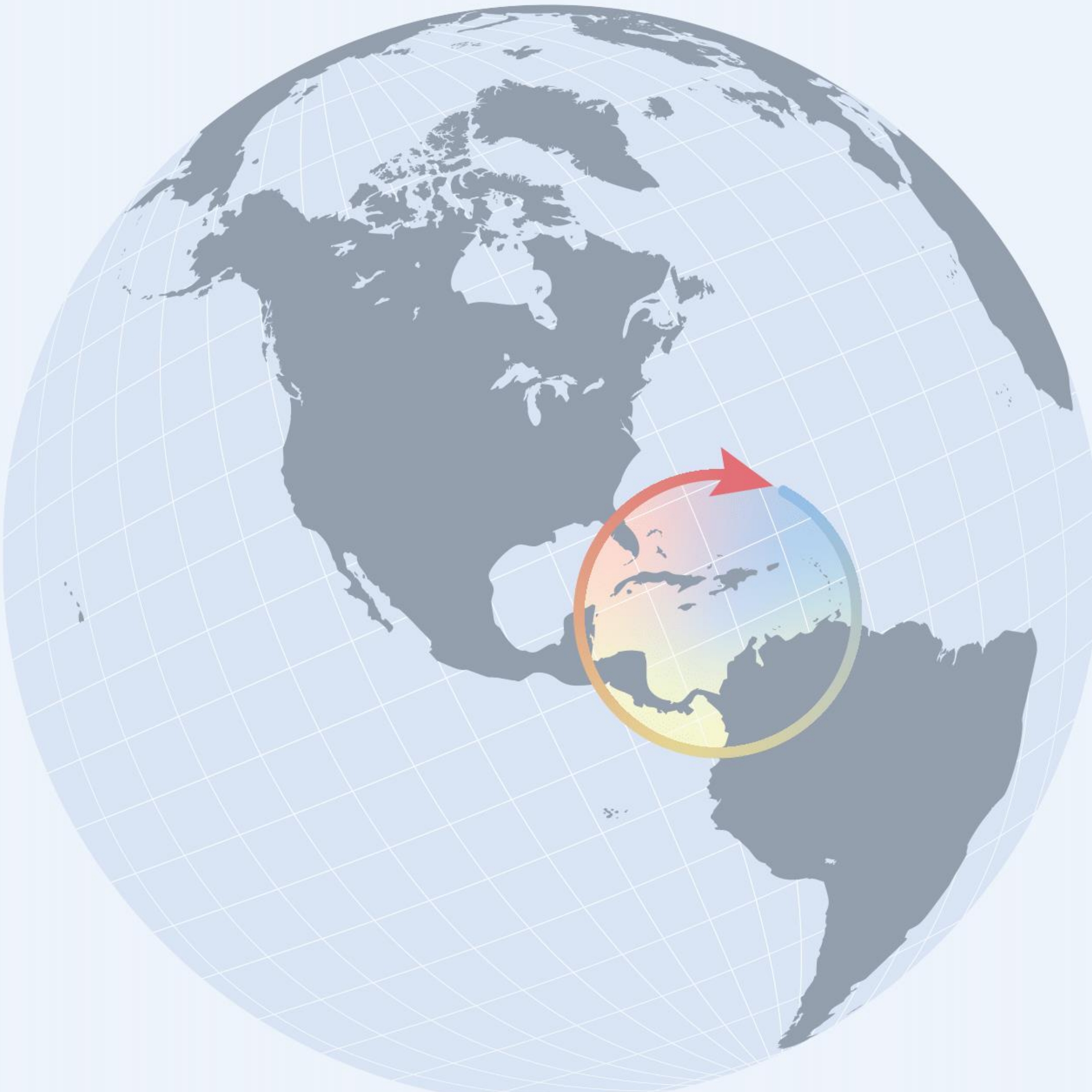
A BACKGROUND PAPER >> DISASTER RISK FINANCING

360° Resilience

A Guide to Prepare the Caribbean for a New Generation of Shocks



European Union
GFDRR
Global Facility for Disaster Reduction and Recovery
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Disaster Risk Financing in the Caribbean Region: Framework and Assessments

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Caribbean Disaster Risk Financing Conceptual Framework

The Caribbean Disaster Risk Financing (DRF) framework of the World Bank has been collaboratively designed in partnerships with Caribbean Governments and local and international stakeholders. The framework helps consolidate and preserve physical disaster risk reduction measures in countries by limiting the residual fiscal impacts, caused by the materialization of public contingent liabilities in the wake of a disaster.

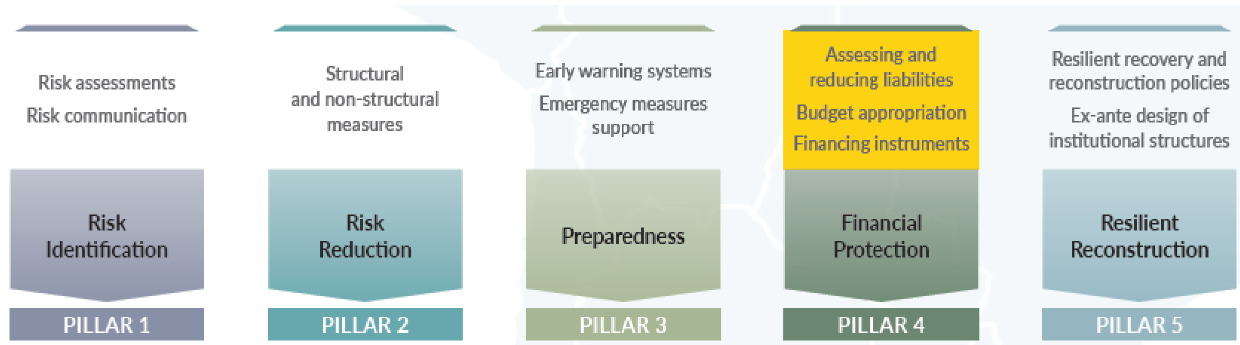

Figure 1 - Strategic Pillars of Disaster Risk Management.

This framework is built around best international practices and experiences drawn from other regions[1], but tailored to Caribbean countries' specific risk profiles, needs and country priorities. It has been constantly been adapted with respect to discussions with clients.

Most Caribbean countries show strong volatilities in their budgets in the wake of disasters or during a health crisis such as the current Covid-19 pandemic. Their economies have historically lacked enough diversity to be flexible in adapting to rapid and, in some cases, relatively frequent economic shocks caused by disasters. A comprehensive DRF strategy helps alleviate the financial burden of disaster response and, ultimately, ensure the sustainability of public finances.

To efficiently manage the public contingent liabilities, the theoretical framework can be synthetized by three inter-connected pillars:

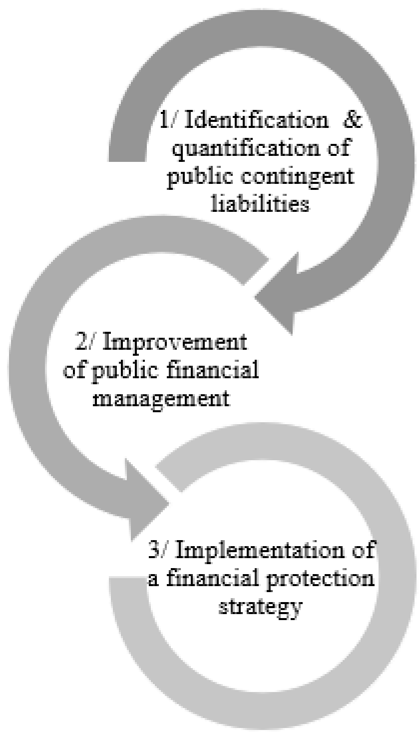

Figure 2 - The three-development axis of a DRF strategy.

- **Pillar 1. Identification & quantification of public contingent liabilities**

Adverse natural events can damage public infrastructure, generate spending for relief and recovery or require governmental assistance for the most affected. These response costs are public contingent liabilities, either direct or indirect. Impacts from these disaster and climate-related shocks can affect numerous sectors and essential services, rendering it

[1] Specifically, this work is underpinned by the theoretical applications and analytics of the World Bank's Disaster Risk Financing and Insurance Program: https://www.worldbank.org/en/programs/disaster-risk-financing-and-insurance-program

necessary for governments to streamline and mobilize resources for emergency response, recovery and reconstruction of public infrastructure and services. This fiscal responsibility, defined by the contingent liabilities, can pose a significant risk to the Government's financial sustainability.

A first step in devising a comprehensive DRF strategy is better understanding what is at risk on the side of the Government, and therefore quantifying the levels of contingent liabilities, direct and indirect, that public entities are facing. Appropriate risk information allows public decision makers to estimate or assess the costs of disasters and make informed investment decisions in allocating resources, choosing and strategically using financial instruments, and liaising with the private sector.

The Caribbean Disaster Risk Financing Framework has developed a Country Disaster Risk Profile that quantifies probabilistic hazard economic damages from hurricanes and earthquakes.[2] In many cases, this work is taken further to quantify economic damages from all hydrometeorological events, and the estimated portion of the Government's direct contingent liabilities, or other government priorities.

In addition to understanding probabilistic risk of hazards, governments must also have a clear picture of historical impacts and costs related to disasters. Often, the international community and governments focus damage and loss collection efforts on catastrophic events. Many Caribbean countries face less-intense localized hazards whose attritional impacts nonetheless disruptive to annual budgets. Having a centralized and well-maintained database of hazard impacts, as well as their corresponding economic impacts along with a way to track and report on post-disaster expenditures is key to understand the true costs of natural hazards.

Pillar 2. Improvement of public financial management

This Public Financial Management (PFM) pillar addresses the legal and administrative aspects of quickly and transparently disbursing liquidity to where it is needed most. Funds and financing mechanisms must be put in place and payments must be made at the required times. This step is vital for the financial strategy to effectively meet the Government's needs.

Refining the definitions of the public contingent liabilities is essential to inform on the identification and quantification process as explained under the first pillar. It helps decision makers sharpen their overview of fiscal risks of disasters, and decide on informed investments to best mitigate those risks. Furthermore, it brings clarity on the Government's responsibility in the aftermath of a disaster, allowing for better ex-ante planning of public support to affected population and impacted sectors, which results in increasing the national resiliency when a shock occurs.

Once contingent liabilities defined, efforts to secure funds quickly after a disaster are often hampered by the multiple administrative steps required for the responsible institution to appropriate resources and execute operations. In other cases, oversight of the use of public resources is suspended and the lack of transparency often results in losses when resources are already low. For example, a government may benefit from parametric insurance before realizing after a disaster that the payments would be treated as non-tax revenues and would therefore be transferred to the treasury, thus generating delays in the execution of emergency and recovery operations. Although often overlooked, this administrative dimension needs to be addressed with particular attention so that the risk financing strategy is effective.

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[2] For example, the Jamaica Country Disaster Risk Profile (CDRP): https://www.gfdrr.org/sites/default/files/Jamaica.pdf Other CDRPs can be found at GFDRR website.

Pillar 3. Implementation of a cost-effective financial protection strategy

A financial protection strategy aims at meeting Governments expenses in the wake of disasters, triggered by the materialization of public contingent liabilities, as evaluated under Pillar 1. However, not all financial resources are required at once, but three main phases can divide the liquidity requirements following the occurrence of a natural disaster: relief, recovery & reconstruction.

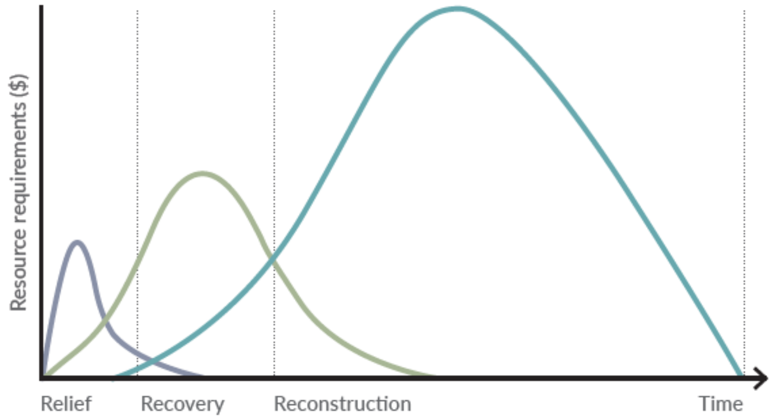


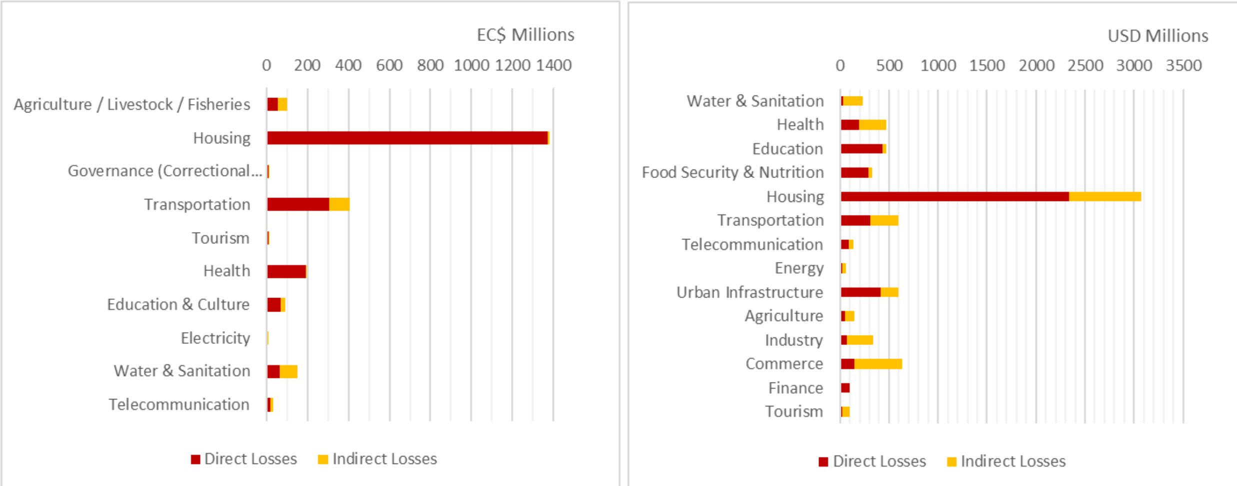
Figure 3 - Illustrative liquidity needs over time in the aftermath of a disaster.

Two dimensions come into play when elaborating a financial protection strategy: resources and time. Enough liquidities should be rendered available in the aftermath of a disaster, and in a timely manner, for each phase: relief (0-3 months)[3], recovery (3-6 months) and reconstruction (6 months – several years after the event).

Situation and engagement assessments in the Caribbean

Over the last 40 years disasters in the Caribbean have greatly increased, claiming lives, disrupting livelihoods and causing significant damages and economic losses. Direct damage alone due to natural hazards has averaged almost US$1.6 billion per year since 2000; and this average hides the fact that several years have seen particularly severe events – such as 2017 Hurricanes Irma and Maria, two category 5 hurricanes which swept across the region within a week, decimating several countries in their path. Devastating events like hurricane Ivan in 2004 in Grenada or the 2010 Earthquake in Haiti triggered extensive damages and losses, largely to the housing sector, as described in the figures below:

[3] Timeline are indicative for illustrative purposes. They vary for each natural disaster, and are theoretically more adapted to rapid onset disasters, like hurricanes, floods or earthquakes, to slow onset disasters like droughts.



Hurricane Ivan losses in Grenada (2004)	Earthquake losses in Haiti (2010)

Figure 4 - Sectorial Historical Impact of the 2004 Hurricane Ivan in Grenada and the 2010 Earthquake in Haiti. Sources: PDNA reports.

To mitigate the fiscal impacts from disasters, the World Bank Group has been supporting Caribbean Governments to further engage in the elaborations and implementations of DRF country-specific strategies. Below are presented brief descriptions of current situations in the Caribbean countries regarding their advancements on DRF.

Antigua and Barbuda

The Government of Antigua and Barbuda has no known explicit DRF strategy.

Regarding the financial protection strategy in Antigua and Barbuda:

Budget and reserve fund: The Constitution provides legal basis for a Contingencies Fund, and for "authorising the Minister for the time being responsible for finance, if satisfied that there has arisen an urgent and unforeseen need for expenditure for which no other provision exists, to make advances from that Fund to meet that need."

Contingent credit line: None.

CCRIF SPC: member of the CCRIF SPC with policies for tropical cyclone, excess rainfall, and earthquake.

Additional sources of ex-post financing:

- The CDB has been a significant financial partner with the Government providing resources in the form of loans, grants, and technical assistance.

- CDEMA's EAF
- IMF RCF

The 2006 Finance and Administration Act codifies the Government's policy relating to government financing. The act, however, does not make any clear provision for emergency and disasters. Section 30, which deals with emergency expenditure, special warrants, and the Contingencies Fund, may, however, be deemed to apply to emergencies. The Government maintains a Sinking Fund account at the ECCB that, although intended for debt reduction, could be drawn down in the event of a major disaster. As of September 2018, the Sinking Fund totaled EC$5 million.

Other comments: Participated in regional workshops organized by CARTAC to promote capacity to
  i. stress test the financial sector for disasters and pandemics, and
  ii. incorporate disasters into macro and debt sustainability frameworks.

Belize

In 2018, the WB and the Government of Belize (GoB) jointly published "Advancing Disaster Risk Finance in Belize," which outlined recommendations towards building a DRF strategy. The GoB has built its capacity in mainstreaming principles of DRF into government operations and planning particularly extending to the agriculture sector. The GoB has also benefitted from an IMF Climate Change policy assessment, which aligns financing recommendations with the WB.

Regarding the financial protection strategy in Belize:

Budget and reserve fund: There are no existing natural disaster fund or contingency budget mechanism that may address the low layers of risk. The government relies largely on post-disaster budget reallocation.

Contingent credit line:

- IADB - $10 million
- WB CERC - $1 million

CCRIF SPC: member of the CCRIF SPC with policies for tropical cyclone and excess rainfall.

Additional sources of ex-post financing:

- CDEMA's EAF
- IMF RCF

DRF supporting actions: GoB has improved tracking of post-disaster expenditures through the development of budget classifier. Strengthening financial protection for agriculture and adaptive social protection (in coordination with World Food Program) has also been a priority, resulting in improved data coordination and management in the agriculture sector towards the development of a sector-specific risk financing product. The WB DRFTA will also support increased coordination in DRF and capacity building activities.

Other comments: The GoB participated in regional workshops organized by CARTAC to promote capacity to stress test the financial sector for disasters and pandemics, and incorporate disasters into macro and debt sustainability frameworks. Tailored workshops delivered by the WB have also been requested by the Office of the Supervisor of Insurance to strengthen capacity of government staff related to insurance supervision and regulations.

Dominica[4]

The Government of the Commonwealth of Dominica (GoCD) currently has no explicit DRF strategy. However, the WB, in coordination with the GoCD as part of post-Hurricane Maria (2017) assessments, conducted analytics that comprises key components of a DRF strategy. The GoCD, with the support of the IMF, also developed a Disaster Resilience Strategy. As of 2021, the GoCD has requested support from the WB in developing a DRF strategy.

Regarding the financial protection strategy in Dominica:

Budget and reserve fund: The budget address, published 25th July 2018, mentions a Disaster Management and Preparedness Fund with a goal "to empower and facilitate the disaster committees at the community level. It will necessitate levels of community district and national coordination and cooperation that surpass anything we have achieved in the past".

However, there is no mention of such a fund in any other official document from the Government or further information about it. The Constitution mandates a Contingencies Fund in article 80.

Contingent credit line:

- WB CERC - $1 million

CCRIF SPC: member of the CCRIF SPC with policies for tropical cyclone, excess rainfall, and earthquake.

Additional sources of ex-post financing:

- CDB loans
- CDEMA's EAF
- IMF RCF
- Budget support from DFID
- European Investment Bank (EIB) loans

[4] The following information is based on publicly available sources.

DRF supporting actions: The WB DRFTA will also support increased coordination in DRF and capacity building activities.

The GoCD maintains a Sinking Fund at the Eastern Caribbean Bank that, although intended for debt reduction, could be drawn down in the event of a major disaster. An amount of EC$0.5 million is deposited into the account annually; the balance to date is EC$10.9 million (2018).

Other comments: Participated in regional workshops organized by CARTAC to promote capacity to
i. stress test the financial sector for disasters and pandemics, and
ii. incorporate disasters into macro and debt sustainability frameworks.

Grenada

The Government of Grenada (GoG) has developed a multi-layer National Strategy for DRF that received cabinet approval in 2019. This work has been benefitting from the WB DRFTA and the GoG will continue to engage with the WB to implement the strategy.

The GoG has also benefitted from an IMF Climate Change policy assessment, which aligns financing recommendations with the WB.

Regarding the financial protection strategy in Grenada:

Budget and reserve fund: Budgetary contingency for high frequency, low to medium severity events. Consistent with the PFM Act, each year the budget allocates a contingency provision equal to 2% of revenues. In 2018, this was US$ 5.5 million (0.5% of GDP). National Transformation Fund (NTF), Contingency Fund for medium frequency, medium to high severity events. The main objective is to provide financial resources to cover medium-sized natural disasters, where budget reserves might be insufficient and insurance relief is not available. The stock of the Contingency Fund at the end of 2018 was around US$ 14.8 million (1.2% of GDP).

Contingent credit line:

- Cat-DDO - $20 million
- WB CERC - $1 million

CCRIF SPC: member of the CCRIF SPC with policies for tropical cyclone, excess rainfall, earthquake. Also, part of Caribbean Oceans and Aquaculture Sustainability Facility (COAST).

Additional sources of ex-post financing:

- CDB loans
- CDEMA's EAF
- IMF RCF

DRF supporting actions: Governance mechanism surrounding use of budgetary reserves for disaster expenditures. Improved legislation surrounding the declaration of emergency and emergency powers acts that provide access to additional financing. Quantification of explicit contingent liabilities and development inventory of public assets. Support strengthening of Government-led Agriculture insurance program. The WB DRFTA will also support increased coordination in DRF and capacity building activities.

Other comments: The Sinking Fund at the ECCB, of around 1.2% of GDP, although intended for debt reduction, could be drawn down in the event of a major natural disaster. The hurricane clauses negotiated during the debt restructuring allow for a reduction in debt service for up to one year in the event of a qualifying natural disaster (i.e., losses more than US$ 15 million, 1.3% of GDP). The clause could release up to US$ 16.7 million in funds for a major natural disaster (the amounts would be smaller for smaller events, depending on the triggers). While the reduction in debt service helps with liquidity, the GoG still must incur interest costs as reduced debt servicing would be automatically re-profiled and capitalized. Participated in regional workshops organized by CARTAC to promote capacity to

i. stress test the financial sector for disasters and pandemics, and
ii. incorporate disasters into macro and debt sustainability frameworks.

Guyana[5]

The Government of Guyana has no known explicit DRF strategy.

Regarding the financial protection strategy in Guyana:

Budget and reserve fund: Article 221 of the Constitution of Guyana authorizes Parliament to create a Contingencies Fund to meet expenditure for which no provision exists. Section 41 of the Fiscal Management Accountability Act creates this Fund. The Constitution also provides that where expenditures are met through the Contingencies Fund that these should be accounted for via a Supplementary Provision.

Contingent credit line:

- WB CERC - $0.5 million

CCRIF SPC: Not a member.

Additional sources of ex-post financing:

- IABD
- CDB Loans
- CDEMA’s EAF
- Kingdom of the Netherlands

Other comments: Participated in regional workshops organized by CARTAC to promote capacity to

i. stress test the financial sector for disasters and pandemics, and
ii. incorporate disasters into macro and debt sustainability frameworks.

[5] The following information is based on publicly available sources.

Jamaica

The Government of Jamaica (GoJ) has developed a multi-layer National Strategy for Disaster Risk Financing and its framework received cabinet approval in 2019. This work has been benefitting from the WB DRFTA, and the GoJ will continue to engage with the WB to table the Strategy policy in parliament in 2021.

Regarding the financial protection strategy in Jamaica:

Budget and reserve fund: The floor (or lower limit) for the Contingency Fund has been increased from J$10 million to J$2 billion and an upper limit or ceiling introduced, in the amount of J$10 billion. The National Disaster Fund (NDF) is also part of the short-term financial responsiveness to natural disasters and the Office of Disaster Preparedness and Emergency Management (ODPEM) will continue to oversee these resources, in keeping with the law (Part IX, Sections 36 to 42 of the DRM Act) as well as report on the operations of the Fund. The investments of the NDF will be reviewed annually to ensure that they are still in keeping with the remit set out in the DRM Act of 2015.

The GoJ intends to create a National Reserve Fund (NRF) which will provide relief, recovery and reconstruction financing for national disasters, as defined in law. The NRF represents fiscal responsibility and sustainability in response to natural disasters, including the other principles underpinning this Policy. The NRF will be institutionalized in law, in the FAA, Fiscal Responsibility Framework, Part VII, Section 4 and have its attendant Schedule.

As part of the National Strategy for DRF, the Government will continue to make adjustments to the complementarity and uses of the Contingency Fund, the NDF and the NRF.

Contingent credit line:

- IADB - $285 million
- WB CERC - $10 million

CCRIF SPC: member of the CCRIF SPC with policies for tropical cyclone, excess rainfall, and earthquake.

Additional sources of ex-post financing:

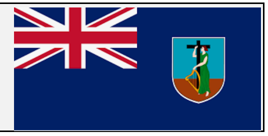
- CDB loans
- CDEMA's EAF
- IMF RCF

DRF supporting actions: Government Policy for Insuring Public Assets. Developed an operational plan for Post-Disaster expenditure processing, in line with international accounting standards. The GoJ has also focused on improving its public financial management of disaster planning and response and has approved policies to insure public assets better. The GoJ is exploring a Catastrophe Bond to provide liquidity for severe hazard impacts.

Other comments: Participated in regional workshops organized by CARTAC to promote capacity to

i. stress test the financial sector for disasters and pandemics, and

ii. incorporate disasters into macro and debt sustainability frameworks.

Montserrat	

The Government of Montserrat (GoM) has been benefitting from the WB Disaster Risk Financing Technical Assistance to help identify priorities for strengthening financial protection from disasters.

Regarding the financial protection strategy in Montserrat:

Budget and reserve fund: There is no existing natural disaster fund or contingency budget mechanism that may address the low layers of risk. The government relies largely on post-disaster budget reallocation from consolidated fund, and incidental support from DFID.

Contingent credit line: None.

CCRIF SPC: member of the CCRIF SPC with policies for tropical cyclone.

Additional sources of ex-post financing:

- UK’s Department for International Development (DFID) / Foreign and Commonwealth Office (FCO)
- CDB Loans
- CDEMA’s EAF

DRF supporting actions: The GoM is developing, jointly with the WB, an asset management plan for quantifying contingent liabilities and improved post-disaster damage and loss recording. The WB DRFTA will also support increased coordination in DRF and capacity building activities.

Other comments: The GoM may not hold reserves or take on loans outside of CDB or DFID relationships. Participated in regional workshops organized by CARTAC to promote capacity to

i. stress test the financial sector for disasters and pandemics, and
ii. incorporate disasters into macro and debt sustainability frameworks.

Saint Lucia	

The Government of Saint Lucia (GoSL) launched its National Disaster Risk Financing strategy in June 2020, which also has cabinet-level approval. This work has been benefitting from the WB Disaster Risk Financing Technical Assistance. The GoSL and the WB are working together to implement a multi-layered financial protection strategy. The GoSL has also benefitted from an IMF Climate Change policy assessment, which aligns financing recommendations with the WB.

Regarding the financial protection strategy in Saint Lucia:

Budget and reserve fund: Saint Lucia's DRM Policy Framework states that the Government will maintain a disaster-specific reserve fund to provide relief after the impact of a disaster. While the idea of the fund has been enacted into law in 2009, in reality such a fund was not operationalized nor capitalize. The 2018 PFM Bill proposed that the terms of the existing Contingency Fund be revised to include a minimum capitalization of 0.5% of revenues, with disbursements restricted to respond to unforeseen costs associated with disasters.

Contingency Fund not limited to use only for disaster-related funding, as of 2019 capitalized at US$1.8 million.

Contingent credit line:

- WB CERC - USD 1 million

CCRIF SPC: member of CCRIF SPC with policies for tropical cyclone, excess rainfall, earthquake, and part of COAST Facility.

Additional sources of ex-post financing:

- CDB loans
- CDEMA's EAF
- IMF RCF

DRF supporting actions: The GoSL is developing, jointly with the WB, measures to quantify contingent liabilities, develop DRF strategy for Adaptive Social Protection, and improved post-disaster damage and loss recording. The WB DRFTA will also support increased coordination in DRF and capacity building activities.

Other comments: Technical working group to develop an implementation plan for the National DRF Strategy. Improved budget codes to facilitate post-disaster expenditure tracking. Participated in regional workshops organized by CARTAC to promote capacity to

i. stress test the financial sector for disasters and pandemics, and
ii. incorporate disasters into macro and debt sustainability frameworks.

Saint Vincent and the Grenadines[6]

The Government of Saint Vincent and the Grenadines (GoSVG) has no known explicit DRF strategy. In 2020, the GoSVG has requested the DRF TA from the WB, towards the development of a national DRF strategy in 2021.

Regarding the financial protection strategy Saint Vincent and the Grenadines:

Budget and reserve fund: The Contingency Fund will enhance fiscal resilience by providing a financing source for the bottom layer of disaster risk. It is expected to accumulate EC$10 million dollars annually, or about 0.5% of GDP per annum. Total deposits should reach EC$30 million by 2020, subject to necessary

[6] The following information is based on publicly available sources.

disbursements. The Contingency Fund’s governance and operational framework, however, needs to be legislated.

Contingent credit line:

- Cat-DDO under development
- WB CERC - USD 1 million.

CCRIF SPC: member of CCRIF SPC with policies for tropical cyclone, excess rainfall, and earthquake.

Additional sources of ex-post financing:

- CDB loans
- CDEMA’s EAF
- IMF RCF

DRF supporting actions: The WB DRFTA will also support increased coordination in DRF and capacity building activities.

Other comments: Tourism levy to capitalize Contingency Fund. Participated in regional workshops organized by CARTAC to promote capacity to

i. stress test the financial sector for disasters and pandemics, and
ii. incorporate disasters into macro and debt sustainability frameworks.

Recommendations for advancing DRF in the Caribbean

Comprehensive DRF strategies advanced in the Caribbean countries are not solely comprised of instruments, rather, it is a framework developed around the backbone presented in the first section of the report, that requires the following elements in order to be successful:

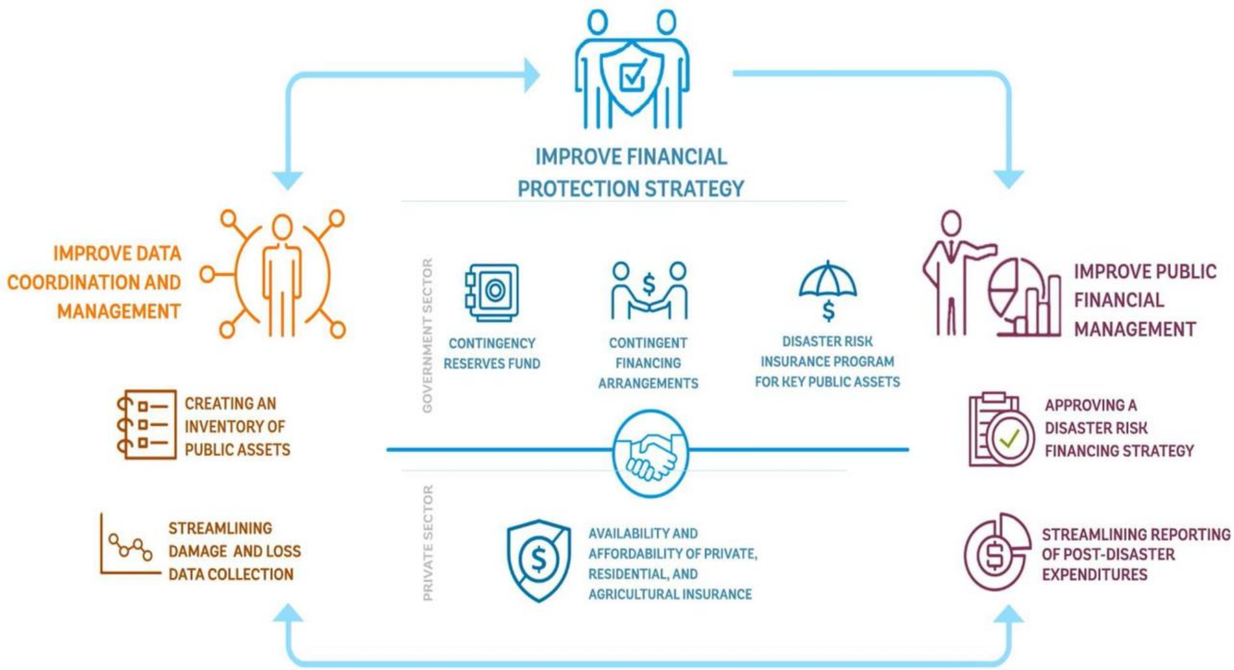


Figure 5 - Recommendations for advancing DRF in the Caribbean.

Operationally, the engagement has been led via technical assistance programs; the first phase of Caribbean Disaster Risk Financing Technical Assistance (DRFTA) Program presents recommendations in several countries in the Caribbean, namely Belize, Grenada, Jamaica, and Saint Lucia. The DRFTA Program benefited from funding support from the ACP-EU NDRR and the EU's Regional Resilience Building Facility program via the Global Facility for Disaster Reduction and Recovery (GFDRR), the UK's Department for International Development (DFID) and from the contributions in data and information from the Caribbean Catastrophe Risk Insurance Facility Segregated Portfolio Company (CCRIF SPC).

The recommendations and analyses from this activity have served as inputs to the International Monetary Fund's (IMF's) Climate Change Policy Assessment papers, national fiscal policy papers, and analytics for development of contingent lines of credit. More broadly, governments are using the reports for policy dialogues, facilitating their discussions with donors and multi-lateral agencies. The 2nd phase of the Caribbean DRFTA Program is building on the first phase to implement the recommendations. Some illustrations of advancements in several Caribbean countries as results of progress in the DRF engagements are mentioned below:

Among major advancements are:

- The Saint Lucia DRFTA[7] report has led to Saint Lucia being the first Caribbean country to approve, through Cabinet, a National Disaster Risk Financing Strategy.

[7] Advancing Disaster Risk Finance in Saint Lucia: https://www.gfdrr.org/en/publication/advancing-disaster-risk-finance-saint-lucia

- The Jamaica DRFTA[8] has led to discussions on finding solutions to cost effectively insure public assets through collaboration with the private sector, and the approval by Cabinet of a National Framework for a Disaster Risk Financing Strategy
- The Grenada DFRTA[9] has led the formulation of a country-specific comprehensive disaster risk finance strategy, based on the assessment of the legislative, financial management, fiscal, and insurance market environment.
- The Belize DRFTA has led to increased capacity of the Office of the Supervisor of Insurance, by arranging bespoke training sessions, supporting staff in accessing international opportunities, and increasing access to agriculture sector data for improved financial protection strategies
- Increased contingent reserves in Jamaica and St Lucia
- Jamaica exploring feasibility of Cat Bond,
- Grenada added hazard risk ratings to PSIP and adopted a line of contingent credit, the WB Catastrophe Deferred Drawdown Option
- St Lucia formed a technical working group to mainstream DRF
- Belize budget classifiers to better track and report on post-disaster spending
- All maintained or increased CCRIF Coverage for excess rainfall, tropical cyclone and earthquake policies
- Increased communication between governments and their domestic insurance industry
- Contributed to better understanding climate and disaster risks in IMF Article IV consultations

Due to its initial success in Belize, Grenada, Jamaica and Saint Lucia, and regional demand to engage with more of the Caribbean Community (CARICOM), over the past few years the DRFTA has been able to expand geographically to remaining CARICOM and Caribbean Overseas Countries and Territories (OCTs) on a demand driven basis. To further advance and refine the DRF strategy of the country, financial protection strategies at the sector level can be devised to supplement the wider sovereign disaster risk financing efforts. Adaptive social protection is one such rising example in the Caribbean of sectorial initiatives that each require tailored financial protection strategies to adequately operationalize contingent response plans. Other sectors, especially productive sectors, like agriculture, or with assets critical to public well-being, such as infrastructure, can explore tailored instruments and approaches.

Barriers for implementing DRF in the Caribbean

Several barriers for implementing DRF in the Caribbean has been identified and the World Bank teams have been coordinating to overcome them jointly with the Governments and other relevant stakeholders.

A first barrier concerns the low availability and systemic collection of data. Thus, pinpointing and evaluating contingent liabilities is not a trivial exercise in the Caribbean. Country disaster risk profiles, merging historical data with probabilistic approaches, were created to provide a strong quantitative baseline for discussion and upon which financial protection strategies can be devised. To reinforce this quantification exercise, streamlining damage and loss data collections and creating inventories of public assets are recommendations that the World Bank teams have presented to counterparts.

Regarding financial resources availability, the Caribbean region is characterized by high levels of debt and tight fiscal space, requiring a strong optimization of the few resources that can be accessed in the aftermath

[8] Advancing Disaster Risk Finance in Jamaica: https://www.gfdrr.org/en/publication/advancing-disaster-risk-finance-jamaica
[9] Advancing Disaster Risk Finance in Grenada: https://www.gfdrr.org/en/publication/advancing-disaster-risk-finance-grenada

of disasters. The financial impacts of COVID-19 due to the drop in regional tourism have exacerbated further the need to prioritize and use efficiently limited fiscal resources. However, it has been observed that a technical understanding of DRF instruments can be strengthened to better coordinate on the financial protection strategy. Furthermore, on the private side, the non-life insurance market has a relatively low penetration in the region, and the population tends to see the Governments as "insurers of last resort". This creates large implicit contingent liabilities on the public side. Integrating these contingent liabilities in the national strategy, through financing for adaptive social protection schemes or risk transfer instruments such as the Livelihood Protection Policy[10] offered by the CCRIF SPC, allows to ex-ante plan to meet expenses due to their materializations. More details on instruments' specifics are provided in annex.

Finally, knowledge management and institutional continuity has also been an operational barrier identified in DRF engagements in the Caribbean. Frequent changes in senior government officials and decision-makers add to the complexity of long-term engagement. Further, government ministries often work in silos and are reluctant to share data and information. Regional workshops and continuous engagements in countries for knowledge sharing are an important pillar of DRF technical assistance to overcome this barrier.

DRF advancement indicators and countries scoring

Several indicators for characterizing the countries' degrees of advancement on the implementation of a DRF strategy have been derived. One must also note the importance of the countries continuous engagements and discussions with the teams that might not be well reflected in the below-described indicators.

1- DRF Assessment

The formal undertaking of a gap analysis related to DRF is a crucial step in developing a National DRF Strategy. Whether done internally or through regional or international partners, this assessment would provide key insights as to where improvements need to be made in structuring instruments, strengthening PFM, or supporting the domestic insurance sector.

Indicator: Assessment of gaps and strengths related to DRF (Y/N)

2- National DRF Strategy

The establishment of a national DRF strategy is an important step for countries to take, as it lays out the different responsibilities of various entities and their respective tasks in the aftermath of a disaster, and reinforce in-country capacities to pave the way for the operational implementation of a financial protection strategy. Approving a DRF strategy creates the consortium needed between all stakeholders to join and align efforts to maximize fiscal risk mitigation.

Indicator: institutional adoption of a national DRF strategy (Y/N).

3- Layered Financial Instruments

Composing a financial protection strategy consists in adopting different ex-ante DRF instruments and cost-effectively combine them with respect to the country risk profiles. Different indicators are designed to reflect the degrees of adoption of the instruments as part of the overall financial protection strategy in place in country.

[10] https://www.ccrif.org/projects/crai/livelihood-protection-policy-lpp

Instrument / Indicator	**Low**	**Medium**	**Adequate**
Reserve Fund	▪ Legal definition ▪ No recurrent capitalization	▪ Legal definition ▪ Recurrent capitalization	▪ Legal definition ▪ Adequate recurrent capitalization ▪ Disbursement rules
Budget	▪ No or vague guidelines on emergency budget reallocation	▪ Guidelines on emergency budget reallocation clear and used minimally	▪ Loss-informed and minimal strategic use of budget reallocation
Contingent Credit (CC)	▪ Depleted or no CC arrangement	▪ CC in place ▪ Low levels of CC	▪ CC in place ▪ Sufficient levels of CC
Parametric Insurance	▪ Few perils covered ▪ Low coverage	▪ Several perils covered ▪ Significant coverage	▪ Several perils covered ▪ Significant coverage ▪ Coverages optimized with respect to retention capacities
Traditional Insurance	▪ Low market penetration ▪ Few products available	▪ Average market penetration ▪ Few products available	▪ Significant market penetration ▪ Multiple products available
Contingent Debt Instruments	▪ No Contingent Debt Instrument	▪ Instrument in place, but parameters not strategically applied	▪ Instrument in place and part of national DRF strategy
Ex-post Financial Assistance	▪ Few arrangements	▪ Several regional arrangements	▪ Several regional arrangements ▪ Active contribution to regional arrangements
Alternative Financial Products [11]	▪ Under-development	▪ Operational ▪ Limited geographical extent	▪ Operational ▪ Large geographical extent

[11] This category is broad and could capture another type of Alternative Risk Transfer Instrument like a bond, or sector-specific instruments that complement adaptive social protection (ASP) or agriculture, for example

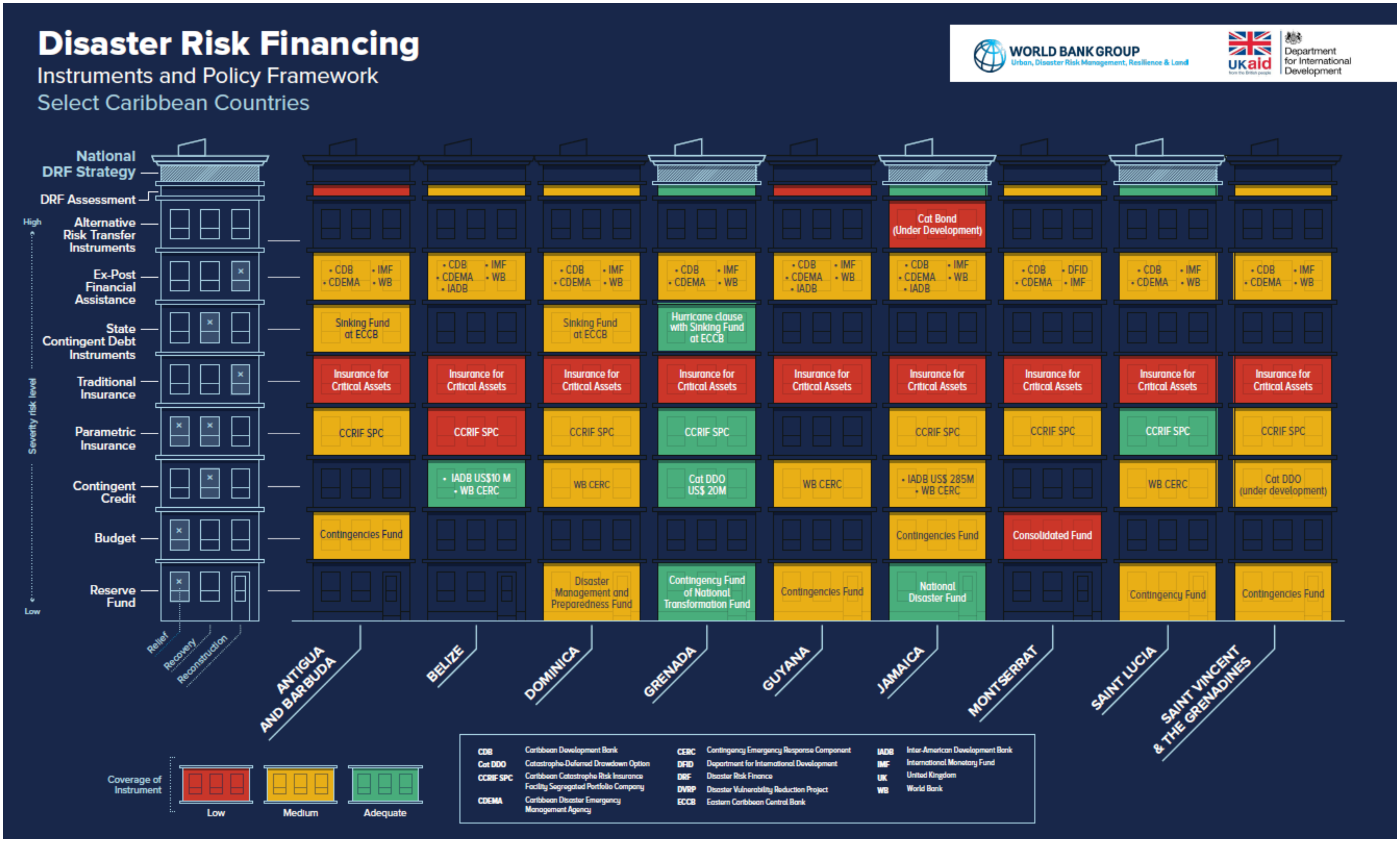


Figure 6 - Disaster Risk Financing Instruments and Policy Framework in Selected Caribbean Countries.

Annex 1 – Combining ex-ante instruments to devise a financial protection strategy

From a macroeconomic point of view, the various instruments forming the strategy play the role of automatic stabilizers and help manage budgetary volatility caused by disasters, which is crucial for the Caribbean countries.

Resorting to ex-ante disaster risk financing instruments for meeting liquidity needs in the relief phase is crucial, as time is key in the reactivity of the Government right after an adverse event. Not being financially in capacity to adequately respond quickly in the relief phase can exacerbate a disaster impact and its economic toll on the country; after Hurricane Matthew made landfall in 2016 in Haiti, a health situation arose partly due to the deterioration of the water & sanitation systems, cattle carcasses decomposing that were not collected and burned, which increased the overall impact on the population.

Different ex-ante disaster risk financing instrument are available to countries, ranging from risk-retention instruments like budget reserves or contingent credit lines, to risk-transfer instruments like insurances. Each instrument present specific characteristics in terms of fixed and opportunity costs, rapidity to access liquidities, and levels of liquidities the instruments can bring to a Government if triggered / accessed. Indicative characteristics of some well-known instruments or mechanisms in the Caribbean region are summarized in the table below.

Instrument	Type of Instrument	Source of the funds	Amount	Fixed costs[12]	Opportunity costs[13]	Time for accessing the liquidities
Efficient for the relief phase						
Sovereign reserves capitalized in a fund	Retention	Sovereign	Low	Negligible	Negligible	Little – for all phases
Development Policy Credit with a Catastrophe Drawdown Option	Retention	World Bank	Medium / High	Small	Negligible	Little – for all phases

[12] Fixed costs comprise of front-end fees, standby fees or interests upon disbursements for contingent credit lines, insurance premiums, and interests on new sovereign debts. 'Negligible' relates only to administrative costs (for example for processing budget reallocations), 'small' to ex-ante fees / interests agreed as part of contingent arrangements, that are usually lower than insurance premiums ('High'). 'Very High' relates to interests on new sovereign debt after a disaster hit, since they tend to be unfavorable.
[13] Opportunity costs represent the loss of potential gain from other investments / projects when liquidities are used or re-directed for emergency, rehabilitation or reconstruction in the wake of a disaster. 'Negligible' relates to liquidities that are not re-allocated from other investments / projects, contrary to 'high'.

Sovereign insurance from CCRIF SPC	Transfer	CCRIF SPC	Depending on the event severity and coverages	Small	High	Little – for all phases
More adapted to recovery and reconstruction phases						
Budget reallocation	Retention	Sovereign	Variable	Negligible	High	Medium – for rehabilitation and reconstruction phases mainly
Ex-post new sovereign debt	Retention	Sovereign	Unknown in advance	Very High	Negligible	High – for reconstruction phase only

Table 1 - Major DRF instruments characteristics.

Considering the results of the quantification of the public contingent liabilities and the different characteristics of the disaster risk financing instruments, a financial protection strategy can be devised as a mix of instruments to match as possible the potential impacts and liquidity needs that can arise. An optimization process – called cost-benefit analysis – highlights the necessity to adopt a risk layering approach to maximize the best use of instruments while minimizing the overall associated costs. No single financial instrument can meet funding needs for all risks, but rather a combination targeting different levels of impacts.