.1964937>
- Singha, R. (2015). Indigenous housing knowledge among the Meetei of Bangladesh [Journal]. *The Journal of Social Studies*, 148, 56–77.
- Singha, R. (2022). Retaining Indigenous Knowledge against western technological advancement: A study of Manipuri handloom weavers in Bangladesh Charles Darwin University]. Darwin.
- Sioui, M. , & R. McLeman (2014). Asserting mino pimàdiziwin on Unceded algonquin territory: Experiences of a Canadian “non-status” first nation in re-establishing its traditional land ethic. *AlterNative*, 10(4), 354–375, doi:10.1177/117718011401000404
- SIPCC (2007). IPCC fourth assessment report (AR4). *Climate Change*, 374.
- Skogvang (2013). Legal questions regarding mineral exploration and exploitation in indigenous areas. *Michigan State International Law Review*, 22, 321.
- Smith, L. (1999a). *Decolonizing Methodologies: Research and Indigenous Peoples*. University of Otago Press.
- Smith, L. T. (1999b). *Decolonizing methodologies: Research and indigenous peoples*. Zed Books.
- Smith, L. T. (2006). Choosing the margins: The role of research in indigenous struggles for social justice. In N. K. Denzin & M. D. Giardina (Eds.), *Qualitative inquiry and the conservative challenge*. (pp. 151–173). Left Coast Press.
- Smith, L. T. (2018). *Decolonizing research: Indigenous storywork as methodology*. Bloomsbury Publishing.
- Smith, L. T. (2021). *Decolonizing Methodologies: Research and Indigenous Peoples* (3rd ed.). Zed Books.
- Smith, H. A. , & Sharp, K. (2012). Indigenous climate knowledges. *Wiley Interdisciplinary Reviews: Climate Change*, 3(5), 467–476.
- Steinhauer, E. (2002). Thoughts on an Indigenous research methodology. *Canadian Journal of Native Education*. 26(2), 69–81.
- Strong, P. T. (2005). Recent Ethnographic Research on North American Indigenous Peoples, *Annual Review of Anthropology*, 34, 253–268 [CrossRef].
- Styres, S. D. (2011). Land as first teacher: A philosophical journeying. *Reflective Practice*, 12(6), 717–731.
- Tahir, F. , Rasheed, R. , Mahmood, S. , Chohan, K. , & Ahmad, S. R. (2024). REDD+ framework and forest sustainability in Pakistan versus other South Asian countries: A multi-criteria-based analysis. *Environment, Development and Sustainability*, 26(3), 6471–6492.
- Taru . (2005). *Disaster Management Plan Blueprint for the Hazira Area Development Committee; Taru*.
- Thapa, G. B. , & Rasul, G. (2006). Implications of changing national policies on land use in the Chittagong Hill Tracts of Bangladesh. *Journal of Environmental Management*, 81, 441–453. doi: 10.1016/j.jenvman.2005.12.002
- The Business Standard (2024). “Vanishing forests, receding waters and impending disaster in the Sangu river basin” <https://www.tbsnews.net/features/panorama/vanishing-forests-receding-waters-and-impending-disaster-sangu-river-basin-840501>
- The Daily Star (2023). Heavy rain inundates parts of Bandarban; 165 mm rainfall recorded in 24hrs. <https://www.thedailystar.net/news/bangladesh/news/heavy-rain-inundates-parts-bandarban-165-mm-rainfall-recorded-24hrs-3387881> Retrieved on May 15, 2023 .
- The Indigenous World 2023 . (2023). *The Indigenous World*, Issue. IWGIA. <https://www.iwgia.org/en/resources/indigenous-world>

- Thomas, R. A. (2005). Honouring the oral traditions of my ancestors through storytelling. *Research as Resistance: Critical, Indigenous, and Anti-oppressive Approaches*, 237–254.
- Thongam, D. (2008). Manipuri nachom. Bangladesh Manipuri Sahitya Parishad.
- Topna, E. (2002). Introducing the Munda people, Platinum Jubilee 1927–2002, Platinum Jubilee Committee, Dinajpur Catholic Diocese.
- Tosun, J. Addressing climate change through climate action. *Clim Action* 1, 1 (2022). <https://doi.org/10.1007/s44168-022-00003-8>
- Tubridy, F. et al. (2022). Managed Retreat and Coastal Climate Change Adaptation: The Environmental Justice Implications and Value of a Coproduction approach. *Land Use Policy*, 114, 105960.
- Tuck, E. , & Yang, K. W. (2012). Decolonization is not a metaphor. *Decolonization: Indigeneity , Education & Society*, 1(1), 1–40.
- Tuck, E. , & Yang, K. W. (2014). *Youth Resistance Research and Theories of Change*. Routledge.
- Tuck, E. et al. (2015). *Place in Research: Theory, Methodology and Method*. Routledge.
- Uddin, M. M. (2014). Land rights of the Indigenous peoples of the Chittagong hill tracts in Bangladesh: A historical overview. *Law Vision*, 13, 20–23.
- Ullah, M. S. (2024). Geospatial Modeling of Potential Landslide Hazard Estimation for Better Management in the Bandarban District of Bangladesh. In *Landslide: Susceptibility, Risk Assessment and Sustainability: Application of Geostatistical and Geospatial Modeling* (pp. 669–693). Springer Nature Switzerland.
- Ullah, M. N. , Rahman, M. M. , & Hossain, M. A. (2022). Integrating Indigenous knowledge into environmental management: Lessons from Bangladesh. *Environmental Management*, 69(5), 703–715. <https://doi.org/10.1007/s00267-022-01615-0>
- Van Ryneveld, T.N. , & Islar, M. (2022). Coloniality as a Barrier to Climate Action: Hierarchies of Power in a Coal-Based Economy. *Antipode*, 55(3), 958–981.
- Van Schendel, W. (2023). Rebuffing Bengali dominance: postcolonial India and Bangladesh. *Critical Asian Studies*, 55(1), 105–135.
- Väyrynen, T. , Parashar, S. , Féron, É. , & Confortini, C. C. (Eds.). (2021). *Routledge handbook of feminist peace research*. Routledge.
- Wheeler, W. (2001). Thought on the Responsibilities for Indigenous/Native Studies, Indian Studies Department, Saskatchewan Indian Federated College. *The Canadian Journal of Native Studies*, XXI(1), 97–104.
- Wigtill, G. , Hammer, R. B. , Kline, J. D. , Mockrin, M. H. , Stewart, S. I. , Roper, D. , & Radeloff, V. C. (2016). Places where wildfire potential and social vulnerability coincide in the coterminous United States. *International Journal of Wildland Fire*, 25(8), 896. <https://doi.org/10.1071/wf15109>
- Wigtill, A. (2022). Is there a place for “plagiarism detection software” in an academic library? *Public Services Quarterly*, 18(2), 129–135.
- Wijsman, K. , & Feagan, M. (2019). Rethinking knowledge systems for urban resilience: Feminist and decolonial contributions to just transformations. *Environmental Science & Policy*, 98, 70–76.
- Wildcat, M. (2020). *Weaving Two Worlds: Indigenous Land-Based Pedagogy and Decolonization*. University of Regina Press.
- Wildcat, M. , McDonald, M. , Irlbacher-Fox, S. , & Coulthard, G. (2014). *Learning from the Land*.
- Wilson, S. (2001). What is indigenous research methodology? *Canadian Journal of Native Education*, 25(2), 175–179.
- Wilson, S. (2003). Progressing toward an Indigenous research paradigm in Canada and Australia. *Canadian Journal of Native Education*, 27(2), 161–178.
- Wilson, S. (2008). *Research is ceremony: Indigenous research methods*. Fernwood Publishing.
- Wilson, S. (2020). *Research is ceremony: Indigenous research methods*. Fernwood Publishing.
- Wilson, A. C. , & Yellow Bird, M. (2005). *For Indigenous Eyes Only: A Decolonization Handbook*. School of American Research Press.
- World Bank Group (2024). *Climate Risk Country Profile*. Bangladesh. Washington, CD. Available at: https://climateknowledgeportal.worldbank.org/sites/default/files/country-profiles/16813-WB_Bangladesh%20Country%20Profile-WEB.pdf