

Climate Vulnerability in the Caribbean

Challenges and Ways Forward



PPF Capital is a Caribbean-based strategic consultancy focused on financial advisory, market intelligence, and sustainability. We provide specialized advisory services to help public and private sector organizations navigate complex challenges. Our Climate Finance & Financial Sustainability practice assists clients in developing 'investment-grade' projects, accessing global climate funds, and building long-term financial resilience. This paper is a product of our commitment to building regional capacity.

Contact Information

For inquiries regarding this paper or to learn more about our consultancy services, please visit www.ppfcapital.com or contact info@ppfcapital.com.

Disclaimer of Advice

This paper is intended for informational purposes only and does not constitute financial, investment, legal, tax, or other professional advice. The information contained herein has been obtained from sources believed to be reliable, but PPF Capital Belize Ltd. makes no representation or warranty as to its accuracy, completeness, or timeliness. Readers should not act upon any information in this document without seeking specific professional advice. PPF Capital Belize Ltd. expressly disclaims all liability for any actions taken or not taken based on the contents of this report.

Methodology Statement

Findings are based on publicly available datasets and published assessments listed in the References. Monetary figures are presented in USD. Time windows for loss/damage are indicated in figure notes. See Annex for transformations, and limitations.

Data Sources & Dates

All datasets were accessed between September 2025 and October 2025. Some figures reflect preliminary estimates and may be revised by original publishers.

Limitations & Uncertainty

Estimates of loss, damage, and finance flows entail model and reporting uncertainty. Point estimates should be interpreted with caution; where material ranges are provided.

Independence & Conflicts of Interest

PPF Capital Belize Ltd. prepared this paper independently. Unless stated, no funding or editorial control was provided by entities discussed. PPF may advise organizations operating in sectors covered.

Forward-Looking Statements

This paper includes forward-looking statements that reflect current expectations about future events and outcomes. These statements are based on assumptions that involve risks and uncertainties. Actual results may differ materially due to changes in environmental, economic, regulatory, or policy conditions.

No Endorsement

Mention of any funder, program, or company does not constitute endorsement.

Third-Party Content & Trademarks

Third-party charts, logos, and trademarks are property of their respective owners and used for identification only. Permissions have been obtained where required.

Governing Law/Jurisdiction

This publication is governed by the laws of Belize.

Copyright Notice

© 2025 PPF Capital Belize Ltd. All rights reserved. No part of this publication may be reproduced, distributed, or transmitted in any form or by any means, including photocopying, recording, or other electronic or mechanical methods, without the prior written permission of the publisher, except in the case of brief quotations embodied in critical reviews and certain other noncommercial uses permitted by copyright law.

Abbreviations

ABBREVIATION	MEANING
ADF	The Adaptation Fund
AIA	Anguilla
ATG	Antigua and Barbuda
BHS	The Bahamas
BLZ	Belize
BN	Billion
BRB	Barbados
BVI	British Virgin Islands
CAD	Canadian Dollar
CDB	Caribbean Development Bank
DMA	Dominica
EUR	Euro
GCF	Green Climate Fund
GDP	Gross Domestic Product
GLIDE	Global Identifier Number
GRD	Grenada
GSSS	Green, Social, Sustainability and Sustainability Linked
GUY	Guyana
IBRD	International Bank for Reconstruction and Development
IDA	International Development Association
IDB	Inter-American Development Bank
IMF	International Monetary Fund
JAM	Jamaica
KNA	Saint Kitts and Nevis
LAC	Latin America and the Caribbean
LCA	Saint Lucia
MAF	Sint Maarten
MN	Million
NDC	Nationally Determined Contributions
NGO	Non-Government Organization
PDNA	Post Disaster Needs Assessment
PPP	Public Private Partnerships
SIDS	Small Island Developing States
TCA	Turks and Caicos Islands
UNFCCC	United Nations Framework Convention on Climate Change
USD	United States Dollar

Climate Vulnerability in the Caribbean

The Caribbean is one of most vulnerable regions to climate change. The region's large coastal populations and exposed locations leave it particularly vulnerable to the unforgiving effects of storms, droughts, and rising sea levels. Despite its miniscule contributions to total greenhouse gas emissions, The United Nations considers the region to be the 'ground zero' of climate change largely due to an estimated 70% of the Caribbean population living in coastal areas whereby climate change does the most damageⁱ. This results in Caribbean countries facing the most brutal effects of climate change. These climate events inflict deep social costs. They displace communities, disproportionately harm the most vulnerable households, and strain public health systems.

With this in mind, this paper aims to highlight the sectors in the region most vulnerable to climate change/variability, the economic damage and loss sustained generated from catastrophes in the region along with challenges faced by the public and private sectors. Crucially, assessments are made as to how the region can move forward.

Caribbean territories face several risks associated with climate change. Some of these risks includeⁱⁱⁱ.

- 1. Increased frequency of extreme weather conditions**
 - 2. Consistently high temperatures**
 - 3. Increased rainfall and flooding**
 - 4. Longer dry seasons and shorter wet seasons**
 - 5. Rising sea levels**
-

These risks accumulate to pose danger to all aspects of life in the Caribbean such as Agriculture & Food security, Infrastructure, Tourism, Biodiversityⁱⁱ.

Impacted Sectors



Agriculture & Food Security

Climate change severely threatens Caribbean agriculture and food systems, vital for nutrition, poverty alleviation, and natural resource preservation^{iv}. Increased temperatures, droughts, floods, and intense storms reduce water availability, cause soil erosion, damage crops and livestock, and contaminate food and water, spreading diseases. Changes in sea temperatures and currents also jeopardize the crucial fisheries industry.

Infrastructure

Caribbean infrastructure is highly vulnerable to increasing earthquakes, severe storms, and rising sea levels, impacting transportation, energy, housing, and critical facilities. Recent hurricanes like Beryl, Ian, and Maria caused extensive damage, with Beryl damaging 90% of homes on Union Island in St. Vincent and the Grenadines^v. This highlights the escalating risk to energy production and distribution networks.

Tourism

The Caribbean economy is highly vulnerable to climate change, especially its tourism sector, which depends on sun and sea. Climate-induced issues like reduced rainfall, heatwaves, and natural attraction degradation threaten tourism's competitiveness and profitability, endangering regional economic stability^{vi}.

Hydrology & Water

Hydrology and water resources, critical to all aspects of life in the region, face significant climate change threats. These include decreased stream flow and groundwater recharge rates, increased irrigation demands due to higher temperatures^{vii} and increased droughts, and degraded water quality from elevated water temperatures^{viii}.

Biodiversity

Climate change gravely endangers the Caribbean's vast biodiversity, risking habitat loss and extinction for over a thousand species^{ix}. The region's coral reefs, including Belize's barrier reef, are already suffering widespread bleaching.

Economic Loss & Damage

Large storms have caused significant economic damage in the Caribbean, exceeding hundreds of billions of dollars over the past decade. The increased frequency of natural disasters, particularly devastating hurricanes, is evident. For instance, Hurricanes Beryl, Franklin, Ida, and Dorian, all occurring within the last four years, each resulted in over US\$100 million in damages and losses.



MAJOR NATURAL DISASTERS IN THE CARIBBEAN

Recent Major Hurricanes in the Caribbean (2004 -2024)^{x; ii}

2004

HURRICANE IVAN

Became the costliest storm to hit Grenada, causing over \$26 billion in damages across its path.

2007

HURRICANE DEAN

Caused widespread damage to Dominica's agriculture and infrastructure.

2008

ATLANTIC

HURRICANE SEASON

Four cyclones kill nearly 800 people and cause about \$ 1 billion in damage

2012

HURRICANE SANDY

Largest hurricane on record by diameter, impacting Cuba, the Dominican Republic, and Jamaica.

2015

HURRICANE JOAQUIN & TROPICAL STORM ERIKA

Joaquin destroyed over 830 homes, while Erika's damages in Dominica amounted to 90% of the island's GDP.

2016

HURRICANE MATTHEW

First Category 5 Atlantic storm since 2007, causing tremendous damage across the Bahamas, Cuba, and Haiti.

2017

MULTIPLE MAJOR HURRICANES

An unprecedented season with Hurricanes Harvey, Irma, Maria, and Nate causing catastrophic damage.

2019

HURRICANE DORIAN & HAVANA TORNADO

Dorian became the worst natural disaster in Bahamas history. A rare tornado also hit Havana, Cuba.

2021

HURRICANE IDA

Destroyed infrastructure in Cuba with damages exceeding \$100 million.

2023

HURRICANE FRANKLIN

Cut off 1.6 million people in the Dominican Republic from portable water.

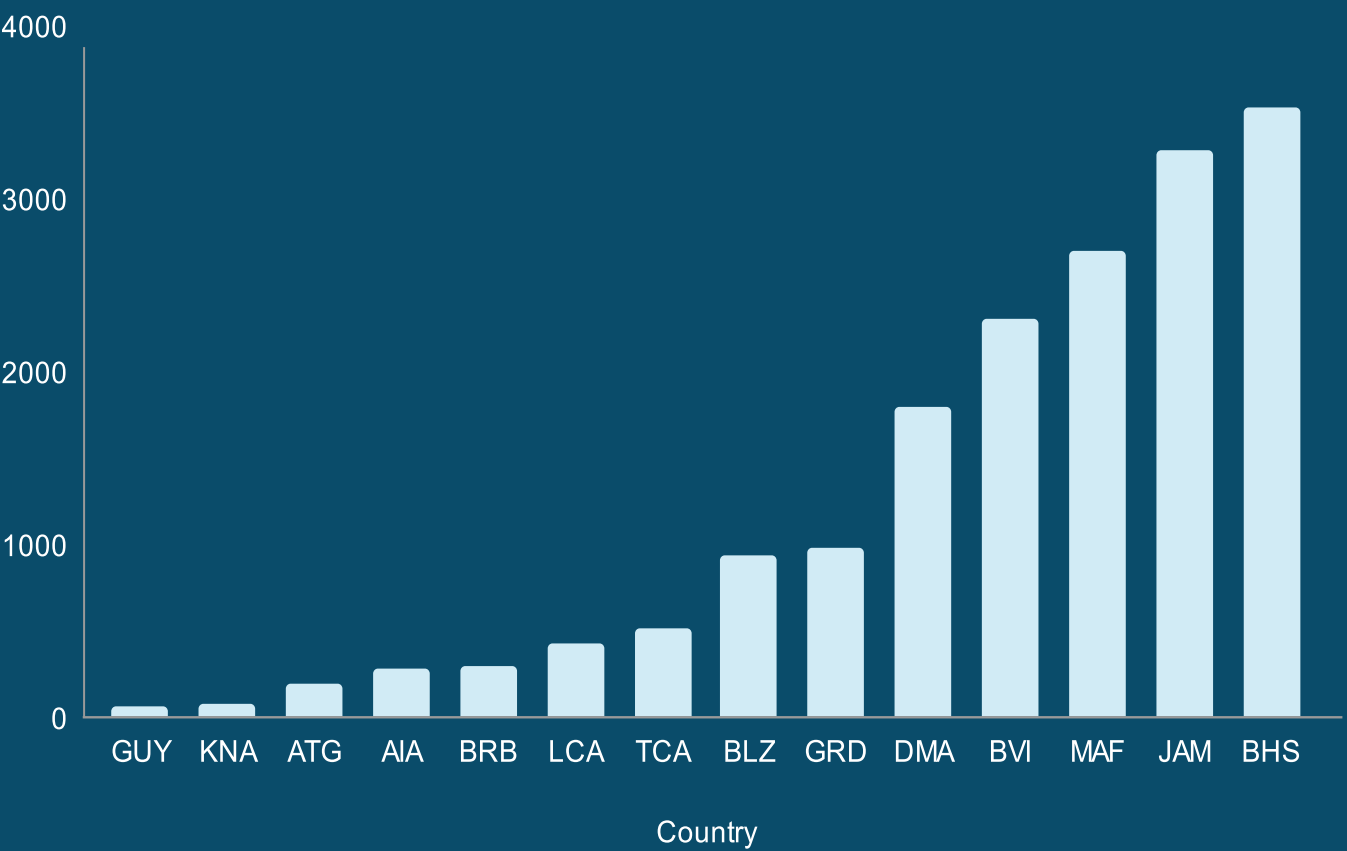
2024

HURRICANE BERYL

Broke records as the earliest Category 5 Atlantic hurricane, causing extreme damage.

Over the past two decades, Caribbean nations have experienced significant financial damage due to the frequent occurrence of natural disasters. The region has been number one in average annual damage and loss cost as a % of GDP in the past four decades^{xi}. The accompanying chart illustrates that economic losses for most countries have reached at least 100 million, with several nations incurring damages in the billions of dollars.

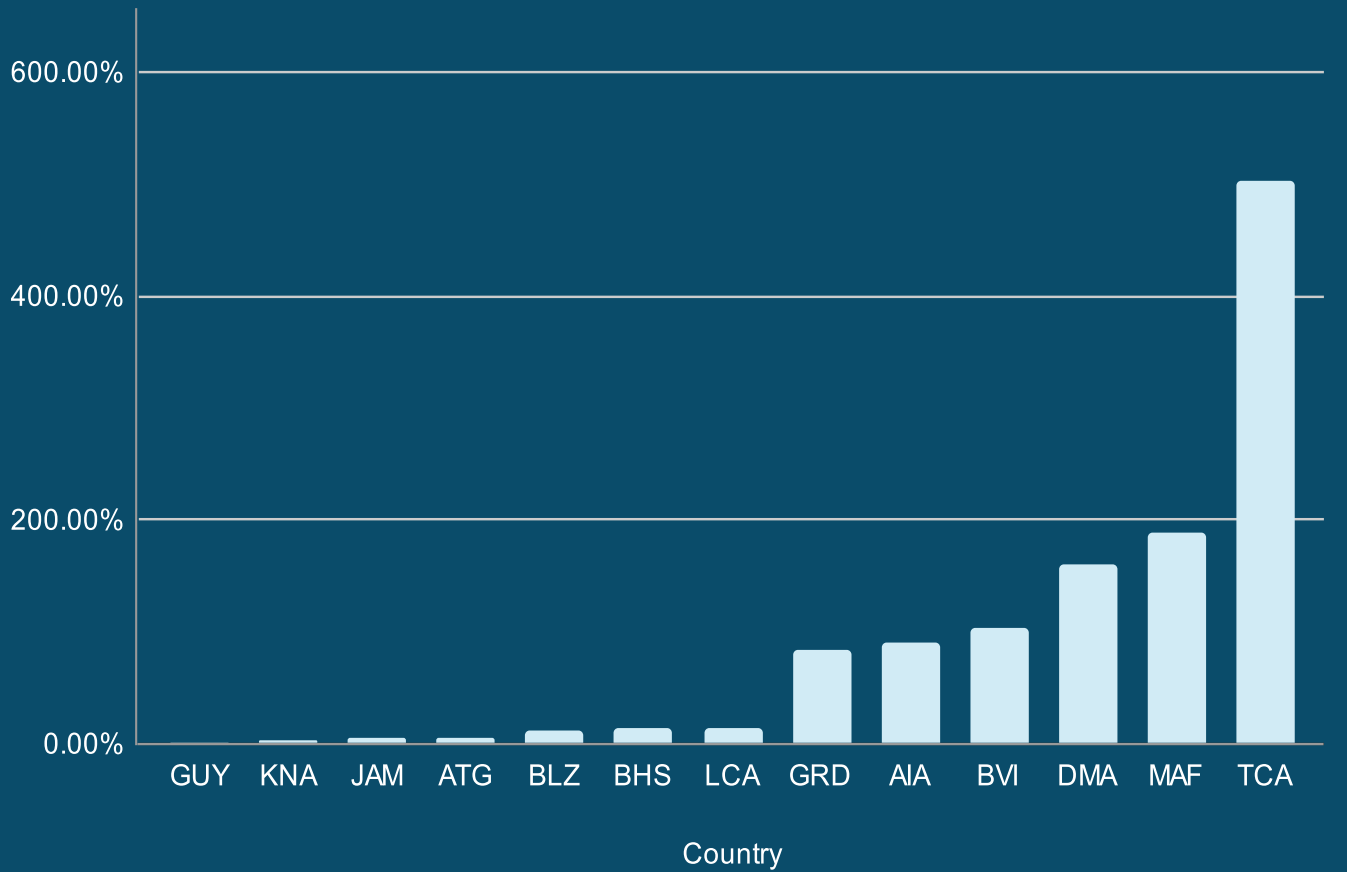
Damage and Loss estimates for Caribbean Countries for Major Disasters (2000-2024) (USD MN)¹



¹ Source: Data gathered and synthesized from, Climate Analytics (2024), and individual damage and loss reports for hurricanes.

These disasters have forced affected nations into debt to fund rebuilding. The extensive loss and damage caused by hurricanes and other natural disasters highlight the urgent need for enhanced climate finance and strategy in the region. This emphasis is crucial for preparing, adapting, and preventing future financial losses and damage from climate change.

**Average Economic Damage and Loss for Each Country (% of GDP)
(2000-2024)²**



² Source: GDP (at current prices) was gathered: [IMF World Economic Outlook Database](#), April 2025

Climate Finance in the Region

Climate finance in the Caribbean primarily encompasses adaptation, capacity building, mitigation and technological transfer efforts.

Adaptation Finance

Adaptation finance aims to help communities, businesses, and countries manage the impacts of climate change, funding sectors such as infrastructure and agriculture

Mitigation Finance

Mitigation finance, conversely, focuses on reducing greenhouse gas emissions through renewable energy projects, energy efficiency upgrades, and sustainable infrastructure

Capacity Building Finance

Capacity Building finance looks to the development of skills, knowledge and institutional frameworks needed to access adaptation and mitigation finance

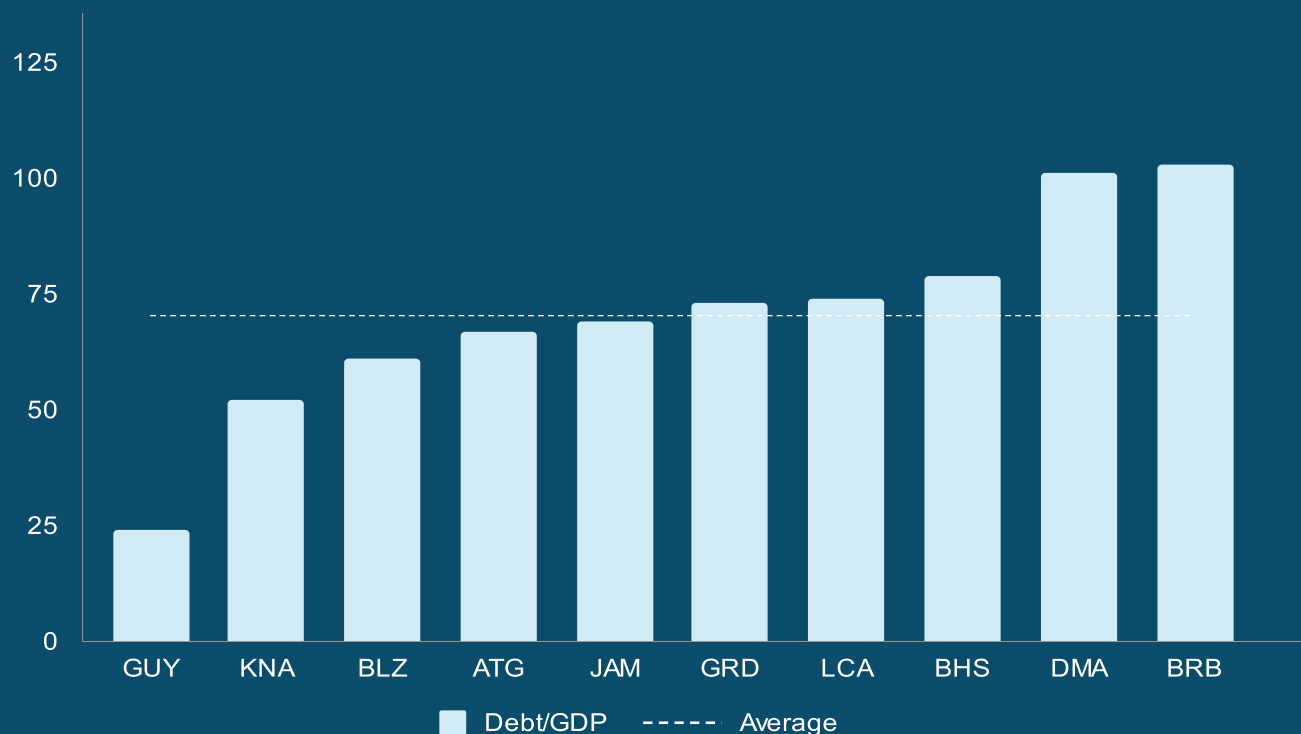
Technology Transfer Finance

Technology Transfer finance involves the use of several financial mechanisms to provide climate resilient technologies to developing countries

These forms of climate finance are crucial for Caribbean nations in their fight against climate change. Climate finance in the region generally revolves around several large multilateral banks, bilateral institutions, development banks, and climate funding institutions.



Climate Finance Disbursements for the LAC region in 2024 - Several Entities (USD BN)³



³ Note: Data for GCF, IDB, is representative of Latin America and the Caribbean. Sources: IBRD & IDA, IDB, GCF, CDB, Data in calendar years except IBRD & IDA. ADF data used three sources (FY 23, FY 24, FY 25). See Annex data transformation methodology.

Notable Climate Finance Initiatives in the Caribbean since 2020

DONOR COUNTRY	PROGRAM/INITIATIVE	FINANCIAL COMMITMENT	TIME PERIOD	SOURCE
United Kingdom	UK Caribbean Infrastructure Fund (UKCIF)	£350 Million	2016–2026	UKCIF
Canada	Canada-CARICOM Climate Adaptation Fund	CAD \$20 Million	2020–2024	Climate Adaptation Fund
United States	USAID Caribbean Climate Investment Program (CCIP)	USD \$20 Million	Announced 2023	CCIP
	New USAID Funding	USD ~\$28 Million	Announced 2024	USAID
France	AFD Credit Facility with CDB	USD \$50 Million	2024	AFD Credit Facility
Germany	International Climate Initiative (IKI) - EBA Facility	€55.88 Million	2016–2030	EBA Facility
European Union	Caribbean Action for Resilience Enhancement (CARE) Programme	EUR \$14 million	5-year programme started in 2022	CARE Programme

Aside from the several bilateral institutions and development banks that provide climate finance to the region, the issuance of climate bonds has begun to play a critical role in climate finance globally. Green bonds have begun to see an increase in investing as they went from USD \$18.8 bn in 2019 to USD \$36 bn in 2023^{xii}. As a whole, GSSS bonds have begun to make up a larger share of total bond issuance in the LAC region going from 9.3% in 2020 to 35% in 2023^{xii}. Despite this growth, the LAC region receives the 5th most amount of green deals in 2024. Green bonds as a whole make up the largest share of GSSS linked bonds in 2024 contributing USD \$669.7 bn^{xiii}. The development of the green bond market has been heavily supported by multilateral development banks as they act as market makers, providing technical assistance, promoting transparency, and helping to structure deals.

Challenges in Climate Finance

Despite ongoing efforts highlighted, a significant funding gap persists in both adaptation and mitigation. A striking example is that “only around 10% of developing countries’ adaptation needs are being met through international climate finance”^{xiv}. Post damage needs assessment revealed recovery needs of **USD 1.37 billion** just from Hurricane Maria in Dominica, twice the GDP of the island^{xv}. Moreover, the PDNA for Hurricane Dorian in The Bahamas quantified the total impact at **USD 3.4 billion**^{xvi}, over a quarter of the country’s GDPⁱⁱ. These are the costs for one country from one storm. In stark contrast, the total approved financing for the entire Caribbean region over many years from the three primary UNFCCC climate funds is approximately **USD 800 million**^{viii}. This comparison highlights potential foundational issues of the financial mechanism designed to support vulnerable countries in the region which leads to the chronic underfunding of adaptation initiatives and the need for more concentrated efforts to plug this gap. Assessments of Nationally Determined Contributions for Caribbean countries reveal significant gaps in costing for mitigation and adaptation^{xvii}. Caribbean countries are too dependent on NDCs for climate finance with little focus on domestic finance. However these gaps cannot be filled by simply incrementally increasing the amount of funds granted year by year, it is a systematic redesign of international finance that must be done in order to stop the cycle of disaster debt and vulnerability. Caribbean countries require a shift in efforts towards fiscal and policy reform. The Bridgetown Initiative, a call to action to reform the international development and climate finance architecture, is a notable example of efforts geared to overcome systematic issues relating to accessing climate finance in the Caribbean. Designed in 2022, in Bridgetown Barbados, the Bridgetown Initiative understands that the current international finance architecture is increasingly at odds with the reality and needs of the world today, and tinkering around the margins for broken system is not ⁴.

Public Sector

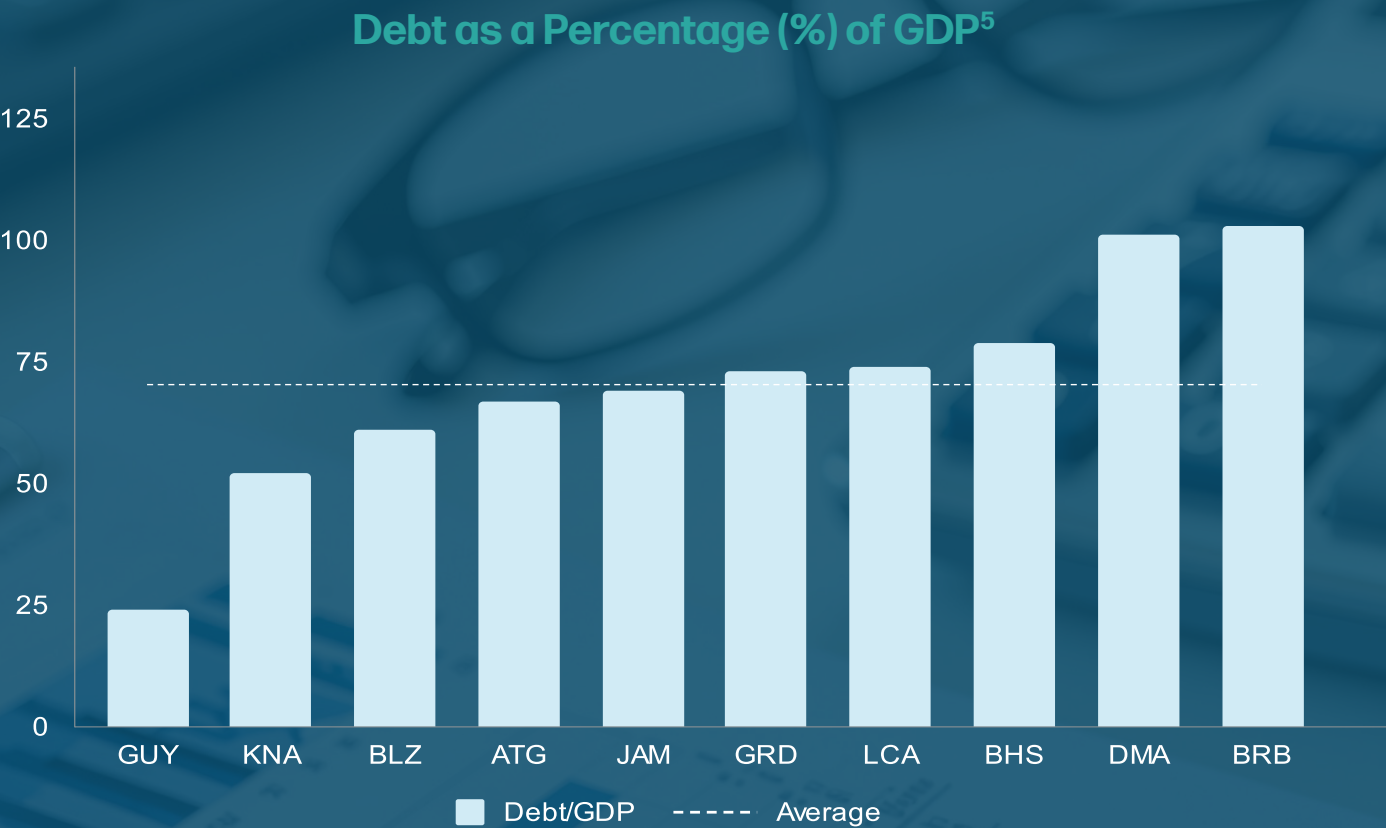
Public institutions in the Caribbean face a unique set of challenges that prevent them from effectively adapting to climate change effects and mitigating greenhouse gases.

Institutional and Technical Capacity Constraints

The limited administrative capacity of the SIDS severely hinders their ability to adapt to climate change. There is a persistent shortage of human resources with the technical expertise needed for complex project preparation, a process that involves lengthy coordination across multiple government departments. Data and institutional constraints often lead to technical studies and the collection of primary data being very time consuming and costly. This lack of capacity is a critical issue as even after securing funds, the problem of implementation persists.

⁴ International Finance Architecture - the framework of institutions, policies, rules, and practices that govern the global financial system to promote financial stability and international cooperation. Source: <https://www.bridgetown-initiative.org/>

Several efforts such as the Japan-Caribbean Climate Change Partnership and the Natural Infrastructure for Caribbean Resilience program have been initiated to develop Caribbean countries ability to plan, implement and monitor climate adaptation and mitigation technologies.



Competing Development Challenges

As seen in the chart above several Caribbean countries have debt more than 70% of their GDP. The high and rising public debt, a consequence of the vicious cycle of natural disasters and subsequent recovery borrowing, severely restricts the fiscal capacity for financing adaptation projects or providing government guarantees necessary to attract private investment. This challenge is compounded by the fact that the region experiences one of the lowest investment levels globally, reaching only 20% of GDP^{xviii}.

⁵

Source: IMF World Economic Outlook Database, April 2025

Private Sector

The private sector consistently bears the brunt of climate-related challenges and damages. Post-disaster assessments frequently show that damage to privately owned assets accounts for a significant portion of the total damage from hurricanes. For instance, after Hurricane Irma in The Bahamas, the private sector absorbed approximately 97% of the damage and loss. Key privately owned industries, such as tourism and agriculture, are particularly vulnerable to climate change.

Lack of Bankable Projects

A primary issue faced by the private sector is the lack of well developed, investment ready projects. The pipeline of bankable projects in the region is simply insufficient for what is needed. Information about collateral and creditworthiness is also not readily available. This scarcity is due to limited capacity and expertise needed to prepare these projects. A notable movement to improve the development of projects in the region occurred recently with Caribbean Export and IDB signing a Memorandum of Understanding aimed at enhancing cooperation to accelerate project development and sustainable investment in the region.

High Risk Perception

Risk at the macro level, such as political instability, currency volatility, and revenue uncertainty and risks at the project level like bureaucratic hurdles, disincentivizing climate finance investments in the private sector. Climate change itself introduces significant uncertainty into long-term contracts like Public-Private Partnerships (PPPs), making it difficult to accurately allocate risk. Mechanisms such as Catastrophe Bonds and the Caribbean Catastrophe Risk Insurance Facility have been developed to build resilience against climate risks by providing risk financing.

Poor Enabling Environment

The absence of effective carbon pricing, which reduces incentives for green projects, and the need for modernized regulations in sectors like renewable energy is a key roadblock to creating an enabling environment that attracts private investment. High public debt also limits the government's ability to de-risk projects through guarantees. In response to this, several countries have taken to implementing debt for nature swaps with Barbados launching the world's first Debt-for Climate Operation in December of 2024, to finance water and sewage projects resilient to climate change.

Scale and Transaction Costs

Most projects in the Caribbean are too small to attract major investors, who face high transaction costs for due diligence and structuring deals. The fixed costs of issuing financial instruments like green bonds can also be prohibitively high for smaller-scale investments.

Strategies for Public Sector

Improve Transparency and Fiscal Framework of Projects

Improve procurement, transparency, and reporting standards to give investors and international partners confidence that funds will be used effectively and for their intended purpose. Place an emphasis on the use of activity-based debt instruments such as green bonds, social bonds, sustainability bonds, and green loans. Instruments like these focus on specific projects with strict reporting deadlines where the use of funds is recorded, building a high level of transparency. Avoid the use of sustainability-linked loans or bonds which are more prone to green-washing due to their lack of focus on specific projects and no explicit mandatory reporting on the use of proceeds.

Enhance Data Collection

To effectively assess, categorize, and quantify loss and damage, regional bodies should collaborate to establish a standardized methodology. This could involve adopting existing standardized systems for disaster and loss reporting, such as the GLIDE number system, and seeking guidance from regions outside the Caribbean. Prioritizing the use of national and regional disaster loss databases, like the Caribbean Risk Information System, is crucial for aggregating data and presenting a clear global picture. Additionally, consistent reporting of quantified damage and loss fiscal needs to the Disaster Loss and Damages Tracking System should be a priority.

Invest in Public-Private Partnerships (PPPs)

To overcome fiscal constraints, prioritize Public-Private Partnerships (PPPs). Engage the private sector early to structure bankable projects with clear, balanced risk and return allocations, enhancing their financial viability and appeal. Integrate potential climate change impacts into infrastructure project designs. This approach can significantly boost infrastructure resilience in the Caribbean.

Structure PPPs with a long-term perspective (25 to 30 years), incorporating climate uncertainty through contractual predictability. Emphasize using the World Bank's Caribbean Public-Private Partnerships toolkit as a guide. Blend public and private investments to accommodate investors with varying risk appetites. Funds such as the Caribbean Community Resilience Fund can be leveraged to enhance private sector investment as they bridge the gap of finance between investors and small and medium sized enterprises with their shares designed to de-risk investments.

Regional Collaboration

Strive to establish shared technical support to handle the complex application process for international climate funds, reducing the administrative burden of individual nations. The Caribbean Development Bank's Regional Platform for Catalysing Climate Action in the Caribbean should be actively leveraged to assist in creating an integrated approach scaling finance.

Strategies for Private Sector

Integrate Climate Risks into Business Strategy

Businesses should integrate climate risk and resilience into their core strategies. This involves assessing how climate change impacts revenue streams and investing in more resilient facilities and operations. Key measures include parametric insurance, climate-smart agriculture, energy-efficient buildings, and water conservation, which mitigate long-term losses and disruptions. This is especially crucial for vulnerable sectors like agriculture and tourism, where increased awareness of climate change risks can significantly improve climate adaptation.

Reduce Capacity Constraints

Efforts are required to better understand climate financing and how to access it. The SIDS of the region need to be more competent across a multitude of issues in climate finance. The Resilience and Training Facility provided by the IMF should be used as a resource to address long term structural reforms. Focus on seeking technical assistance from multilateral institutions such as IDB or GCF. Investments need to develop human capital dedicated towards the pipeline/development of projects. This could serve to ease the burden on public sector workers face in developing reforms, and green infrastructure services.

Diversify Source of Funds

NGOs, trusts, and protected areas (PA) should focus on diversifying sources of funds. Invest in diversifying revenue streams, innovative financial mechanisms such as proactive outreach, corporate partnerships, and earned income revenue models. Institutions should look to take the lead, instead of waiting for funding opportunities, they should define their own priorities and invite donors to support their initiatives in their climate adaptation needs.

Aggregate Portfolios

To attract investment, small projects should be bundled to achieve economies of scale. This approach can be vital in uniting international and domestic private finance. Aggregating these investments into green bonds allows for a single, diversified portfolio which enables risks to be pooled together thereby reducing the financial burden for all parties involved. A successful example is the Sustainable Energy Bonds for India, which bundled low per-transaction loans for initiatives like rooftop solar and energy efficiency retrofits. This helped spread costs and create an appealing value proposition for investors^{xvix}.

Build Knowledge

To bolster climate resilience, businesses within the same sector should create platforms for sharing best practices, strategies, and data. This is especially vital for Small and Medium-sized Enterprises (SMEs) that often lack independent resource development. Existing platforms, such as the Caribbean Resilience Knowledge Platform and the Caribbean Hotel and Tourism Association Knowledge Center, should be leveraged to enhance the tourism sector's resilience. Similar knowledge resources would greatly benefit the agriculture sector.

Conclusion

The Caribbean, a region acutely vulnerable to climate change, faces significant social and economic costs from extreme weather, rising sea levels, and other climate impacts. Despite minimal contributions to global emissions, its large coastal populations and critical sectors like agriculture, infrastructure, tourism, water and biodiversity are severely threatened. The region has experienced substantial economic damage, pushing nations into debt. While climate finance exists for adaptation, mitigation, capacity building, and technology transfer, a significant funding gap persists, exacerbated by institutional capacity constraints, high public debt, and a challenging environment for private sector investment. To address these issues, both public and private sectors must adopt strategic approaches. Public sector strategies include improving transparency and fiscal frameworks, enhancing data collection, investing in Public-Private Partnerships (PPPs), and fostering regional collaboration. For the private sector, integrating climate risks into business strategies, diversifying funding sources, and aggregating portfolios financed through innovative financing approaches, are crucial. A systematic redesign of the fiscal frameworks policy structures present in the region is essential to break the cycle of disaster debt and vulnerability, ensuring a more resilient and sustainable future for the Caribbean.

Bridging the Gap: From Vulnerability to Viability

This paper highlights that a primary barrier to accessing climate finance is a persistent 'capacity gap' and a 'lack of bankable projects'. PPF Capital's Climate Finance & Financial Sustainability practice is designed to bridge this exact gap. We partner with public and private organizations to:

- Develop 'investment-grade' proposals and resource mobilization strategies.
- Create revenue diversification plans for conservation entities to build long-term resilience.
- Structure ESG-aligned investment frameworks to attract private capital.

For inquiries regarding this paper or to learn more about our consultancy services, please visit www.ppfcapital.com or contact info@ppfcapital.com.



References

- ⁱ. United Nations. (2022, July 3). *The Caribbean is “ground zero” for the global climate emergency: Guterres* | UN News. United Nations. <https://news.un.org/en/story/2022/07/1121902>
- ⁱⁱ. Roy, D. (2024, November 13). *How the Caribbean is building climate resilience*. Council on Foreign Relations. <https://www.cfr.org/background/under/how-caribbean-building-climate-resilience#chapter-title-0-7>
- ⁱⁱⁱ. Cooper, S., Cloos, P., Abraham, C., McPherson, N., Ravaliere, T., & Harris-Glenville, F. (2025). What can be said about risks, vulnerabilities, and adaptation to climate change in Caribbean Small Island Developing States (SIDS)? the case of dominica. A qualitative study. *PLOS Climate*, 4(4). <https://doi.org/10.1371/journal.pclm.0000275>
- ^{iv}. Salazar, L., González-Flores, M., & Alvarez, L. (2024). *Food Insecurity and Climate Vulnerability: Empirical Evidence for Countries in Latin America and the Caribbean*. <https://doi.org/10.18235/0013311>
- ^v. Cohen, L. (2024, July 2). *Hurricane Beryl severely damages or destroys 90% of homes on Union Island in St. Vincent and the Grenadines, prime minister says*. CBS News. <https://www.cbsnews.com/news/hurricane-beryl-damage-saint-vincent-and-the-grenadines-island/>
- ^{vi}. *Climate change and tourism: Responding to global challenges*. (2008). World Tourism Organization ; United Nations Environment Programme.
- ^{vii}. Organization of American States, Unit for Sustainable Development and Environment. (n.d.). *Water and Climate Change in the Caribbean*. oas.org. <https://www.oas.org/cdwc/Documents/SIDS%20Paper/Water&ClimateReportFinal.pdf>
- ^{viii}. Solís, B., & Serebrisky, T. (2023). *Under Pressure: Effects, Impacts, and Adaptation to Climate Change in Latin American and Caribbean Water Operators*. <https://doi.org/10.18235/0005170>
- ^{ix}. Day, O. (2009). *The impacts of climate change on biodiversity in Caribbean islands: What we know, what we need to know, and building capacity for effective adaptation*. Caribbean Natural Resources Institute.
- ^x. Sircar, A., Thomas, A., Serdeczny, O. and Jattansingh, S. (2024). *A Review of Loss and Damage in the Caribbean (1994 to 2024)*. Climate Analytics.

^{xi}. Guerson, A., Morsink, J., & Muñoz, S. (2023, June 27). *Caribbean climate crisis demands urgent action by governments and investors*. IMF Blog. <https://www.imf.org/en/Blogs/Articles/2023/06/27/caribbean-climate-crisis-demands-urgent-action-by-governments-and-investors>

^{xii}. The surge of Green, social, sustainability and sustainability-linked (GSSS) bonds in Latin America and the Caribbean. (2024). OECD Development Policy Papers. <https://doi.org/10.1787/f1c893a3-en>

^{xiii}. Muldoon, C., Harrison, C., & Sharma, D. (2025, May 31). *Publications*. Climate Bonds. <https://www.climatebonds.net/resources/reports/sustainable-debt-global-state-market-2024>

^{xiv}. Hillier, D. (2025, June 10). *Can the private sector plug the adaptation Finance Gap?*. World Economic Forum. <https://www.weforum.org/stories/2025/06/can-the-private-sector-plug-the-adaptation-finance-gap/#:~:text=Finance%20must%20be%20sufficient%20to.realistic%20or%20just%20wishful%20thinking?>

^{xv}. *Post-disaster needs assessment hurricane maria September 18, 2017 - Dominica*. ReliefWeb. (2018, January 25). <https://reliefweb.int/report/dominica/post-disaster-needs-assessment-hurricane-maria-september-18-2017>

^{xvi}. Bello, O., Hendrickson, M., Marcano, B., Pantin, M., Mery, G., Espiga, C., Espiga, F., Gonzalez, M., Flores, A., Ibarra, F., Marconi, S., Williams, R., Attademo-Hirt, F., & Nelson, M. (2020). *Assessment of the Effects and Impacts Caused by Hurricane Irma, the Bahamas 2017*. <https://doi.org/10.18235/0002617>

^{xvii}. Mohan, P. S. (2022). Implementing nationally determined contributions under the Paris Agreement: An Assessment of Climate Finance in Caribbean Small Island Developing States. *Climate Policy*, 22(9–10), 1281–1289. <https://doi.org/10.1080/14693062.2022.2101978>

^{xviii}. Conde, J., Santos, R., Marchitto, B., Davradakis, E., Galán, E., Wiedmann, L., Alcas, R. C., Gutierrez, J., & Garica, K. F. (2024). *Climate financing in Latin America and the caribbean; how are public development banks supporting the climate transition?* EUROPEAN INVESTMENT BANK. <https://www.eib.org/en/publications/20240047-climate-financing-in-latin-america-and-the-caribbean>

^{xvix}. Thomas, B., & Azhar, H. (2024, July 16). *Five strategies to break down barriers to private climate investment*. The Global Innovation Lab for Climate Finance. https://www.climatefinancelab.org/news/five-strategies-to-break-down-barriers-to-private-climate-investment/#_ftnref1

Annex

METHODS QUALITY

Data Inclusion Criteria

- **Economic damage and loss data** - Damage and loss data was only collected for hurricanes that were deemed to be major hurricanes, which is considered to be at least a Category 3 hurricane based on the Saffir-Simpson Hurricane Scale.
- **Climate Finance disbursements** - Data from established regional funding institutions was required.

Data transformations

- **Damage and Loss estimates for Caribbean Countries for Major Disasters**
 - **Methodology** - Damage and Loss data for major hurricanes for each country was gathered and summed together to obtain a singular figure for each country.
- **Average Economic damage and loss for each country (% of GDP).**
 - **Methodology** - Economic damage and loss as a percentage of GDP for each country was calculated by dividing damage and loss reported for the hurricane by GDP (current prices) for the previous year that the storm occurred.
- **Climate Finance Disbursements for the LAC region in 2024 - Several Entities | Adaptation Fund**
 - **Methodology** - Data for the Adaptation fund was calculated by subtracting total investment provided for the LAC region in annual reports for FY 2024 and FY 2025, and subtracting data for FY 2024 with FY 2023.
 - Calculation (USD mn):

$$\text{FY 2025} = 357.9 - 315.15 = 42.75$$

$$\text{FY 2024} = 315.15 - 271.05 = 44.1$$

- Once data for FY 2025 and FY 2024 was calculated, the conversion was done to obtain a calendar year figure for 2024. With the fiscal year of the Adaptation fund being from July to June half of each figure was calculated and summed together to obtain the 2024 calendar year figure.
- Calculation (USD mn):

$$2024=(44.1*50\%)+(42.75*50\%)=43.425$$

- Climate Finance Disbursements for the LAC region in 2024 - Several Entities | IBRD & IDA
 - **Methodology** - Data for IBRD and IDA was calculated based on multiplying the total amount of co-climate benefits provided in the source by the percentage of finance for the LAC region.
 - Calculation(USD mn):

$$FY= 31*15\%=4.65$$

Data Limitations

- Damage and Loss figures are based on estimates provided in reports and articles, they do not derive from a singular unified database.
- Climate Finance data for IBRD & IDA was only available in fiscal years with data for FY 2025 not being available resulting in data for FY 2024 being used as the 2024 figure.

Economic Damage & Loss Data

Below is the data used to calculate total damage and loss for select countries in the Caribbean

COUNTRY	EVENT NAME/TYPE	YEAR	ESTIMATED ECONOMIC DAMAGE & LOSS (USD MN)
Anguilla	Hurricane Irma	2017	287.80
Antigua and Barbuda	Hurricane Irma	2017	155.00
Antigua and Barbuda	Hurricane Omar	2008	18.00
Antigua and Barbuda	Hurricane Earl	2010	19.26
Antigua and Barbuda	Tornado	2013	2.59
The Bahamas	Hurricane Dorian	2019	3,400.00
The Bahamas	Hurricane Irma	2017	130.80
Barbados	Cumulative (Storms)	'00-'23	300.00
Belize	Hurricane Keith	2000	512.55
Belize	Hurricane Dean	2007	179.03
Belize	Tropical Cyclone Richard	2010	36.15
Belize	Hurricane Earl	2016	96.77
Belize	Hurricanes Eta and Iota	2020	8.17
Belize	Hurricane Lisa	2022	99.45
British Virgin Islands	Hurricane Irma	2017	2,300.00
Dominica	Hurricane Maria	2017	1,310.00
Dominica	Tropical Storm Erika	2015	483.00
Grenada	Hurricane Ivan	2004	900.00
Grenada	Hurricane Emily	2005	86.95
Guyana	Flooding	2005	52.60
Guyana	Heavy Rainfall	2007	0.15
Guyana	Heavy Rainfall	2011	0.02
Guyana	Drought	2010	14.70
Jamaica	Rainfall	1999	7.88
Jamaica	Heavy Rains	2002	12.87
Jamaica	Flood Rains	2002	140.77
Jamaica	Hurricane Ivan	2004	2,180.24
Jamaica	Hurricane Dennis and Emily	2005	380.74
Jamaica	Hurricane Wilma	2005	232.62
Jamaica	Hurricane Dean	2007	329.00
Puerto Rico	Hurricane Irma	2017	7,650.00
Saint Kitts and Nevis	Hurricane Irma	2017	45.00
Saint Kitts and Nevis	Hurricane Omar	2008	11.00
Saint Kitts and Nevis	Hurricane Earl	2010	3.00
Saint Kitts and Nevis	Subtropical Storm Otto	2010	20.10
Saint Lucia	Hurricane Tomas	2010	336.20
Saint Lucia	Heavy rainfall	2013	89.20
Sint Maarten	Hurricane Irma	2017	2,700.00
Turks and Caicos Islands	Hurricanes Irma & Maria	2017	520.00



October 2025

Authored by: Admar Urbina