

How Can the World Bank Better Support Natural Disaster Risk Financing in Caribbean SIDS?



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Abstract

How Can the World Bank Better Support Natural Disaster Risk Financing in Caribbean SIDS?

The Caribbean's experience with Hurricane Beryl is a sobering reminder that the region not only faces significant exposure to various natural hazards, regularly grappling with strong hurricanes, extensive flooding, catastrophic earthquakes and prolonged droughts, but also that these natural hazard risks are rapidly changing in the face of climate shocks. Caribbean governments should be therefore looking ahead to ensure that they have access to more effective, affordable, pre-arranged financial protection solutions that better match the scale of existing and future disaster risks. This study discusses how the World Bank, as the largest provider of development finance to Caribbean SIDS, can better support the Caribbean's recovery and resilience, especially through the provision of pre-arranged disaster risk financing tools which can provide emergency liquidity in the aftermath of a natural disaster to the most vulnerable and marginalised of Caribbean populations.

We find that the World Bank needs to significantly improve the rollout of its Crisis Preparedness and Response Toolkit in the Caribbean region, and recommend that the World Bank undertake the following actions: (i) develop a Caribbean loss and damage data hub for all severities of natural hazards; (ii) use its tremendous convening power to promote greater uptake of catastrophe risk financing solutions among Caribbean SIDS; (iii) launch a substantial communications, outreach and training campaign to explain the nuances of its various crisis tools such as catastrophe (CAT) bonds and Catastrophe Deferred Drawdown Option (CAT DDO); (iv) partner with the Global Shield against Climate Risks to Strengthen CCRIF, the regional catastrophe risk insurance pool; and (v) apply its disaster risk financing framework to adaptive social protection (ASP) programmes to better meet the needs of Caribbean populations that are disproportionately vulnerable to disasters caused by natural hazards.

1

Introduction

On 2 July 2024, Hurricane Beryl broke meteorological records to become the earliest Category 5 storm formed during the 2024 Atlantic hurricane season, as it left a swathe of catastrophic destruction across several Caribbean small island developing states (SIDS).¹ Grenada is now seeking to fund rebuilding efforts in its smaller northern island dependencies of Carriacou and Petite Martinique without unduly raising its debt in the face of economic damages of US\$219 million, or around 16.5 percent of the country's GDP. Grenada also became the first country in the world to trigger a natural disaster clause, temporarily deferring debt service payments due to its Eurobond creditors in the six months to May 2025. St. Vincent and the Grenadines did not renew a World Bank-Catastrophe Deferred Drawdown Option (CAT DDO), which helped fund the country's emergency response to the 2021 volcanic eruption, leaving the island without similar natural disaster risk financing in the wake of extensive damages of US\$230 million or 22 percent of GDP caused by Hurricane Beryl. Similarly, Jamaica suffered around US\$200 million, or just over 1 percent of GDP, in damage to property and infrastructure along its southwestern areas from Hurricane Beryl but did not receive any payout from its World Bank-sponsored Catastrophe (CAT) bond and had to draw on its own scarce fiscal resources to fund emergency response and recovery spending.

The Caribbean's experience with Hurricane Beryl is a sobering reminder that the region not only faces significant exposure to various natural hazards, regularly grappling with strong hurricanes, extensive flooding, catastrophic earthquakes and prolonged droughts, but also that these natural hazard risks are rapidly changing in the face of climate shocks. The ensuing natural disasters pose significant financial shocks to Caribbean SIDS and disproportionately impact the region's vulnerable populations,

¹ The United Nations officially recognises 16 Caribbean SIDS. In this study, however, the term 'Caribbean SIDS' refers to 14 countries that are members of the Caribbean Community (CARICOM), the regional integration movement. They are the ten island economies of Antigua & Barbuda, the Bahamas, Barbados, Dominica, Grenada, Jamaica, St. Kitts and Nevis, St. Lucia, St. Vincent & the Grenadines, and Trinidad and Tobago, and the four mainland countries of Belize, Haiti, Guyana, and Suriname.

particularly women and children. Typically, when such extreme events occur, fiscally constrained Caribbean governments have little choice but to borrow to fund response and recovery costs, adding to their already rising debt burdens, and creating a cycle of debt accumulation that prevents investment in building longer-term resilience.

Against this backdrop, the main challenge for Caribbean governments is how to meet large and ever-increasing post-disaster relief and recovery costs, that are, by their nature, unpredictable and require financing not envisaged in their budgets. Rebuilding needs in the aftermath of a disaster are similarly difficult to predict. Here, the multilateral development banks (MDBs) have a pivotal role to play in ensuring affordable disaster risk financing (DRF) solutions reach the most vulnerable and marginalised of populations, complementing the knowledge, policy advice and capacity building roles of these international institutions. In particular, it is important for Caribbean governments to secure pre-arranged financing that is guaranteed to be released when a specific, pre-identified trigger condition is met (Plichta and Poole 2023) and that meets the growing costs of responding to future unpredictable climate shocks.

In September 2023, G20 Leaders committed to **“pursue reforms for better, bigger and more effective MDBs to address global challenges to maximise developmental impact”** (G20 2023). To do so, they called on each MDB to evolve its vision, incentive structure, operational approach and financial capacity in line with its mandate, client countries and governance structure. Accordingly, this study discusses how the World Bank can better support the Caribbean’s recovery and resilience, especially through more effective and cost-efficient DRF tools which provide emergency liquidity in the aftermath of a natural disaster. The focus is on the World Bank since it is the largest provider of development finance to the Caribbean region; most Eastern Caribbean small states are not members of the Inter-American Development Bank (IDB), while the Development Bank of Latin America and the Caribbean (CAF) has only three Caribbean members – Barbados, Jamaica, and Trinidad and Tobago. However, when relevant, reference is made to the smaller MDBs operating in the region. While this paper focuses solely on the financial protection pillar in the Caribbean, it does not lessen the need for country authorities and the World Bank to work together to strengthen other dimensions of integrated disaster risk management, including the preparedness component.

The rest of this study is structured as follows:



SECTION 2

sets the context by briefly discussing natural hazards in the Caribbean.



SECTION 3

outlines the World Bank’s approach to disaster risk finance and the various elements of its new Crisis Preparedness and Response Toolkit.



SECTIONS 4–7

analyse the experience of Caribbean countries with World Bank-facilitated DRF instruments, including Climate Resilient Debt Clauses (CRDCs), Catastrophe Deferred Drawdown Options (CAT-DDOs), Catastrophe (CAT) bonds, and the Sovereign Parametric Risk Insurance and Regional Insurance Pool, CCRIF SPC.



SECTION 8

concludes the study with specific recommendations on how the World Bank can strengthen its DRF toolkit in the Caribbean.



2

Natural Disasters in the Caribbean

Disasters caused by natural hazards have been steadily increasing in the Caribbean. According to the most widely used database on natural disasters, the Emergency Events Database (EM-DAT),



the number of natural disasters in the Caribbean increased slightly from 48 during 1980-1989 to 50 during the decade of the 1990s, before jumping sharply to a peak of 90 between 2000-2009. Subsequently, the number of natural disasters fell to 75 in the decade of the 2010s and has already reached 23 in the first four years of the 2020s.

Despite Caribbean SIDS graduating to middle-to-upper-income status, the costs of these natural disasters, including the loss of life, infrastructure and livelihoods, can literally wipe out, overnight, development gains that these nations took decades to achieve. In the 70-year period between 1950-2021, Caribbean SIDS experienced 854 tropical storms which resulted in 13,470 deaths, affected almost 10 million persons and caused total damages estimated at US\$30 billion (Rambarran 2022). Since the 1950s, the annual economic costs of tropical storms and hurricanes have averaged approximately 2 percent of GDP in the Caribbean (Acevedo 2016). During the 2017 Atlantic hurricane season, three of the most notable systems were Hurricanes Harvey, Irma and Maria, all of which attained Category 5 status and inflicted tremendous loss of life, widespread infrastructural damage, destruction of crops and livestock, especially across the eastern Caribbean microstates (Munevar 2018). This greater damage not only reflects the unfavourable location of many Caribbean SIDS in the

North Atlantic hurricane belt, but it also reflects the constrained fiscal space of these small island states which can inhibit adequate investments in disaster risk reduction.

Some natural disasters in the Caribbean have been truly devastating, affecting the population of an entire country and causing economic damages far exceeding its annual GDP (see Table 1).

For example,

In 2017, Hurricane Maria hit Dominica with winds exceeding 220 mph,



killing **65 people**,



damaging or destroying **90% of buildings and infrastructure**, and



causing loss and damages of **over 225% of the small island's GDP**

This made Maria the **worst natural disaster** that the world has seen in terms of loss and damages in percentage of GDP.

(IMF 2018)

It resulted in a substantial loss of output, increased spending on rehabilitation and reconstruction, a sharp deterioration in the fiscal and external accounts, and increased debt for Dominica (Thomas and Theokritoff 2021).

The 2019 hurricane season proved to also be record-breaking with

Hurricane Dorian causing significant devastation in the Bahamas



estimated at **25% of the country's GDP**.

(Zegarra et al. 2020)

In addition to weather hazards, the Caribbean also faces the threat of geological hazards such as earthquakes and volcanic activities.

In Haiti, the January 2010 earthquake



caused unprecedented damage and losses, estimated at **120% of the country's 2009 GDP**,



killed more than **200,000 people**,

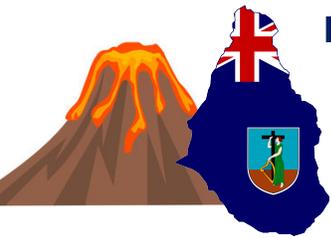


injured **250,000** and



made **1.5 million homeless**.

(International Monetary Fund 2010)



In Montserrat, the 1995 eruption of the Soufrière Hills volcano



left the southern **half of the island uninhabitable** and



distressed the economy.

(Caribbean Development Bank 2013)

St. Vincent and the Grenadines was hit hard by the eruption of the La Soufrière volcano in April 2021.

The explosive eruption created an urgent balance of payments need and a humanitarian crisis while the country was dealing with the fallout from the global pandemic.



Most agricultural output and a substantial share of livestock were lost in the surrounding area of the volcano, and



the direct damage to infrastructure and buildings alone were estimated at **US\$150 million or almost 21% of the GDP**.

(IMF 2021)



Table 1: Top 10 Natural Disasters in the Caribbean

Rank	Year	Country	Event	Total Damages ('000 US\$)	Total Damages (% of GDP)
1	2010	Haiti	 Earthquake	8,000,000	120
2	2017	Dominica	 Hurricane Maria	1,456,000	226
3	2004	Grenada	 Hurricane Ivan	889,000	148
4	2015	Dominica	 Tropical Storm Erika	482,810	90
5	2005	Guyana	 Riverine flood	465,100	56
6	1998	St. Kitts	 Hurricane Georges	400,000	105
7	1995	Antigua	 Hurricane Luis	350,000	109
8	2021	St. Vincent	 Volcanic eruption	325,000	21
9	1995	St. Kitts	 Hurricane Luis	197,000	64
10	1995	Dominica	 Hurricane Marilyn	175,000	63

Source: Calculated using data from Emergency Events Database (EM-DAT)

What makes Caribbean SIDS particularly vulnerable is that natural disasters present a systemic risk, as most of their small island territory could be affected at the same time (Cebotari and Youssef 2020), making recovery in the aftermath of a disaster even more challenging. Hazards can occur simultaneously or in rapid succession and their impacts can cascade. Recurring hazards further compound the socio-economic vulnerabilities of Caribbean countries. Many countries have barely recovered from one hazard, when another one hits, further stressing public resources. **In Saint Lucia, Hurricane Dean in 2007 caused close to 65 percent of GDP losses in the agriculture sector. Three years later, in 2010, Hurricane Tomas caused losses of nearly 45 percent of GDP** (WEF/EU/DANIDA 2021).

Climate change presents unique challenges for Caribbean SIDS, further worsening negative disaster impacts by contributing to more destructive and frequent droughts, floods and storms. One significant challenge is sea-level rise. Due to their small land size, most of Caribbean countries' populations, vital tourism and other physical infrastructure, and ecosystems are situated within 25 kilometres of the coastline and in several countries over 20 percent of the population live in low elevation coastal zones, which comprise areas less than 10 meters above sea level that are prone to flooding (Mycoo 2022). This results in many islands being exposed to the impacts of sea-level rise such as flooding, salinisation, permanent inundation, pressures on agricultural production and ecosystem health erosion (Nurse et al. 2014). Currently, the Caribbean's coastal capitals, ports, airports and road infrastructure, housing and industries are concentrated in the coastal zone, but Cashman and Nagdee (2017) predict that, based on sea level rise projections, almost all Caribbean port and harbour facilities will suffer inundation in the future. Caribbean SIDS are also large blue ocean states with significant marine resources, fisheries, and biodiversity that are highly exposed to the impacts of climate change.

The economic costs associated with responding to these natural disasters have been onerous for Caribbean SIDS which are now among the most heavily indebted SIDS worldwide.

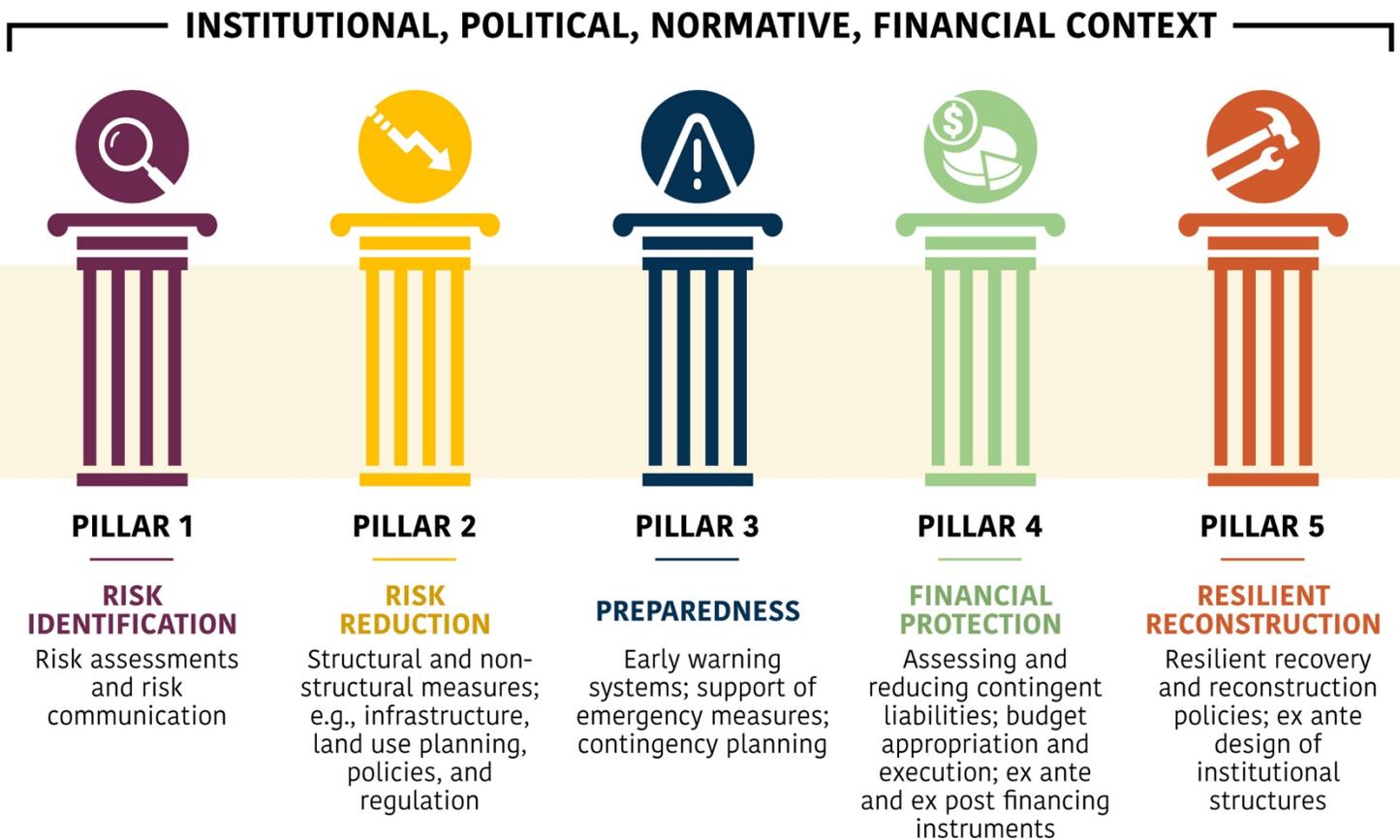
Reconstruction requires significant financial resources, most of which are usually financed through external borrowing. Over the past few decades, average debt in Caribbean SIDS has surged, from 55 percent of GDP in 1993 to 72 percent in 2023. In general, public debt exceeding 60 percent of GDP is considered high and detrimental to economic growth in the Caribbean (Sahay 2005; Greenidge et al. 2012). As of 2023, six Caribbean SIDS ranked in the top 10 of the world's most highly indebted SIDS, with public debt stocks exceeding 80 percent of GDP: Barbados, Dominica, Suriname, St. Vincent and the Grenadines, the Bahamas, and Antigua and Barbuda. Four more – Trinidad and Tobago, Saint Lucia, Jamaica, and Grenada – have debt-to-GDP ratios between 60- 80 percent. This indicates that not only are these ten Caribbean SIDS at risk of significant debt distress, but they also lack sufficient fiscal space to effectively respond to natural disasters and to the financing of risk reduction strategies.

3

World Bank and Disaster Risk Finance (DRF) Framework

The Sendai Framework for Disaster Risk Reduction 2015-2030 provides the global blueprint for disaster risk reduction through preparedness for response and to build back better in recovery, rehabilitation and reconstruction (UNDESA/UNDRR 2022). The World Bank's Strategic Framework for Comprehensive Risk Management of Disasters defines **five pillars of a disaster risk management strategy** (see Figure 1) and is aligned to the Sendai Framework. It assumes that while a country cannot escape the risk of natural hazards, it can significantly and efficiently reduce its vulnerability and its exposure to these risks. Financial protection is a key pillar that recognises the need to integrate risk management into a country's development plans and into public and private investment, both locally and nationally, to reverse the increasing impacts from natural disasters.

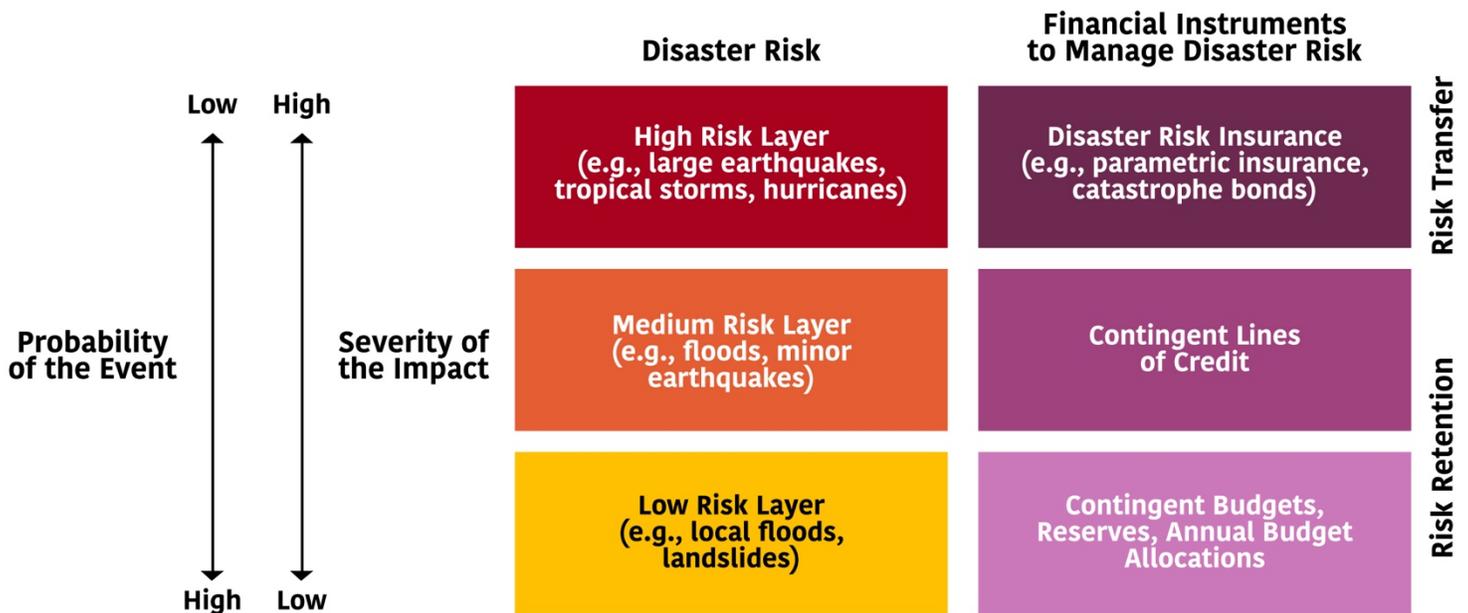


Figure 1: World Bank: Strategic Pillars of Disaster Risk Management

Source: World Bank and GFDRR, Sendai Report

The primary objective of a Disaster Risk Finance (DRF) strategy is to reduce the economic and fiscal impacts caused by disasters, based on the concept of cost-effectiveness by developing instruments differentiated according to the different types of risks identified (see Figure 2). To this end, a DRF strategy combines instruments for the retention and transfer of risk to increase the capacity to respond effectively and reduce the associated financial burden and, ultimately, to ensure the sustainability of public finances. When arranged in advance, DRF instruments can help governments respond to different types of disasters in a timely manner and to ensure that funds are available when they are needed for response and recovery. From a macroeconomic point of view, the various instruments forming the DRF strategy play the role of automatic stabilisers and help manage budgetary volatility caused by disasters.

Figure 2: Risk-Layered Financial Strategy



Source: Ghesquiere and Mahul (2010)

The World Bank rightly recognises that no single instrument is the solution to managing natural disaster risk. Rather, a full range of risk retention and transfer instruments should be combined in a DRF strategy to achieve cost-effective and timely funding for a country’s post-disaster needs. In this regard, the World Bank has been supporting the use of several DRF instruments across client countries. These include:

Contingency Funds

Contingency funds are used by governments to keep some resources immediately available for uncertain needs. They are most effective for financing the lower layer of small disaster costs. There are generally two options to structure contingency funds; they can be a contingency line item as part of the country’s budget, usually lapsing at the end of the fiscal year, or they can be extra-budgetary funds usually run by a separate legal entity. Whatever the arrangement, these funds should have sound and transparent administrative and disbursement procedures related to the occurrence of a disaster.



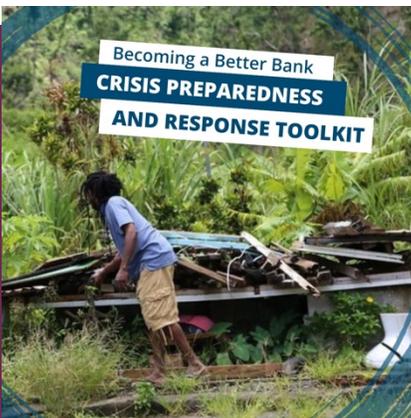
Development Policy Financing with Catastrophe Deferred Drawdown Options (CAT DDO)

For moderate-sized disasters, financing needs will usually exceed the buffers available in contingency funds and will require access to external resources. The World Bank’s CAT DDO instrument combines the provision of immediate liquidity following a disaster with requirements for a disaster risk reduction policy programme. As a policy instrument, the CAT DDO supports governments in developing integrated risk management strategies and resilient investments that go beyond disasters. As a contingent financing instrument, the CAT DDO provides much-needed financing after major natural catastrophes.



Risk Insurance and CAT Bonds

In the case of disasters with catastrophic impact, large-scale insurance is not cost-effective, but risk insurance through CAT bonds can allow some risk transfer. In addition to the World Bank’s own financing instruments, the World Bank also supports client countries in accessing the financial markets for contingent credit and risk transfer solutions, such as parametric insurance or CAT bonds.



In his first year as World Bank President, Ajay Banga led the adoption of the Evolution Roadmap, aiming to “create a world free of poverty on a liveable planet” (Development Committee 2023). Aligned to the Evolution Roadmap is an expanded **Crisis Preparedness and Response Toolkit** which the World Bank announced in June 2023 at the Summit for a New Global Financing Pact and further strengthened in early February 2024. The Toolkit is meant to help countries to prepare for and respond quickly and effectively to the financial risks of disasters (Development Committee 2024).

The new elements of the World Bank's Crisis Toolkit are as follows:

-  A **Climate Resilient Debt Clauses (CRDCs) option**. This offers eligible small states the option to defer interest as well as principal repayments for up to two years in times of crisis or catastrophe. It does not change these countries' debt to the World Bank. In addition, the CRDC fee of 5 basis points per annum, is proposed to be covered from the Livable Planet Fund once it is established.
-  A new **Rapid Response Option (RRO)** will allow governments to quickly redirect up to 10 percent of their undisbursed funds from across their World Bank or International Development Association (IDA) loan portfolio to address emergency needs like food and shelter for its citizens when a crisis occurs. The repurposed funds can be quickly disbursed through a Contingent Emergency Response Project, an innovative Investment Project Financing (IPF) project prepared in advance for future emergency response, or by topping up disbursements of an active Development Policy Financing (DPF) operation with a CAT DDO. Three Caribbean SIDS – Belize, Grenada and Saint Lucia – have adopted the RRO and it remains to be seen how this will work relative to other World Bank programming when accessed.
-  Increased **access to contingent financing** for crisis response. The World Bank plans to substantially scale up countries' access to pre-arranged financing for emergency budget support when major disasters hit, including through the greater use of CAT DDOs. The World Bank has doubled the country limits on CAT DDOs, with special provisions to increase access for small states. Scalable financing for a CAT DDO is now available.
-  Finally, these new measures are expected to work together with **enhanced access to catastrophe bonds and insurance** without adding debt. All countries now have the option to embed these risk management options into their World Bank financing operations, expanding countries' options to manage the risks of high-intensity but low-frequency disasters.

4

Climate Resilient Debt Clauses (CRDCs)

A shortcoming of the global financial architecture has been the absence of a comprehensive mechanism to suspend debt payments when a country is hit by a climate extreme event. In many cases, these countries have little choice but to continue servicing their debt when a climate shock hits, diverting scarce fiscal resources away from emergency response efforts. For example:

IN SEPTEMBER 2017

Antigua and Barbuda had to make a **US\$3 million** debt payment to the IMF one day after Hurricane Irma had caused over **US\$150 million** in loss and damage to the smaller, sister island of Barbuda.



Climate Resilient Debt Clauses (CRDCs) have been proposed as a tool for addressing this debt suspension mechanism.

A CRDC – also known as a debt pause clause, or a natural disaster clause - is an innovative provision in a sovereign debt contract that gives a government the discretion to request the deferral of debt payments (principal and/or interest) temporarily for a pre-agreed period when a pre-defined trigger threshold is met after a natural hazard event, like a tropical storm or flooding (Mustapha et al. 2023).

CRDCs do not provide fresh financing to governments. Instead, they quickly free up fiscal space for governments to redirect resources towards disaster response that would otherwise be used for repaying debt. CRDCs, however, do have limitations. They may lead to increased debt servicing costs in the long run due to the accumulation of interest and extended repayment periods. In addition, it remains to be seen if debt pause clauses may discourage private investors from lending to countries with such clauses in their debt contracts, and how this may negatively impact the creditworthiness of a country.

Debt pause clauses can be a valuable addition to a country's DRF toolkit, especially if the country is prone to severe liquidity problems and foreign exchange shortages after a disaster, and it has little access to quick and affordable external post-crisis financing.



Grenada became the first country in the world to include a ‘hurricane clause’ in its bonds during its second debt restructuring in 2015,

even as the economic effects of the devastation wrought by Hurricane Ivan more than a decade ago were still being felt.

The hurricane clause, which covers Grenada's main creditors - the 2030 bondholders, Ex-Im Bank of the Republic of China, and the Paris Club - allows Grenada to defer the principal and interest payment due on the next semi-annual payment date if it experiences a tropical cyclone causing between US\$15 million and US\$30 million in losses and to defer the principal and interest payments due on the next two semi-annual payment dates if it experiences a tropical cyclone causing US\$30 million or more in losses. The determinations of both what constitutes a qualifying tropical cyclone and the dollar amount of loss experienced are tied to Grenada's parametric insurance policy from the Caribbean Catastrophe Risk Insurance Facility (CCRIF), a risk pool that provides coverage for catastrophic hurricanes, earthquakes and excess rainfall events to Caribbean and Central American countries.

In the context of its 2018-2019 debt restructuring, Barbados implemented the natural disaster clause across nearly its entire external debt stock, perhaps reflecting on the 2017 very active Atlantic Hurricane season that saw Hurricane Maria decimate Dominica and Barbuda. Like Grenada, Barbados' natural disaster clause allows Barbados to defer principal and interest payments when it receives a payout from CCRIF. What differs between the two nations' natural disaster clauses is that Barbados':

- i. expanded trigger events to include earthquakes and excess rainfall events in addition to tropical cyclones; and
- ii. contains a lower loss threshold of US\$5 million, compared to the thresholds of US\$15 million and US\$30 million for Grenada.

In July 2021, the Inter-American Development Bank (IDB) became the first MDB to offer debt pause clauses through its Flexible Financing Facility via the Principal Payment Option.

Following the occurrence of an eligible event (earthquake, tropical cyclone and/or other natural hazard), a country can trigger a one-time deferral of principal repayments for two years. The IDB has linked its debt pause option with its contingent credit instrument which has prior actions related to strengthening climate change resilience and disaster risk management.

In 2023, the World Bank introduced the CRDC for small islands and other small states to defer principal and interest payments (and other loan charges) for up to two years when struck by earthquakes and tropical cyclones. At COP29 in November 2024, the World Bank announced that it had further broadened the CRDC scope to cover not just the impact from earthquakes and tropical storms but any natural disaster, including droughts, floods and public health emergencies caused by biological events such as pandemics in eligible countries. Table 2 provides the key features of CRDCs offered by the IDB and World Bank.



Table 2: Key Features of Climate Resilient Debt Clauses Offered by the Inter-American Development Bank (IDB) and the World Bank

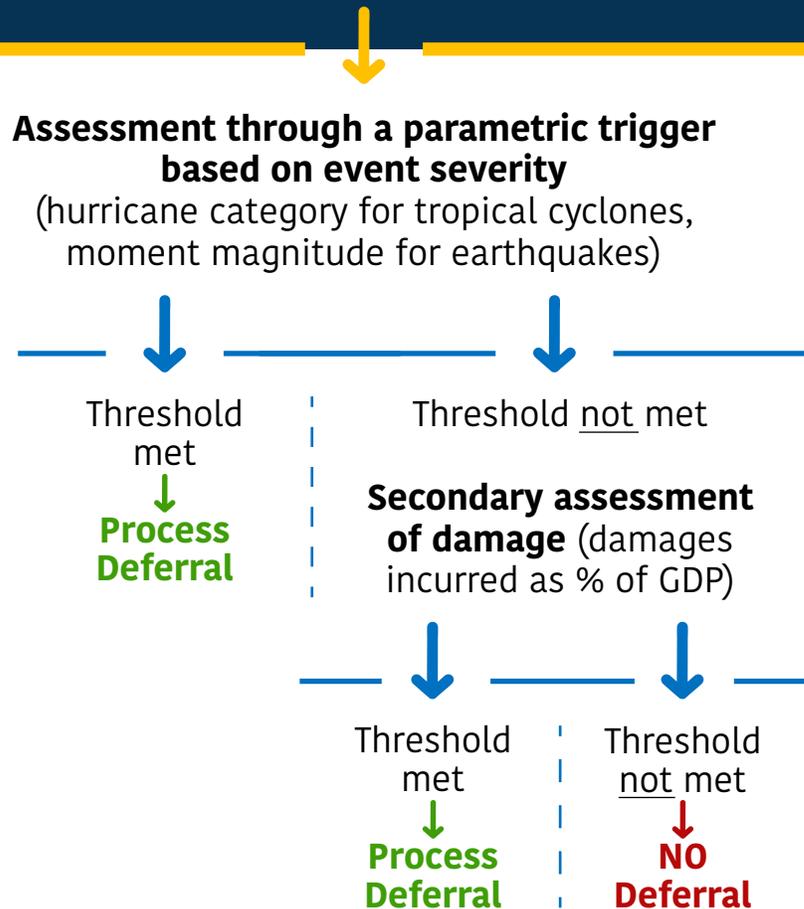
Feature	IDB	World Bank
Year Established	2021	2023
Eligibility	All borrowing member countries	45 small states and island economies
Direct Link to Other Instruments	Yes, requires activation of Contingent Credit Facility (CCF)	None
Type of Deferral	One-time deferral of principal repayments	One-time deferral of principal repayments, interest and loan charges
Duration of Deferral	Up to 2 years	Up to 2 years
Perils Covered	Tropical cyclones/hurricanes, earthquakes and excess rainfall	Natural disasters and public health emergencies caused by biological events
Triggers	Parametric and non-parametric	Parametric
Transaction Fee to Government	0.05% on outstanding loan balance	None (covered by donors)

Source: Mustapha and Benson. 2024. "Demystifying Pre-Arranged Financing for Governments: A Stocktake of Financial Instruments from International Financial Institutions." Centre for Disaster Protection

A government declaration of national emergency following the occurrence of a covered event is required before a CRDC deferral request is submitted to the World Bank. There are two types of (pre-specified) event triggers that can activate a CRDC: primary and secondary triggers (See Figure 3 below). A primary parametric trigger measures the intensity of the disaster event, such as the wind speed of hurricanes or the magnitude of earthquakes. If, upon verification by the World Bank, it is established that the primary trigger has not been satisfied, the World Bank will determine whether estimated damages from the eligible event are greater than or equal to 10 percent of the country’s GDP, as last published by the World Bank, based on the World Bank’s Global Rapid Post-Disaster Damage Estimation (GRADE).

Figure 3: CRDC Deferral Request by Triggers

**Borrower declaration of emergency,
and request for deferral**



The World Bank expects the CRDC to be triggered for low frequency/high severity events, thereby positioning it in the risk layering above Catastrophe (CAT) DDOs that may trigger for relatively lower severity events, and below CAT risk transfer instruments.



St. Vincent and the Grenadines,

which suffered damages estimated at around 19% of GDP from Hurricane Beryl,

became the first Caribbean country to trigger its CRDC with the World Bank and to obtain much-needed liquidity for its response efforts.

The storm affected 56 percent of the population, resulting in catastrophic damage across the Southern Grenadines, where over 90 percent of buildings and critical infrastructure was destroyed. Vital sectors like tourism and fishing, were also impacted, leading to considerable economic losses.

In the wake of the destruction wrought by Hurricane Beryl, Grenada activated its hurricane clause with its private creditors, **enabling the government to defer some US\$30 million** in interest payments due to bondholders on 12 November 2024 and 12 May 2025. Towards the end of November 2024, there was little public information available on the other three Caribbean countries – the Bahamas, Barbados, and Belize – that activated their debt pause clauses with the IDB or World Bank. These experiences would have provided valuable lessons to other countries with debt pause clauses in their loan contracts or contemplating the inclusion of CRDCs in their sovereign bond agreements.



5

Catastrophe Deferred Drawdown Options (CAT DDOs)

Contingent credit from the MDBs represents a major part of pre-arranged financing, with the World Bank being the largest provider (Plichta and Poole 2023). The World Bank has its Development Policy Loan focused on strengthening disaster risk management with the Catastrophe Deferred Drawdown Option (CAT DDO) to give a country access to immediate liquidity to address shocks related to natural disasters and public health emergencies caused by a biological event. Approved prior to the disaster, the CAT DDO disburses quickly once the event occurs, the drawdown trigger is met, and programme implementation remains satisfactory. The country limit is set at US\$1 billion or 0.5 percent of GDP, whichever is less. Typically, it is the declaration of a state of emergency by the government that allows the country to drawdown on the line of credit from the World Bank. The three-year drawdown period may be renewed (with a fee) up to four times, for a maximum of 15 years in total. The CAT DDO has an optional revolving feature, which means that the amounts repaid during the drawdown period are available for subsequent withdrawal. The terms of the ex-ante loan agreements require the borrower country to set out the specific triggers or thresholds used to define the shock event and the loan amount(s) or facility to be made available. Table 3 shows the major terms and conditions of the World Bank's CAT DDOs.

Table 3: Major Terms and Conditions of the World Bank's CAT DDOS

Eligibility	All IDBR-eligible borrowers upon meeting approval criteria.
Country Limit	0.50% of GDP or US\$1 billion, whichever is less. Limits for small states considered on a case-by-case basis.
Approval Criteria	Existence of an adequate macroeconomic policy framework and satisfactory disaster risk management programme, including indicators that address natural disasters.
Drawdown	Up to the full loan amount when a natural catastrophe, including a natural disaster and a public health emergency due to a biological event, occurs and when the pre-defined trigger condition is met at any time prior to the closing date. Eligibility for drawdown also requires satisfactory implementation of the reform programme. The drawdown period may be renewed up to a maximum of four times, for a maximum of 15 years in total.
Repayment Terms	Repayment terms are applicable from time of drawdown. They must be determined upon commitment and may be modified upon withdrawal within prevailing maturity policy limits.
Lending Rate	Variable market-based reference rate plus a variable spread. The lending rate is reset semi-annually on each interest payment date and applies to interest periods beginning on those dates.

Lending Rate Spread	IBRD's average cost margin on related funding relative to the applicable reference rate plus IBRD's contractual spread of 0.50% and a maturity premium for loans with average maturities greater than 8 years. The spread is recalculated quarterly and is applicable to all interest rate reset dates on or after each calculation date.
Front End Fee	0.50% of the loan amount is due within 60 days of the effectiveness date; it may be financed out of loan proceeds.
Renewal Fee	0.25% of the undisbursed loan balance.

Source: IBRD Development Policy Loan with Catastrophe Deferred Drawdown Option (CAT DDO), Treasury Product Note, July 2024.

Despite CAT DDOs having relatively fewer complex terms and conditions, Caribbean SIDS have made very limited use of this DRF tool. In 2020, the World Bank approved CAT DDOs for St. Vincent and the Grenadines and Grenada, and for Dominica in 2022. In the case of St. Vincent and the Grenadines, its US\$20 million CAT DDO provided a contingent line of financing in case of future natural or health-related disasters. It also supported the authorities' response to the COVID-19 pandemic. The financing, which is from the International Development Association (IDA), the concessional financing arm of the World Bank, is interest-free with a maturity of 40 years, including a grace period of 10 years.

From 9th April 2021, the explosive eruption of the La Soufrière volcano began hitting St. Vincent and the Grenadines hard, creating an urgent balance of payments need and a humanitarian crisis while the country was dealing with the economic and social fallout from the COVID-19 pandemic (IMF 2021). The eruption destroyed livelihoods and a significant part of agricultural output and caused structural damage to public infrastructure. The explosive eruption required the evacuation of 20,000 people from the high-risk zones around the volcano and surrounding countries.

Estimates pointed to economic damages of more than 30 percent of GDP. Two days after the eruption, St. Vincent and the Grenadines triggered its CAT DDO and the **government received US\$20 million in disaster risk financing to support its response to the volcanic eruption**, the first large financial assistance provided to the country following the eruption. The CAT DDO could have been renewed for an additional three years to June 2026, but regrettably this was not done, leaving St. Vincent and the Grenadines without similar natural disaster financing in the wake of Hurricane Beryl.



Grenada's CAT DDO – approved in 2020 – provided the country with contingent financing in case of natural disasters while supporting the country's reform programme to build multi-sectoral resilience to disaster and climate risks. The US\$20 million in CAT DDO funds may be drawn in the case of an official declaration of an emergency, which could be related to a natural disaster or a health outbreak. Like the CAT DDO of St. Vincent and the Grenadines, Grenada's contingent line of credit was also available to be drawn down at any time over 2020-2023, but government opted to not exercise this option given the ever-present risks of natural disasters and particularly a “combined shock” scenario of a pandemic and a hurricane. The government did choose, however, to renew the CAT DDO for an additional three years to 2026. As a result, Grenada's CAT DDO contingent financing drawdown was triggered after Hurricane Beryl, which the government is now using to partly fund its respond to the damage.



6

Catastrophe (CAT) Bonds

Sovereign catastrophe (CAT) bonds are designed to transfer the risk of natural disasters from issuers to capital market investors, and the ensuing funds that the country receives do not count against its debt ceiling. A CAT bond is a high-yielding debt instrument which offers relatively attractive returns compared to other fixed income securities. Compared to traditional fixed income securities, CAT bonds offer higher returns to investors who are willing to accept the risk of absorbing significant write-downs on the principal and interest payments of the bond, if a predefined insured event such as an earthquake or a flood occurs and triggers a payment to the bond issuer. In addition, because losses on CAT bonds are not correlated with other capital market instruments, they offer portfolio diversification for large investors. The CAT bond price is composed of a risk-free base rate and the spread, which represents only the insurance risk and not the credit risk of the issuer. The spread varies depending on the probability of the natural disaster occurrence. The global CAT bond market has grown significantly in recent years, reaching US\$48.5 billion at the end of November 2024 (Artemis 2024).

Table 4: Difference between CAT Bonds and Insurance

Criteria	CAT Bonds	Insurance
Market	Capital markets: clients access a much larger pool of investors	(Re)insurance markets: smaller pool of capital from (re)insurance industry
Term	Typically, longer coverage periods of 3-5 years allow sponsor to lock in premium rates	Typically, one-year coverage period
Credit Risk	Fully funded transaction. No risk of default by investors taking the risk. No risk of missed or late payments since transaction is fully collateralised.	No upfront payments made by the insurer; payments only made if and when a triggering event occurs. Client exposed to potential default or late payments of insurance provider(s).
Documentation and Transaction Costs	Complex documentation and large transaction costs	Relatively less complex documentation and lower transaction costs

Source: Development of Catastrophe Bonds for Sovereign Disaster Risk Transfer. Disaster Risk Financing and Insurance Program, World Bank

The World Bank's Capital at Risk (CAR) Notes programme transfers risks related to natural disasters and other risks of developing countries to capital markets. Table 5 provides key metrics for sovereign CAT bonds issued by the World Bank through its Capital-at-Risk Notes programme. Between 2017 to 2024, the World Bank issued a total of US\$4 billion across 21 sovereign CAT bonds for financial protection against earthquakes and hurricanes. Mexico, which is the first sovereign to issue CAT bonds in 2006, has been the most prolific issuer of these DRF instruments over the past two decades. From an issuer perspective, the premium costs for CAT bond protection may be expensive, costing as much as US\$84 million for Mexico's Pacific Hurricane (CAR 135). So far, the premium to payout ratio of these CAT bonds is 1.55, which implies that US\$1 of payouts have been made for every US\$1.55 spent on CAT bond financial protection.

Table 5: Key Metrics for Sovereign CAT Bonds Issued by the World Bank, 2017-2024

CAT Bond Series	Capital-at-Risk (CAR) Issuance	Principal Amount (US\$ mn)	Risk Margin (%)	Expected Loss (%)	Risk Multiple	Estimated Premium Costs (US\$ mn)	Total Payouts (US\$ mn)
FONDEN 2017-2020	Mexico Earthquake (CAR 113)	150	4.50	3.43	1.31	27.00	150
	Mexico Atlantic Hurricane (CAR 114)	100	9.30	5.56	1.67	18.60	-
	Mexico Pacific Hurricane (CAR 115)	110	5.90	3.96	1.49	12.98	-
Pacific Alliance 2018-2021	Chile Earthquake (CAR 116)	500	2.50	0.86	2.91	37.50	-
	Colombia Earthquake (CAR 117)	400	3.00	1.56	1.92	36.00	-
	Mexico Earthquake (CAR 118)	160	2.50	0.86	2.91	37.50	-
	Mexico Earthquake (CAR 119)	100	8.25	6.54	1.26	16.50	-
	Peru Earthquake (CAR 120)	200	6.00	5.00	1.20	29.89	60

CAT Bond Series	Capital-at-Risk (CAR) Issuance	Principal Amount (US\$ mn)	Risk Margin (%)	Expected Loss (%)	Risk Multiple	Estimated Premium Costs (US\$ mn)	Total Payouts (US\$ mn)
Philippines 2019-2022	Philippines Earthquake (CAR 123)	75	5.50	3.00	1.83	12.38	-
	Philippines Typhoon (CAR 124)	150	5.65	3.00	1.88	22.73	52.5
FONDEN 2020-2024	Mexico Earthquake (CAR 125)	175	3.50	0.90	3.89	24.50	-
	Mexico Earthquake (CAR 126)	60	9.00	5.78	1.56	21.60	-
	Mexico Atlantic Hurricane (CAR 127)	125	10.00	5.79	1.73	50.00	-
	Mexico Pacific Hurricane (CAR 128)	125	6.50	4.06	1.60	32.50	62.5
Jamaica 2021-2023	Jamaica Hurricane (CAR 130)	185	4.40	1.52	2.89	19.54	-
Chile 2023-2026	Chile Earthquake (CAR 131)	350	4.75	1.00	4.75	49.88	-

CAT Bond Series	Capital-at-Risk (CAR) Issuance	Principal Amount (US\$ mn)	Risk Margin (%)	Expected Loss (%)	Risk Multiple	Estimated Premium Costs (US\$ mn)	Total Payouts (US\$ mn)
FONDEN 2024-2028	Mexico Earthquake (CAR 132)	225	4.00	1.17	3.41	36.00	-
	Mexico Earthquake (CAR 133)	70	11.00	8.30	1.32	30.8	-
	Mexico Atlantic Hurricane (CAR 134)	125	13.50	7.96	1.69	67.5	-
	Mexico Pacific Hurricane (CAR 135)	175	12.00	4.09	2.93	84.00	-
Jamaica 2024-2028	Jamaica Hurricane (CAR 136)	150	7.00	1.50	5.30	42.00	-

Sources: Plichta, Michele and Lydia Poole. 2023. "The State of Pre-Arranged Financing." Centre for Disaster Protection; Artemis Deal Directory. <https://www.artemis.bm/deal-directory/>

In the Caribbean, the first multi-country CAT bond was issued through CCRIF in collaboration with the World Bank in 2014. The US\$30 million CAT bond provided three years of annual aggregate protection for hurricanes and earthquakes affecting 16 CCRIF member countries and used the same triggers and measurements as the CCRIF's underlying parametric insurance model (CCRIF 2014).

Jamaica is the only Caribbean country to use CAT bonds as part of its multi-layered disaster risk financing strategy, but its experience is instructive for other Caribbean nations considering use of these highly complex disaster risk financing instruments. Jamaica is highly vulnerable to natural hazards of varying intensity and severity.

Between 1950 and 2023, Jamaica has been hit by

23 hurricanes

which caused significant physical and financial damages, putting considerable strain on the country's public finances.



Loss and damages from Hurricane Gilbert in 1998 alone were estimated at US\$2.3 billion (in 2020 constant \$) or half of the country's GDP. Like the rest of the Caribbean, these extreme weather events are expected to become more frequent and more intense in Jamaica, resulting in greater financial losses.

As a result, in 2021, Jamaica became the first small island state in the Caribbean region to independently sponsor a CAT bond with the support of the World Bank.

The CAT bond provided Jamaica with US\$185 million in natural disaster insurance coverage against losses from named tropical storms across three Atlantic hurricane seasons ending in December 2023 (see Figure 4). Jamaica's CAT bond complements the country's portfolio of disaster risk financing instruments, strengthening its resilience against destructive and costly natural disasters without increasing sovereign debt which then stood at over 90 percent of GDP. Jamaica's CAT bond was the first to feature an innovative cat-in-a-grid parametric trigger design for tropical cyclone risk, which partitions areas on and around the island of Jamaica into several parametric boxes. Within each box, a set of storm track and central air pressure thresholds are defined.

A payout of some, or all, of the principal can only be triggered if a storm passes through one or more of these areas and the central pressure of the storm is at or below a minimum threshold. Jamaica, however, received no payouts under its first independently sponsored CAT bond with the World Bank because no hurricanes directly tracked over Jamaica over 2021-2023 to parametrically trigger the conditions for payouts.

Figure 4: Transaction Structure for Jamaica's CAR 130 CAT Bond



Source: Financial Protection Forum (2021)

In April 2024, the World Bank arranged Jamaica's second CAT bond to provide US\$150 million in insurance protection for named storms over four Atlantic hurricane seasons ending December 2027. Three months later, in July 2024, Hurricane Beryl caused substantial devastation to property and infrastructure along Jamaica's southern coast, but the country did not receive any payout from its CAT bond because the conditions for triggering a payout were hard and specific; the air pressure during the hurricane was not at a predetermined threshold to activate Jamaica's catastrophe bond coverage. As a result, the V20 Group called on the World Bank to reassess the usefulness of this complex and costly financial instrument, particularly through instituting more flexible and broader trigger conditions (Ahmed and Rambarran 2024).

Jamaica's CAT bond experience is a result of a continued engagement on disaster risk financing between the government of Jamaica and the World Bank. Prior to the CAT bond transaction, the country received both financial and technical support from the World Bank in understanding the financial impact of natural disaster events, particularly from tropical storms and earthquakes, and the cost-benefit analysis of using various disaster risk financing instruments. Throughout the implementation,

support from the World Bank included managing the preparation, structuring and executing the CAT bond transaction, and procuring the external service providers, such as the risk modeller, event calculation agent and listing agent. The World Bank also secured bilateral financial support in the form of grants from donor countries to finance CAT bond premium and transaction costs related to the design, structure and placement of the CAT bond.

Since the World Bank is exploring replicating CAT bonds throughout the Caribbean region to add another layer of financial protection against disaster risks for Caribbean countries, it is important for the institution to take on board the lessons from Jamaica's CAT bond experience.

In 2022, the Caribbean Development Bank signalled its intentions to incorporate CAT bonds as a measure for disaster risk financing to support regional economies (Artemis 2022), but, two years later, does not seem to have progressed on this issue.



7

Sovereign Parametric Risk Insurance and Regional Insurance Pool: CCRIF SPC

Following the devastation caused by Hurricane Ivan in 2004, CARICOM Heads of State requested assistance from the World Bank to design and implement a cost-effective catastrophic risk transfer programme for the Caribbean region. This led to the establishment of the **Caribbean Catastrophe Risk Insurance Facility (CCRIF)** in 2007, **the world's first multicounty parametric insurance pool that provides insurance coverage to governments for tropical cyclones, earthquakes, and flooding at a relatively low cost through the innovative risk pooling approach.**

(CCRIF Annual Report 2022-2023)

The World Bank has been successful in supporting the expansion of participating countries, and the programme has widened the hazards it offers coverage for, but countries have not significantly increased coverage levels. Annual premiums typically vary from US\$200,000 to US\$4 million, for coverage ranging from US\$10 million to US\$50 million. Claims payments are based on parametric triggers of a predefined event rather than on an assessment of actual losses on the ground, and in the case of CCRIF, payments are made within 14 days of the event. This measurement, made remotely by an independent agency, allows for transparent, low-settlement costs and quick-disbursing contracts.

Between June 2007 – November 2024,
CCRIF has made payouts totalling

US\$385 million to
17 member
governments.



The 2024 Atlantic hurricane season has seen the largest payouts in CCRIF’s history.

In total, CCRIF issued US\$85 million in payouts to governments and non-sovereign policyholders in response to Hurricane Beryl, through 12 individual parametric policies across five countries. This suggests that CCRIF is a central component of the DRF strategies for Caribbean SIDS. The single largest payout in CCRIF’s history was made to Grenada on 9th July 2024, just eight days after Hurricane Beryl made landfall, in the amount of US\$44 million, and covering about one-fifth of the government’s disaster financing needs. For the 2023/2024 period, Grenada purchased three parametric insurance policies with CCRIF covering Tropical Cyclones and Earthquakes, Excess Rainfall and the Caribbean Oceans and Aquaculture Sustainability Facility (COAST).

Table 6 shows the CCRIF payouts for Hurricane Beryl made to Caribbean governments and non-sovereign entities. Until the payout to Grenada, Haiti had received the single largest payout of nearly US\$40 million from CCRIF, following the 2010 earthquake.

Table 6: CCRIF Payouts for Hurricane Beryl

Country	CCRIF Insurance Policy	Tropical Cyclone (US\$)	Excess Rainfall (US\$)	Total (US\$)
St. Vincent & the Grenadines	Government	1,862,728	-	1,862,728
Grenada	Government	42,425,110	548,850	42,973,960
	COAST (fisheries sector)	1,066,667	-	1,066,667
	Electric Utilities (GRENLEC)	9,323,276	-	9,323,276
	CWUIC Water Utilities (NAWASA)	2,201,833	-	2,201,833
Jamaica	Government	16,309,185	10,278,754	26,587,939
Cayman Islands	Government	539,568	-	539,568
	CTEC (Cayman Turtle Conservation and Education Centre Ltd.)	119,474	-	119,474
Trinidad & Tobago	Government (Tobago)	372,752	-	372,752
	Government (Trinidad)	56,502	-	56,502
TOTAL		74,277,095	10,827,604	85,104,699

Source: <https://www.ccrif.org/news/>

While Jamaica did not benefit from its World Bank-facilitated CAT bond insurance coverage in the aftermath of the damages suffered from Hurricane Beryl, **it benefited from an approximately US\$16.3 million payout from CCRIF after Hurricane Beryl triggered its parametric tropical cyclone insurance policy. Jamaica's excess rainfall parametric insurance from the CCRIF was also triggered, receiving a payout of US\$10.3 million. As a result, CCRIF met over 13 percent of Jamaica's natural disaster financing needs.**



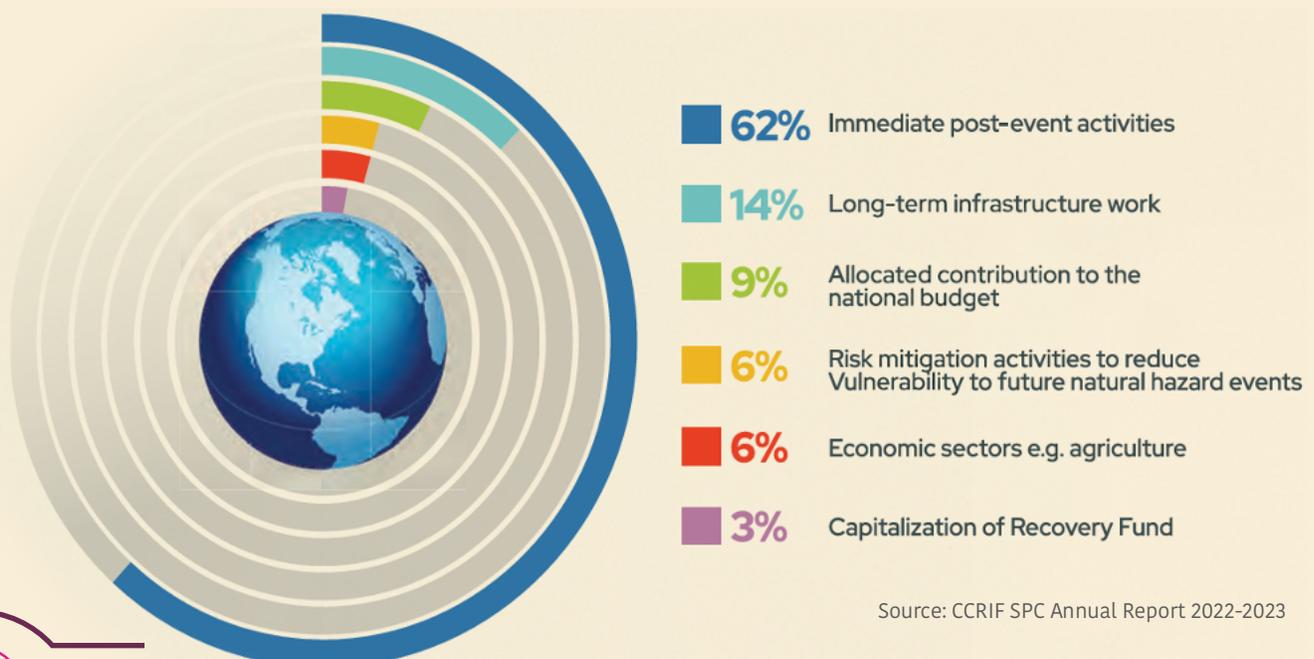
St. Vincent and the Grenadines, however, received a relatively smaller proportion of less than 1 percent of its total financing needs. The significant differences in payouts relative to the initial damage estimates among the various islands reflects several factors. These include the specific details of insurance coverage, customisation of the parametric triggers and the modelled loss estimates (Meenan 2024). Nevertheless, CCRIF's record payouts for Hurricane Beryl underline how the institution has evolved to meet its mandate and to demonstrate the benefits to Caribbean SIDS of further expanding parametric catastrophe insurance coverage.

Since its inception, CCRIF's payouts when disaggregated by disaster event type are as follows:



The bulk of CCRIF's payouts between 2017-2023, about 62 percent, was used to fund immediate post-event activities (see Figure 5). Another 14 percent of total payouts was used to fund critical public infrastructure work, while nine percent were allocated contribution to the national budget. Some six percent of CCRIF's payouts provided support to economic sectors such as agriculture and six percent went to finance risk mitigation activities to reduce vulnerability to future natural hazard events. The remaining three percent was used to capitalise a recovery fund (CCRIF Annual Report 2022-2023). Use of CCRIF payouts over the years has included providing food, shelter and medicine for affected people; stabilising drinking water plants; providing building materials for people to repair their homes; repairing critical infrastructure such as roads, bridges, hospitals and schools; payment of government salaries; and support for agriculture.

Figure 5: Use of CCRIF Payouts, 2007-2023



Source: CCRIF SPC Annual Report 2022-2023



CCRIF has demonstrated that sovereign catastrophe risk insurance can effectively provide a level of financial protection for Caribbean SIDS which are highly vulnerable to natural hazards, but it also demonstrates that no country can fully insulate itself against losses from catastrophic damage. For example, in the aftermath of Hurricane Maria, Dominica received about US\$20 million in payouts from CCRIF. However, estimates of the Dominica's reconstruction costs were in the order of over US\$1 billion. This is where CCRIF's insurance products need to be supplemented with disaster-related financial instruments which are available in the larger and deeper capital markets.

Despite their limitations and limited uptake, the World Bank's disaster insurance activities have made progress on awareness raising, capacity building, and product development in the Caribbean region. These are important building blocks for future progress on insurance market development and the broader ability of Caribbean governments to manage their financial disaster risks.

8

Recommendations

Over the past decade, the World Bank has been commendably supporting some Caribbean governments to increasingly mainstream disaster risk management into their national development programmes through strategic country engagements. The World Bank has also been shifting from post-disaster response toward pre-disaster risk reduction and financing arrangements. Its analytical work has built on regional disaster reconstruction efforts and there appears to be better agency coordination working with ministries of finance.

As the 2024 Atlantic hurricane season comes to an end, Caribbean governments should learn from the experience with Hurricane Beryl and should be looking ahead to ensure there is more pre-arranged financial protection that better matches the scale of existing and future disaster risks.



In this respect, the World Bank needs to significantly improve the rollout of its Crisis Preparedness and Response Toolkit in the Caribbean region, undertaking the following recommended actions:



1. **Develop a Caribbean loss and damage data hub for all severities of natural hazards.**

Historical loss and damage data are important components of disaster risk assessment and actuarial analysis and play a significant role in the development of natural disaster risk strategies and financing instruments. A geo-referenced inventory of public assets at risk and their attributes (e.g., exact location, construction type, number of stories) would go a long way in building a loss and damage database, which could be integrated with hazard and vulnerability models to establish a fiscal disaster risk profile. Such a regional loss and damage data hub would enable Ministries of Finance and other line ministries to access critical information for recovery planning and for prioritising reconstruction and retrofitting of existing infrastructure in the aftermath of a disaster.



2. Use its tremendous convening power to promote greater uptake of catastrophe risk financing solutions among Caribbean SIDS.

Given its in-depth knowledge of Caribbean countries, its relationship with donors and a reputation for impartiality in dealing with the international reinsurance market, the World Bank can use its tremendous convening power to promote greater acceptance and usage of catastrophe risk financing solutions, especially pre-arranged funding, among Caribbean SIDS. A stronger alignment between the Caribbean's disaster risk funding requirements and the World Bank's new Crisis Toolkit can better support fiscal discipline, debt sustainability prospects and country credit risk ratings as well as macroeconomic stability and growth. An important factor for successful use of contingent credit lines is the need for clarity and understanding on trigger conditions to ensure they are used to improve DRF solutions and not merely as easily accessible budget support. These issues can be largely resolved through greater World Bank dialogue with Caribbean governments, greater familiarity with the instrument, and World Bank analytics that help the government optimise the timing of drawdowns.



3. Launch a substantial communications, outreach and training campaign to explain the nuances of the various crisis tools.

The World Bank needs to launch a substantial communications campaign around DRF solutions in the Caribbean region, explaining the nuances of the various crisis tools to its stakeholders. For example, there is no publicly available information on the experiences of Bahamas, Barbados and Belize after they activated their debt pause clauses with the World Bank. Likewise, CAT DDOs, though limited in use in the Caribbean, have provided a timely, relatively affordable and important source of post-disaster financing for the governments of St. Vincent and the Grenadines (2021) and Grenada (2024).

An advantage of the CAT DDO has been its soft trigger mechanism, which has enabled governments to access funds based on a declaration of emergency and to finance emergency response and recovery. This avoids a problem faced by parametric financial mechanisms such as the CAT bonds, which do not increase sovereign debt, but financial support is unavailable if a disaster occurs that does not precisely fit the parametric trigger, as in the recent case of Jamaica after the passage of Hurricane Beryl.

As with all parametric insurance, the effectiveness of CAT bonds depends on accurate and reliable data to define triggers and thresholds for insurance payouts, another issue on which the World Bank requires clear communications and explanations to potential Caribbean country clients.



4. Partner with the Global Shield against Climate Risks to Strengthen CCRIF.

The Global Shield against Climate Risks (Global Shield) is joint Group of Seven (G7)/Vulnerable Twenty Group (V20) initiative to strengthen financial protection and resilience of vulnerable countries and people. It deploys pre-arranged and trigger-based financing solutions against climate and disaster risks to climate-vulnerable developing countries (Global Shield 2024). The Global Shield Financing Structure comprises three financing vehicles, namely the Global Shield Solutions Platform, the Global Shield Financing Facility and the Climate Vulnerable Forum and V20 Joint Multi-Donor Fund, and can provide additional support, if necessary. There is an opportunity for the World Bank to partner with the Global Shield to expand the access of Caribbean SIDS to premium and capital support. Strengthening regional risk carrying capacity through the four regional risk pools including CCRIF is a key part of these resilience-building efforts. Specifically, this can include expanding the parametric insurance coverage of CCRIF and the creation of a reinsurance facility of sovereign catastrophe regional risk insurance pools to bring down the high cost of reinsurance.



5. Apply the DRF framework to adaptive social protection (ASP) programmes to better meet the needs of Caribbean populations that are disproportionately vulnerable to disasters caused by natural hazards.

Even if funding is available and timely, getting it to the right people is most important. As disasters become more severe and frequent in the Caribbean, governments need more shock-responsive programmes that can reach affected communities and households with immediate assistance. Applying the principles of the DRF framework to ASP programmes not only helps to reduce the need for additional funds, but it also helps to ensure assistance is provided as soon as possible following a shock, or, in the case of slow-onset disasters such as drought, before communities are severely affected. For example, the new Investment Project Financing (IPF) DDO can link disbursements with ASP programmes, and this can be accomplished by strengthening collaboration with poverty and social development experts in the World Bank through the development and application of data, tools, analyses, and tracking systems.



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How Can the World Bank Better Support Natural Disaster Risk Financing in Caribbean SIDS?

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