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## Adapting to Climate Change Through Disaster Risk Reduction in the Caribbean: Lessons from the Global South in Tackling the Sustainable Development Goals

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### Introduction

Small Island Development States (SIDS) are at the forefront of global agendas for climate-related environmental challenges, as reflected in extant documentation of agreements endorsed by international organisations, including the SIDS Accelerated Modalities of Action (SAMOA) Pathway (UNGA, 2014), the Paris Agreement (UNFCCC, 2015), the 2030 Agenda for Sustainable Development (UNGA, 2015), the Addis Ababa Action Agenda (UN, 2015) and the Sendai Framework for Disaster Risk Reduction (UNISDR, 2015). Nevertheless, there is still insufficient recognition in the academic literature of the valuable information

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provided by SIDS about climate change resilience across multiple countries and regions (Robinson, 2017), and about how their knowledge can inform adaptation pathways at a global scale (See also UNFCCC, 2017). This absence of the SIDS' knowledge in adaptation research discourses (which emerged in the mid-1990s) neglects their leading role in raising awareness of climate change and implementing adaptation strategies ever since the 1980s (Ourbak & Magnan, 2018; Petzold & Magnan, 2019).

This chapter brings forth the experiential knowledge of the SIDS in transnational cooperation for tackling the following Sustainable Development Goals (SDGs) through disaster risk reduction initiatives and tools for climate change adaptation: Goal 3) Good health and wellbeing; Goal 4) Quality education; Goal 9) Industry, innovation and infrastructure; Goal 11) Sustainable cities and communities; Goal 13) Climate action; Goal 14) Conserve and sustainably use the oceans, seas and marine resources for sustainable development; Goal 16) Peace, justice and strong institutions and Goal 17) Partnerships. I analyse some of the strategies, tools and impacts of adaptation initiatives led by Caribbean SIDS through triangulation with international organisations and the European Union, within the African, Caribbean and Pacific-European Union Natural Disaster Risk Reduction (ACP-EU NDRR) Program, in order to illustrate how adaptation works on the ground and to discuss successful actions that have proven to be replicable and scalable. Although the program includes territories from Africa, the Pacific and the Caribbean, the study focuses on the latter region, where a high concentration of culturally diverse SIDS exposed to extreme weather events has shaped a policy landscape that enables the study of the role of regional policies in tackling the SDGs within the contexts of extreme vulnerability to global warming and sea level rise. Finally, the chapter proposes to gather lessons from the Caribbean SIDS that are instructive at a global scale and to provide guidelines for the articulation of a theoretical framework for adaptation research that translates into transformative policies and action, shaped by both the needs and the knowledge of vulnerable and resilient people.

The study combines critical reading of reports, briefs and theoretical documents with a review of empirical experience of Caribbean SIDS within the UNDP-ACP-EU Natural Disaster Risk Reduction (NDRR) Program, in order to discuss both the terms and perspectives advancing

actionable knowledge in adaptation research. In light of the SIDS' connectedness and frontline position in participatory climate action, I propose the articulation of a theoretical framework for adaptation research implementation that looks at transnational and local experiences to co-develop transferrable yet context-specific adaptive strategies and tools with and for people. The chapter draws mainly upon empirical experience reflected in reports and academic research relating to the SIDS' transference of knowledge and implementation of adaptive capacities with people's participation across vulnerable communities.

## 'Not-So-Natural' Disasters and Climate Justice

The Africa, Caribbean and Pacific (ACP) group of countries has seventy-nine member states, which are considered to be among the most vulnerable to disasters caused by extreme weather and to the adverse impacts of climate change (ACP-EU NDRRP, 2019). Among these countries, thirty-seven are SIDS that are being directly affected by climate change and where global warming of 1.5 °C is expected to prove particularly challenging and contribute to the loss of, or change in, critical natural and human systems (IPCC, 2018).

Most of the Caribbean is composed of small islands, where the combination of size and topography restricts the availability of land and demands the use of narrow coastal areas and steep hillsides for the location of population settlements (Taylor et al., 2012; cf. Pulwarty et al., 2010). This 'climate sensitivity is both interwoven into and entrenched in all levels of Caribbean existence' (Taylor et al., 2012, p. 172). Although some uncertainties remain with respect to global warming and the future of storm formation and development in the Atlantic, the greater frequency and intensity of Atlantic hurricanes can be taken as evidence of a long-term shift in climatic patterns, and model simulations suggest that losses of livelihoods and environmental assets due to severe tropical storms are likely to increase in the Caribbean (Bhatia et al., 2018; Moore et al., 2017). Although intraregional variations are relevant (Stennett-Brown et al., 2019), the territories of the Caribbean share a common environment and similar development challenges. The vulnerability of

the peoples from this region is exacerbated by both its geographic characteristics and its economic and, in some cases, also political dependence, shaped by a long history of colonisation, enslavement, imperialism and extractivism,<sup>1</sup> which has fuelled industrialisation processes in the Global North and, in consequence, global warming (Sealey-Huggins, 2017). In light of the sociohistorical causes of underdevelopment and the inequalities shaping differential vulnerability to climate change, researchers have been emphasising that disasters are not so natural, and that blaming nature and looking away from human-induced climate change poses obstacles to risk reduction, sustainable development and both climate action and climate justice (Chmutina & Meding, 2019; Cruz-Martínez et al., 2018).

A recent study of past and future comparative vulnerabilities of some Caribbean countries to climate change based on physical and demographic factors shows that intraregional variations are important. The countries included in this study were: Antigua, Bahamas, Barbados, Belize, Cuba, Dominican Republic, Grenada, Guyana, Jamaica, St. Lucia, St. Vincent and Trinidad and Tobago. Of the twelve Caribbean countries examined, locations in Jamaica, Guyana and Belize emerged as among the most vulnerable (Stennett-Brown et al., 2019). These three countries were some of the latest in achieving independence from the British Crown in the Caribbean. Whereas Jamaica and Guyana became independent in 1962 and 1966 respectively, Belize was declared an independent state in 1981. The direct relation between the long-lasting effects of colonialism and increased environmental vulnerability is also supported by extant research corroborating that overseas territories in the Caribbean are more vulnerable to climate change than sovereign states (Bonilla, 2020; Siegel et al., 2019; Torres & Weidemeyer, 2019). It is important to bear in mind that, as stated by Yarimar Bonilla (2020, p. 12), ‘the victims of disaster, including the disaster of colonialism, have repeatedly been forced to wait for repair.’

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<sup>1</sup> The term extractivism is used to name extractive capitalism in the Americas, which is an economic system based on expropriation and intensive exploitation of environments, and depends on prior colonial and neo-colonial projects (see Gómez-Barris, 2017).

By using the term ‘natural disasters’ in the most recent assessment of the SIDS Accelerated Modalities Action (SAMOA) Pathway, heads of state and government, ministers and high representatives gathered at the United Nations failed to acknowledge the not-so-natural character of disasters. This conceptual contradiction of the SAMOA Pathway, which is an integral part of the 2030 Agenda for Sustainable Development, hampers its objective of being an effective ‘standalone overarching framework for guiding global, regional and national development efforts to achieve the sustainable development aspirations of SIDS’ (UN, 2019, p. 1). Although the midterm review of the SAMOA Pathway provides clear guidelines for action to support sustainable development across the intersections of gender and socio-economic background for the present and into the future, it is insufficiently aligned with the economic reparations, cultural recognition and acknowledgement of the sociohistorical causes of vulnerability that are necessary for effective climate action and justice (see Jafry, 2018). Bearing in mind the current context of climate injustice, this study proposes a theoretical framework for ‘radical, bolder and experimental’ adaptation and action pathways (Burton in Klein et al., 2017, p. 12). I argue that this can be achieved by integrating the participatory, transdisciplinary and translocal approach of the SIDS to transgress epistemic, political and physical borders in the face of increasing ‘borderless climate risks’ (Benzie & Persson, 2019, p. 369).

Why are participatory, transdisciplinary, cross-sectoral and translocal perspectives key for connected climate action? risk management in SIDS draws upon extensive experience in using participatory techniques in communities of the Global South, particularly in Latin America, from as early as the 1960s (see Paulo Freire, 1967). This participatory approach has proved to be not only effective but indispensable in contexts of extreme environmental challenges such as the Caribbean and the Pacific, where most SIDS are located (DasGupta & Shaw, 2017; Potter & Pugh, 2017; Pugh & Momsen, 2006). Paul Routledge (2011) has called attention to the need for ‘translocal solidarity’ through the direct participation of those most affected by economic and climate inequity. This connects with the possibility that a shared notion of climate (in)justice informs the practice of solidarity, ‘potentially creating a common ground that enables different themes to be interconnected, and different political actors from

different struggles and cultural contexts to join together in common struggle' (Routledge, 2011, p. 385; cf. della Porta et al., 2006).

Similarly, transdisciplinary research and praxis enables collaboration through the integration of diverse forms of knowledge and methodologies to address multifactorial problems. It aims to come up with practice-oriented solutions by transcending disciplinary boundaries and including the perspectives and needs of diverse stakeholders in the research process (Pohl & Hadorn, 2007). As an intrinsically multifactorial goal and process, climate action calls not only for the complexity approach of transdisciplinarity but also for communication, coordination and collaboration across sectors. Closely intertwined with transdisciplinary perspectives, cross-sectoral integration approaches and methods enable the assessment of impacts and risks, and the development of adaptation strategies and tools for interrelated sectors (UNFCCC, 2008). Although both qualitative and quantitative methods can be used for cross-sectoral integration, this study refers mainly to qualitative methods that identify linkages and the direction of impacts across socio-ecological systems. Finally, the supranational character of climate change supports the proposed translocal and post-national perspective. The use of the term 'post-national' here indicates a position critical of the predominant role of the nation state in the planning and governance of 'borderless climate risks' (Benzie & Persson, 2019, p. 369). It aims to highlight the need for exploring governance structures that contribute to putting cooperation and knowledge transfer at the centre of the new generation of adaptation research and climate action.

## **Reducing Risks and Tackling the SDGs on the Ground**

The African, Caribbean and Pacific-European Union Natural Disaster Risk Reduction (ACP-EU NDRR) Program was launched in 2011 as an initiative of the ACP Group of States, funded by the European Union and managed by the Global Facility for Disaster Reduction and Recovery (GFDRR). The program implements three strands of activities: (i) regional- and subregional-level projects, which support transnational

cooperation and regional activities for advancing national disaster risk reduction agendas; (ii) country-level projects, with activities at the national level driving disaster risk reduction and climate change adaptation policy development and implementation through need-based and demand-driven technical assistance, and (iii) post-disaster capacity building and recovery activities to improve the response capacity of ACP countries by building capacity to conduct post-disaster needs assessments, providing rapid technical assistance, and mainstreaming disaster risk reduction in recovery planning (ACP-EU NDRRP, 2019).<sup>2</sup> The following examples illustrate how all three strands of the program connect with these interrelated SDGs: Goal 3) Good health and wellbeing; Goal 4) Quality education; Goal 9) Industry, innovation and infrastructure; Goal 11) Sustainable cities and communities; Goal 13) Climate action; Goal 14) Conserve and sustainably use the oceans, seas and marine resources for sustainable development; Goal 16) Peace, justice and strong institutions, and Goal 17) Partnerships.

With fourteen active projects in 2019, the Caribbean continued to benefit from the partnerships supported by the ACP-EU NDRR program, which has facilitated a total of thirty-four initiatives in the region. Recent activities have responded to an increasing demand for open access to risk information, technical assistance and capacity building in designing national preparedness strategies and more resilient infrastructure. During the period 2018–19, two regional projects supported knowledge and data sharing among countries and disaster risk management practitioners, alongside nine country-level projects and three post-disaster and capacity building initiatives (ACP-EU NDRRP, 2019).

A regional follow-up project for the Caribbean Handbook for Risk Information and Management (CHaRIM) (2015–present) was launched in November 2018 with the objective of supporting governments in the design and guidance of hazard and risk assessments and planning. CHaRIM is an online platform that supports the generation and application of landslide and flood hazard and risk information to facilitate evidence-based decision-making for better planning and more resilient

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<sup>2</sup> As of June 2019, the ACP-EU NDRRP had facilitated a total of 21 regional projects, 64 country-level projects and 38 post-disaster & capacity building activities.

infrastructures. This platform relies on three interlinked components: (i) a user case book that details the steps required to use the hazard and risk information through examples and exercises for planning of infrastructure, risk reduction measures and emergency preparedness; (ii) a methodology book that explains the methods for obtaining risk information at both local and national scale, and (iii) a data management book that describes the types and quality of data needed for activities at different levels, as well as methods and protocols for data collection, management and sharing.<sup>3</sup> This web service targets policymakers, public engineers, spatial analysts, national emergency management organisations, forestry departments and water resources departments from Belize, Dominica, Grenada, Saint Lucia, and Saint Vincent and the Grenadines, some of which are among the smallest and most vulnerable countries in the Caribbean region (see Stennett-Brown et al., 2019).<sup>4</sup> The objectives of the online handbook and the related follow-up activities facilitated by the ACP-EU NDRRP, in close coordination with the Caribbean Disaster Emergency Management Agency (CDEMA) and the Caribbean Risk Information System, centrally connect with the aforementioned SDGs, and more directly with Goal 9) Industry, innovation and infrastructure, Goal 11) Sustainable cities and communities, Goal 13) Climate action and Goal 17) Partnerships.

Also in line with the SDGs discussed in this chapter, an ACP-EU NDRRP regional project co-financed the organisation of the Understanding Risk (UR) Caribbean Conference, which took place from 27 May to 1 June 2019 in Barbados. The conference brought together close to 500 participants, including members of governmental organisations, academics, private sector companies, disaster management practitioners, international organisations and donors, to discuss alternatives for sustainable development, climate change adaptation and disaster risk

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<sup>3</sup> For more information about CHaRIM please visit <http://www.charim.net/>

<sup>4</sup> With the exception of Guyana, Suriname and Belize, the Caribbean is composed of small islands and cays which are either low lying (e.g., Bahamas, most of the Grenadines, Barbuda), volcanic with mountainous interiors and very short coastlines (e.g., St. Kitts and Nevis, St. Lucia, St. Vincent, Dominica, Grenada, Montserrat), or with topographies combining both hilly interiors and limited coastal plains (e.g., Antigua, Barbados, Haiti, Jamaica and Trinidad and Tobago) (Taylor et al., 2012, p. 171).



management. The forum was an opportunity to share actionable knowledge and to launch the Caribbean Regional Resilience Building Facility, a partnership between the European Union (EU), the World Bank Group, and the Global Facility for Disaster Reduction and Recovery (GFDRR), set up in the aftermath of the destructive 2017 Hurricane Season.<sup>5</sup> The beneficiary countries for this initiative are Antigua and Barbuda, Bahamas, Barbados, Belize, Dominica, Dominican Republic, Grenada, Guyana, Haiti, Jamaica, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, and Trinidad and Tobago.

The Caribbean Regional Resilience Building Facility program has three main components and associated activities: (i) Regional Technical Assistance Facility to Mainstream Resilience, with activities focused on providing institutional, policy and regulatory advice to beneficiary countries on a demand-driven basis to build administrative and technical capacity for advancing recovery and resilience in key development sectors, with the aim of identifying public investment projects; (ii) Adaptation Facility for Leveraging Investments in Resilience in the Caribbean, with a focus on methodological support and evidence-based information to support beneficiary countries' decisions in the formulation of resilience and climate change adaptation investments, and (iii) Expanding Financial Protection Against Disasters in the Caribbean Sovereign Countries, a component that supports beneficiary countries to expand their coverage under the Caribbean Catastrophe Risk Insurance Facility-Segregated Portfolio Company (CCRIF-SPC) and related insurance and risk reduction mechanisms (GFDRR, 2019). With a clear focus on capacity building for managing investment, the Caribbean Regional Resilience Building Facility program directly supports Goal 9) Industry, innovation and infrastructure, Goal 11) Sustainable cities and communities, and Goal 13) Climate Action.

These projects' focus on regional cooperation for climate change adaptation and disaster risk reduction—which are key to supporting

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<sup>5</sup>The 2017 Atlantic hurricane season had above-normal activity, with 407 official forecasts issued. The Caribbean experienced one of the deadliest hurricane seasons of contemporary history, with 17 named storms of which 10 became hurricanes including six major formations (category 3, 4 or 5) and three simultaneously active hurricanes on September 7 alone: Katia, José and Irma (Cangialosi, 2018).

sustainable development—echoes the work of the Caribbean Risk Management Initiative (CRMI) in mainstreaming resilience in the region. The CRMI is an umbrella programme launched in 2004 by the UNDP's Bureau of Crisis Prevention and Recovery (BCPR) and the Regional Bureau for Latin America and the Caribbean (RBLAC) as a knowledge network designed to build capacity across the Caribbean region for the management of climate-related risks between the different linguistic communities. Participant countries include Cuba, Trinidad and Tobago, Jamaica, Barbados, Guyana, the Dominican Republic, Belize and Haiti (Fairholm, 2015; Pallen, 2008). A significant initiative of the CRMI's strategy has been scaling up Cuba's efficient Risk Reduction Management Centres model across partnering Caribbean states, an approach that led to successful pilot projects between 2011 and 2014 in the British Virgin Islands, the Dominican Republic, Guyana, Jamaica, and Trinidad and Tobago. The transfer of this participatory risk reduction model to other countries corroborates the UNDP's acknowledgement that 'while the countries of the region are varied in terms of language, culture and political-economic organisation, they are linked by geography, history and common development challenges, allowing them to benefit from each other's experiences' (UNDP, 2016, p. 7).

The aforementioned initiatives are part of a policy and planning landscape that has evolved in the last two decades for bringing together the Climate Change Adaptation, Disaster Risk Reduction and Sustainable Development Goals agendas as a strategy to confront both the 'existential threat' and the 'development crossroads' that climate change poses to the Caribbean (Rhiney & Baptiste, 2019, p. 71). In terms of policy, the region aligns with the Enhanced Comprehensive Disaster Management Strategy and Programming Framework 2014–2024 (CDEMA, 2014) and with the Regional Framework for Achieving Development Resilient to Climate Change (CCCCC, 2009), which provide a roadmap for building regional states' resilience to anticipated global climate change impacts. Both documents call attention to the centrality of disaster risk reduction for climate change adaptation and sustainable development. They are supported by an Implementation Plan that specifically outlines the region's strategic approach for 'delivering transformational change' up to 2021 and makes explicit the fact that disaster risk reduction and

climate change are ‘inextricably linked’ (CCCCC, 2012, p. 91).<sup>6</sup> In this light, the main goal of the CDEMA strategy is to support regional sustainable development enhanced by comprehensive disaster management through three main strategic elements: (i) mainstreaming climate change adaptation strategies into sustainable development; (ii) promoting the implementation of specific adaptation measures to address key vulnerabilities in the region, and (iii) promoting actions to reduce greenhouse emissions through fossil fuel reduction and conservation, and switching to renewable and cleaner energy sources. Table 9.1 is a recreation of the CDEMA Comprehensive Management Programming Framework Implementation Plan (CCCCC, 2012, p. 92), which has been reworked for the purpose of this study to show how the specific expected outcomes and outputs of this strategy address different SDGs:

- SDG3) Good health and wellbeing
- SDG4) Quality education
- SDG9) Industry, innovation and infrastructure
- SDG11) Sustainable cities and communities
- SDG13) Climate Action
- SDG14) Conserve and sustainably use the oceans, seas and marine resources for sustainable development
- SDG16) Peace, justice and strong institutions
- SDG17) Partnerships

In highly vulnerable territories such as the SIDS of the Caribbean, climate change adaptation and disaster risk management strategies are deeply intertwined and have evolved in parallel. The planning framework of CARICOM shows the integration into the policy cycle of the experiential knowledge of the region and the importance of mainstreaming climate change into disaster risk management for pursuing sustainable development

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<sup>6</sup>Although these policy documents are addresses to Caribbean Community (CARICOM) states (Antigua and Barbuda, Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Haiti, Jamaica, Montserrat, Saint Lucia, St Kitts and Nevis, St Vincent and the Grenadines, Suriname and Trinidad and Tobago), they set a favourable framework for other forms of regional translocal collaboration including non-member states, such as those exemplified by the Caribbean Risk Management Initiative through its pilot projects in other Caribbean sovereign countries and overseas territories (Jerez Columbié & Morrissey, 2020).

**Table 9.1** The CDEMA comprehensive management programming framework and the SDGs

<b>Goal</b>	
Regional sustainable development enhanced through comprehensive disaster risk management (CDM)	
<b>Purpose</b>	
To strengthen regional, national and community level capacity for mitigation, management and coordinated response to natural and technological hazards, and the effects of CCA	
<b>Outcome</b>	<b>Outputs</b>
1. Enhanced institutional support for CDM Program implementation at national and regional levels	<ul style="list-style-type: none"> <li>1.1. National Disaster Organizations are strengthened for supporting CDM implementation and a CDM program is developed for implementation at the national level</li> <li>1.2. CDERA CU is strengthened and restructured for effectively supporting the adoption of CDM in member countries</li> <li>1.3. Governments of participating states/territories support CDM and have integrated CDM into national policies and strategies</li> <li>1.4. Donor programming integrates CDM into related environmental, CCA and disaster management programming in the region</li> <li>1.5. Improve coordination at national and regional levels for disaster management</li> <li>1.6. System for CDM monitoring, evaluation and reporting being built</li> </ul>
2. An effective mechanism and programme for management of CDM knowledge has been established	<ul style="list-style-type: none"> <li>2.1. Establishment of a Regional DRR Network to include a DRR Centre and other centres of excellence for knowledge acquisition sharing and management in the region</li> <li>2.2. Infrastructure for fact-based policy and decision-making is established/strengthened</li> <li>2.3. Improved understanding and local/community-based knowledge sharing on priority hazards</li> <li>2.4. Existing educational and training materials for CDM are standardised in the region</li> <li>2.5. A strategy and curriculum for building a culture of safety is established in the region</li> </ul>

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SDG3	SDG4	SDG9	SDG11	SDG13	SDG14	SDG16	SDG17
Yes			Yes	Yes	Yes	Yes	Yes
Yes			Yes	Yes	Yes	Yes	Yes
Yes			Yes	Yes	Yes	Yes	Yes
Yes			Yes	Yes	Yes	Yes	Yes
Yes			Yes	Yes	Yes	Yes	Yes
Yes	Yes		Yes	Yes	Yes	Yes	Yes
Yes		Yes	Yes	Yes	Yes	Yes	Yes
Yes	Yes		Yes	Yes	Yes	Yes	Yes
Yes	Yes		Yes	Yes	Yes	Yes	Yes

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 Goal

Regional sustainable development enhanced through comprehensive disaster risk management (CDM)

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## Purpose

To strengthen regional, national and community level capacity for mitigation, management and coordinated response to natural and technological hazards, and the effects of CCA

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## Outcome

## Outputs

- |  |   |
|--|---|
| 3. DRM has been mainstreamed at national levels and incorporated into key sectors of national economies (including tourism, health, agriculture and nutrition) | 3.1. CDM is recognised as the roadmap for building resilience and decision-makers in the public and private sectors understand and take action on DRM<br>3.2. DRM capacity enhanced for lead sector agencies, national and regional insurance entities, and financial institutions<br>3.3. Hazard information and DRM is integrated into sectoral policies, laws, development planning and operations, and decision-making in tourism, health, agriculture and nutrition, planning and infrastructure<br>3.4. Prevention, mitigation, preparedness, response, recovery and rehabilitation procedures developed and implemented in tourism, health, agriculture and nutrition, planning and infrastructure   |
| 4. Enhanced community resilience in CDERA states and mitigation and response to the adverse effects of CCA and disasters                                       | 4.1. Preparedness, response and mitigation capacity (technical and managerial) is enhanced among public, private and civil sector entities for local level management and response<br>4.2. Improved coordination and collaboration between community disaster organisations and other research/data partners including CCA entities for undertaking CDM<br>4.3. Communities more aware and knowledgeable on disaster management and related procedures including safer building techniques<br>4.4. Standardised holistic and gender-sensitive community methodologies for natural and anthropogenic hazard identification and mapping, vulnerability and risk assessments, and recovery and rehabilitation procedures developed and applied in selected communities<br>4.5. Early Warning Systems for DRR enhanced at the community and national levels |
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goals. This regional perspective – which can provide instructive lessons to territories where climate change is still less tangible, like those located in the Global North – is aligned with a ‘climate dialectic’ that recognises not only the physical impacts, but also ‘the wider justice and development implications of climate change’ (Rhiney & Baptiste, 2019, p. 75).

Despite the fragmentation imposed on the territories of the Caribbean by colonial and imperial campaigns, the current disaster risk reduction translocal policies and initiatives exemplify how global warming and extreme weather events are contributing to re-making connections in the region (see Jerez Columbié & Morrissey, 2020). The histories of the Atlantic hurricane belt – the region we know as the Caribbean, including the northern littoral of South America, the Gulf of Mexico and the Florida peninsula – cannot be told without considering a common environmental history (Johnson, 2011; Schwartz, 2005; Soluri et al., 2018). The study, design and implementation of effective alliances, strategies and tools for climate change adaptation, disaster risk reduction and sustainable development in the region should bear in mind both the diverse cultural heritage of the Caribbean and its unity.

## Conclusions

Developing resilience in conditions of extreme geographic and economic vulnerability, SIDS have learned to ‘share what works’ for climate change adaptation and action through translocal solidarity and a participatory approach that is particularly evident in the evolution of environmental management in the Caribbean (UNDP, 2016). Voicing out the SIDS’ contribution to climate change knowledge is key for advancing action in disaster risk reduction, climate change adaptation and the Sustainable Development Goals. The examples of South-South cooperation between SIDS and triangulation with Europe and international organisations included in this chapter show that a coherent and effective theoretical framework for impactful adaptation research and climate action pathways (in line with the Sustainable Development Goals) should bring forward participatory, transdisciplinary and translocal perspectives informed by the experiences of communities in creating resilience



to environmental challenges. The Sendai Framework for Disaster Risk Reduction 2015–2030 (A/RES/69/283) – one of the main results of the SIDS’ leadership in disaster risk reduction and climate change – recognises regional platforms as critical mechanisms to monitor progress in adaptation implementation. The regional platforms studied in this chapter are playing a key role in the development of strategies and policies and in the advancement of knowledge and mutual learning at regional, local and international levels.

Notwithstanding the positive lessons provided by Caribbean SIDS in creating resilience through horizontal cooperation, it is important to highlight that the alliances, experiences, initiatives and policies studied in this chapter are limited by a dominant development model that does not fully acknowledge the moral and material debt that the Global North is still to pay to the Global South. In a context of global inequality, where the communities that were expropriated and enslaved are also the most affected by external debt and the most vulnerable to climate change, acknowledging the historical legacies of imperialism and colonialism is a prerequisite for saving and improving lives. Whereas South–South cooperation and regional policies are vital for disaster risk reduction, more effort should be put into communicating the sociohistorical dimension of environmental vulnerability, historicising resilience and decolonising climate change knowledge (see Jerez Columbié & Morrissey, 2020). A decolonised Global North – one that acknowledges the debt it acquired through slavery, colonialism and imperialism – could play an active role in shaping a new sustainable development model through reparations and justice (see Fanon, 2004; Narayan, 2019).

Although extant research on disaster risk reduction – from disciplines as diverse as cultural and social geography, cultural, regional and disaster studies, as well as, most recently, climate change adaptation – has followed the evolution of environmental management and adaptation in the Global South, climate change adaptation research and the Sustainable Development Goals agenda have failed to fully acknowledge the experiential knowledge of early adaptors as well as the socio-historical causes of differential vulnerability to global warming. Transdisciplinary and decolonising approaches to the three agendas offer opportunities for addressing this climate justice challenge through the integration of the

knowledge of early adaptors in the Global South into research and action for more coherent, inclusive and effective theory, policy and praxis responses to environmental challenges.

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