



The main street of Kralendijk, Bonaire
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Disaster Risk Financing in Caribbean Overseas Countries and Territories:

Building financial resilience to natural hazards

I. Background

Geographical Context

The Overseas Countries and Territories (OCTs) of the Caribbean, a group of islands and territories under the jurisdiction of France, the Netherlands, or the United Kingdom, are among the most exposed and vulnerable islands to natural hazards. Their location leaves them particularly vulnerable to hurricanes and tropical storms, while the majority are also in proximity to the boundary zone of the Caribbean and North American tectonic plates and face added geotechnical risks, such as earthquakes, volcanic eruptions and tsunamis. Climate-related risks are growing as climate change increases the frequency and destructiveness of weather events. Furthermore, OCTs are susceptible to other hazards like health crises, as was recently demonstrated by the outbreak and impact of the COVID-19 pandemic.

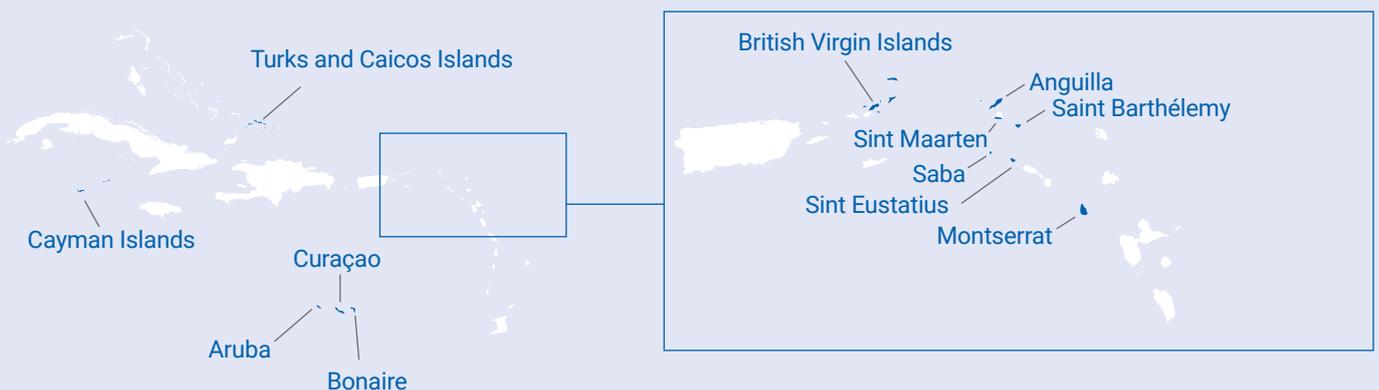
OCTs, like any small island state, have limited land area and limited resources, which means they have a smaller margin for error when coping with disasters. For example, if a hurricane or tsunami occurs, it can quickly overwhelm the limited infrastructure and resources available, making it difficult for inhabitants to recover. In addition, OCT

economies depend on tourism and agriculture as their primary sources of income. As a result, these industries can be severely impacted when a disaster strikes, causing economic and social instability.

Therefore, disaster risks pose a persistent threat to the long-term economic stability and sustainable development of OCTs. Disaster risk finance (DRF) instruments and strategies can help ensure that these governments and their populations are financially protected in the event of a disaster, empowering them to reduce risks and rapidly recover.

In support of this, in 2019, the Global Facility for Disaster Reduction and Recovery (GFDRR), the World Bank, and the European Union launched the *Technical Assistance Program for Disaster Risk Financing and Insurance in Caribbean Overseas Countries and Territories*. The Technical Assistance Program was part of the EU-funded [Caribbean OCTs Resilience, Sustainable Energy and Marine Biodiversity Program \(RESEMBID\)](#), implemented by Expertise France, the World Bank, and GFDRR. The Technical Assistance Program closed in June 2023.

Beneficiary Overseas Countries and Territories





Hydroponic farming systems in Curaçao.
Credits: World Bank

Development Considerations

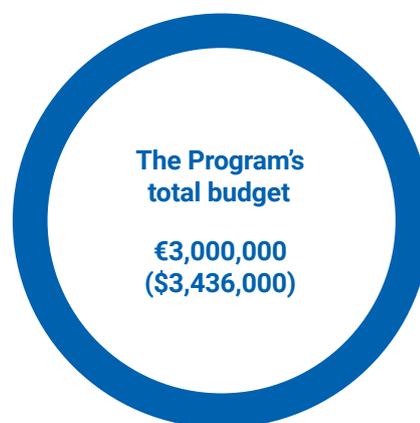
Caribbean OCTs are not homogenous entities and have varied political and economic relationships with their respective European national governments. This status can weigh on their ability to obtain international financing for risk reduction investments, disaster prevention, and relief activities and impose barriers on their capital expenditure through financial or fiscal rules.

Concerning the OCTs that benefitted from the Program:

- **Bonaire, Saba, and Sint Eustatius** are recognized as special municipalities within the European Netherlands. This means they cannot access regular market money loans and must follow regulations regarding budget requirements and their financial affairs.
- **Aruba, Curaçao, and Sint Maarten** are constituent countries within the Kingdom of the Netherlands and enjoy greater financial liberty but are still monitored by a council of financial supervision. The council oversees the adoption and execution of balanced budgets and control loans.
- The British Overseas Territories, **Anguilla, British Virgin Islands, Cayman Islands, and Turks and Caicos** have public financial management systems partly independent of the United Kingdom but they are still restricted in taking loans through budget requirements. **Montserrat** requires the approval of the government of the United Kingdom to take on loans.
- **Saint Barthélemy**, as an overseas collectivity of France, cannot receive external financing.

At the same time, these OCTs are typically categorized as middle-to-high-income countries, which means they are largely ineligible for official development assistance that could otherwise support their disaster risk management efforts.

This varied portrait means that significant post disaster financing gaps exist in Caribbean OCTs. Following past extreme events, they have relied on ad-hoc and ex-post support from France, the Netherlands, the UK, the EU, and the international community. This approach introduces critical delays in disaster response efforts and limits the capabilities of local governments to prepare for and manage risks – a situation that this technical assistance program has worked hard to improve.



Objective

The objective of this Program was to enhance the long-term resilience and adaptation capacity of OCTs to extreme and recurrent natural hazards to the benefit of the most vulnerable. Specifically, this was accomplished by supporting the development of innovative DRF options; capacity building within OCTs on the use of existing risk transfer mechanisms, like the Caribbean Catastrophe Risk Insurance Facility Segregated Portfolio Company (CCRIF SPC); and working with OCTs to promote informed decision-making on DRF.

The Program effectively responded to the COVID-19 crisis by providing expert support and training to OCT Governments, reinforcing their national capacities to better manage the COVID-19 health emergency while furthering the Program's original objective of strengthening financial protection. The Program team maintained engagement with OCTs that expressed interest in COVID-19-related assistance and continued their work with OCTs that initially requested DRF support, demonstrating the Program's continued commitment to promoting financial resilience.

Phased Implementation

ACTIVITIES SUPPORTED

Phase 1: Diagnostics (all participating OCTs)

Phase 2: Targeted Support (on demand)



Historical database of losses, analysis of data coordination, hazard probabilistic risk profile



Analysis of Public Financial Management related to disasters

Activities have been concluded and the Program closed in June 2023



Evaluation of existing instruments, financing gaps, and assessment of domestic insurance market

Scope of activities considered expanded to include COVID-19 response support in April 2020



Knowledge exchange & capacity building

In the first phase, activities focused on carrying out DRF gap analyses, including financial and policy considerations, assessing the status of and demand for risk financing instruments, and identifying the financial exposure or

contingent liability to geophysical and climate-related disasters. The second phase then focused on the stated needs of specific countries and the targeted capacity-building efforts linked to them.

II. Achievements

Measured against the overarching objectives to enhance resilience and adaptation capacity and improve financial resilience and availability of DRF tools, the Technical Assistance Program for OCTs saw notable success.

Outputs in figures

12

Disaster Risk Finance (DRF) diagnostic reviews delivered

5

Country Disaster Risk Profiles developed for hurricane and earthquake risk
(Aruba, Bonaire, Montserrat, Sint Eustatius, Sint Maarten)

4

Building exposure estimations produced
(Montserrat, Bonaire, Sint Eustatius, Cayman Islands)

3

OCT participants in the University of the West Indies DRF training
(Sint Maarten, Montserrat, Anguilla)

2

Rapid Assessments on food security
(Aruba, Curaçao)

1

Socio-Economic Assessment: COVID-19 Post Disaster Needs Assessment (PDNA) in Bonaire

1

Risk-Based Asset Management System (RBAMS) in Anguilla

1

National statistics system for improving reporting on post-disaster and post-COVID-19 losses in Anguilla

1

Gap analysis, "Advancing Disaster Risk Finance in Sint Maarten"



Visit to the new hospital facilities where the WB team discussed construction techniques and the supply of materials with the project manager Anguilla.
Credits: World Bank

DRF Diagnostics

Phase one of the Program prioritized the production of diagnostic reports on each of the 12 OCTs' existing DRF capacities. These reports made use of publicly available information to make initial assessments of the financial preparedness of OCTs for extreme events, including an evaluation of the national public financial management context and legislative frameworks, the depth of the domestic insurance market to address public and private sector risk, and the ex-post financial protection available to the private sector and vulnerable communities.

In addition to providing an entry point for individual OCT dialogues, this exercise also informed a number of conclusions on DRF at the regional level, useful to the work of the Program but also to other World Bank teams or partners operating in the Caribbean.

First, overall disaster risk reduction was found to be already well-legislated in OCTs. However, the typical focus on post-disaster response operations left open questions concerning how responsible departments identify and quantify risks and how response efforts, crisis plans, and roadmaps are financed.

Second, the domestic non-life insurance industry was deemed to have low penetration rates and considerable room for expansion. This is significant as growth would offset the otherwise implicit contingent liability of the government to act as the insurer of last resort and offer vulnerable populations and sectors, like agriculture and fisheries, a broader range of specific protection mechanisms.

Third, no OCT has access to a line of contingent credit to draw on in the wake of a disaster, or a specific agreement on timely, no strings attached funding from European partners. In addition, some OCTs cannot hold fiscal reserves of their own. This particular situation needs to be addressed via innovative financial instruments.

Finally, the diagnostic reviews reported inconsistent records of post-disaster damages, losses, and expenditures; critically, partial records limit a government's ability to quantify contingent liabilities and optimize its financial protection strategies.

The 12 DRF diagnostics were discussed and shared with the respective OCT counterparts.

Achievements at Local Level

Following the DRF diagnostics, the Technical Assistance Program used country dialogues to help integrate DRF principles into each OCT's financial management processes based on the specific demands of local governments. Understandably, as this phase coincided with the outbreak and response to COVID-19, many projects addressed different impacts of the pandemic.

Anguilla actively engaged in the Program throughout its duration, which resulted in the delivery of two reports that provided considerable support to the government's DRF knowledge base. Published in June 2022, *"Development of Disaster-Related Statistics Capacity in the Government of Anguilla"* provided detailed technical guidance on improving the capability to assess the macroeconomic, fiscal, and socioeconomic impacts of disasters. Furthermore, the activities during this task were based on the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) Disaster-Related

Statistics Framework (DRSF), which outlines a generic framework for developing disaster-related statistics. This framework was relatively new, first published in 2018, and had not been applied in a Caribbean country until the assessment in Anguilla. This work will improve how statistics are obtained for disaster management and encourage smoother interdepartmental cooperation and data exchange.

Similarly, *"Developing Asset Management Capacity for Buildings Operated by the Government of Anguilla"*, finalized in January 2023, informed the government's use of risk-based budgeting and maintenance planning for public buildings. This was accomplished by comprehensive guidance within the report concerning approaches to conditional assessment and building evaluation and the development of a set of key performance indicators. The ultimate result should be the improved resilience of public buildings across Anguilla for years to come.



Building inspection of a government building extension (Ministry of Infrastructure facilities) using the Asset Management app developed by the Program. Anguilla. Credits: World Bank

Bonaire sought technical assistance from the Program, particularly to inform its recovery from the pandemic. The first example was the request for a Post-Disaster Needs Assessment (PDNA), which evaluated the macroeconomic impact of COVID-19 on critical parts of the economy, especially tourism but also industry, agriculture, logistics, and disaster risk financing measures. Informed by the findings of the PDNA, the Island Council of Bonaire petitioned the Dutch government to raise its subsistence level to counter the regression in livelihoods following COVID-19. The report was finalized in June 2021.

A second report, “*Sustainable Urban Development Carrying Capacity Study*” was delivered to the government of Bonaire in May 2023. Looking beyond Bonaire’s immediate economic conditions, the paper comprehensively assessed the carrying capacity to develop tourism and manage foreign direct investments as a function of the island’s environment, economic activity, local culture, land use, social structure, infrastructure, and climate resilience. This will be an essential resource that informs the government’s strategic decision-making around the sustainable development of the tourism economy.

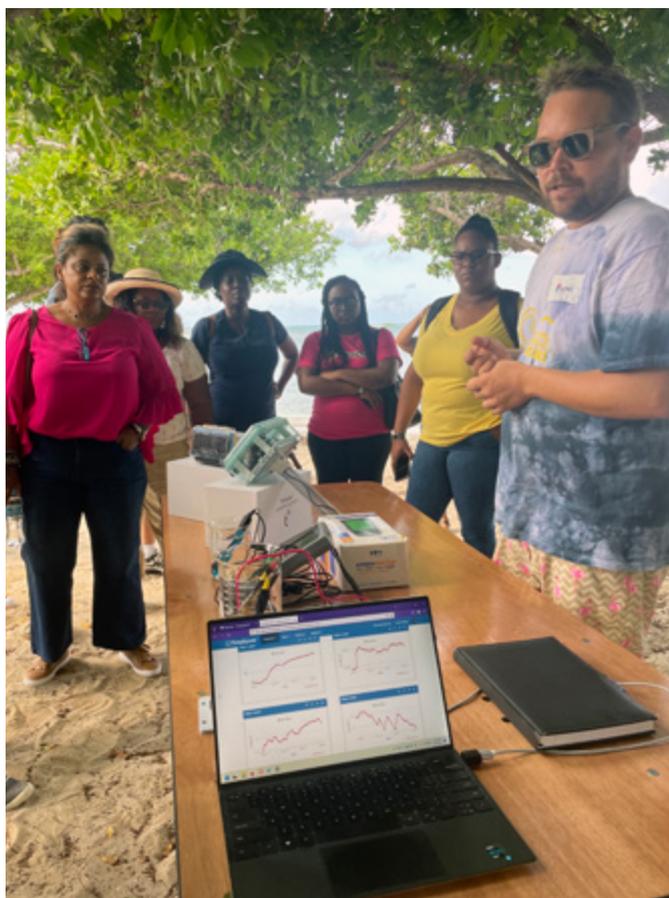
Like other Caribbean OCTs, **Aruba** and **Curaçao** suffered an almost total collapse of their tourism sector in the wake of COVID-19 because of travel and transport restrictions.

These conditions also put the countries’ agricultural sectors and food supply chains under considerable strain, concerns that prompted them to reach out to the technical assistance program and request support.

“*Building Aruba’s Food Security During the COVID-19 Pandemic and Beyond*” report, published in 2020, offered a number of strategies to strengthen the resilience of Aruba’s food supply chain and directly informed the Department of Economic Affairs and the Department for Agriculture, Livestock and Fisheries’s strategic planning.

Meanwhile, the “*Curaçao Food Security Assessment and Proposed Interventions*” report, finalized in May 2023, shared an analysis of the availability, utilization, and stability of the island’s food supply, establishing a long-term strategy for food security.

Sint Maarten requested support from the Program to expand its financial protection and build its capacity to make risk-informed decisions about financial planning, asset management and retrofitting. To this end, a detailed study was launched. The result, “*Advancing Disaster Risk Finance in Sint Maarten*,” provided a gap analysis of the country’s existing DRF capacities and instruments and delivered a series of recommendations to strengthen its financial protection.



Field visit to learn from Surfside Science Initiative. Aruba.
Credits: World Bank



Urban farming in Curaçao.
Credits: World Bank



Town scene of Curaçao.
Credits: World Bank

Achievements at Regional Level

Caribbean Catastrophe Risk Insurance Facility (CCRIF)-implemented activities

Under the Technical Assistance Program, CCRIF SPC implemented a grant to support capacity building in OCTs to better understand and use CCRIF's products and services as part of their own TA program. In terms of enhancing long-term resilience and adaptation capacity, through membership of CCRIF, Anguilla and Sint Maarten have increased their financial protection against natural hazards. These same countries, and Montserrat, also extensively used World Bank and CCRIF disaster risk profiles to inform their sustainable development decisions—a clear example of OCTs using newly available DRF tools to enhance their long-term financial resilience.

This close cooperation between CCRIF and Caribbean OCTs during the Program was on display at a CCRIF-hosted workshop on Comprehensive Disaster Risk Management and Financial Resilience for OCTs in November 2022 in Aruba. This was an opportunity for DRF practitioners to share their experiences, challenges, and results in strengthening DRF fundamentals. The workshop was attended by 65 participants, included representatives from 11 OCTs, and was the setting for Aruba and Bonaire to begin their conversations around joining CCRIF and deepening their access to financial protection in the long term.

What is the Caribbean Catastrophe Risk Insurance Facility (CCRIF)?

CCRIF is a multi-country parametric risk pooling facility that allows participating countries to purchase insurance coverage to finance immediate post-disaster recovery. With 23 members from the Caribbean and Central America, it has played a critical role in boosting financial resilience to natural hazards, delivering pay-outs of just over \$260 million since its inception in 2007.

Yet, at the start of the Program, only a few of the OCTs covered by this Program were members of CCRIF, meaning a priority exercise was the delivery of training on how other OCTs could take advantage of CCRIF products and services to develop their DRF options.

Additional Capacity Building on Disaster Risk Finance

The Technical Assistance Program also supported a 6-week virtual certificate course on [Disaster Risk Financing & Analytics](#), which started on September 30, 2021, and was piloted by the University of the West Indies (UWI) and the World Bank Caribbean Disaster Risk Management (DRM) team.

This was the result of several years of collaboration with UWI, with the Understanding Risk Caribbean Conference in 2019 catalyzing the response to demands for more region-led and institutionalized capacity-building opportunities in DRF for governments and practitioners. At the time, a series of disasters in 2021 – the volcanic eruption in Saint Vincent and the Grenadines, Hurricane Elsa across the Caribbean region, and an earthquake in Haiti – had further increased the demand for this course, which was offered free of charge to World Bank focal points from both OCTs and sovereign governments.

The course was co-financed by the TA Program for DRFI in Caribbean OCTs and the [EU-funded Caribbean Regional Resilience Building Facility](#). The course highlighted the applicability of DRF and associated analytics to line ministries outside of finance ministries and the importance of sector-specific approaches to DRF, risk modeling, and public financial management to disasters, as well as other topics. It is intended to repeat the certificate annually with UWI and recognized experts and potentially evolve it into a full course.

Development of Disaster Risk Financing Learning Tool

A virtual version of the [Hurricane Hurry Simulation Game](#), a learning tool on DRF, was finalized with co-financing from the Program. The game conveys the key concepts of disaster risk financing to government officials and simulates decision-making in complex environments – after a hurricane hits, needs are great, resources are limited, and the pressure is on to act quickly. A ‘Train the Trainer’ video was developed for easier virtual facilitation. The video was part of an effort to widen the audience of players and facilitators for continued use throughout the Caribbean OCTs and beyond.



Hurricane Hurry Simulation Game being played during the CCRIF-hosted workshop on Comprehensive Disaster Risk Management and Financial Resilience for OCTs in November 2022 in Aruba. Credits: World Bank.

III. Looking Ahead

Over four years, the Technical Assistance Program for Disaster Risk Financing and Insurance in Caribbean Overseas Countries and Territories played a key role in informing the discussions around DRF in Caribbean OCTs and identified recommendations and capacity-building strategies to enhance and expand these instruments based on each country's particular needs. In addition, technical experts provided assistance and capacity building to the Caribbean OCTs to help them develop and implement effective DRF mechanisms to manage and mitigate the financial risks associated with natural hazards.

In doing so, GFDRR, the World Bank, and the European Union have contributed to the accomplishments of the broader RESEMBID program, which aims to increase the resilience of Caribbean OCTs to extreme and recurrent natural events.

The COVID-19 pandemic introduced unexpected and overwhelming challenges for OCTs, but challenges that revealed the responsive nature of the Program and which underlined the critical importance of having mature DRF measures in place. As Caribbean OCTs now look beyond that crisis and focus on building resilience in their infrastructure, tourism industries, and food supply chains, this Program can be said to have laid firm foundations for their sustainable development and long-term financial stability.

Given the heightened demand created by the Program, there is a need to continue providing technical assistance and capacity-building support to the Caribbean OCTs to help them develop and implement effective DRF mechanisms. This can include training on risk assessment, financial modelling, and insurance solutions and supporting the development of national disaster risk financing strategies and policies.

Another area of attention is strengthening the institutional capacity of governments, and other stakeholders in Caribbean OCTs, to manage and mitigate the financial risks associated with natural hazards. This can include supporting the development of regulatory frameworks and legal structures that facilitate the use of DRF mechanisms and promoting the use of risk transfer instruments such as insurance and catastrophe bonds. This could also include the development of international partnerships to enhance DRF in Caribbean OCTs, including working with private sector stakeholders such as insurers and reinsurers to develop new products and services, as well as partnering with development organizations and donor agencies to mobilize funding and resources for DRF initiatives.

Efforts could support the building of resilience by promoting sustainable development practices and investing in critical infrastructure, connectivity, and social safety nets. This could include supporting efforts to reduce greenhouse gas emissions and mitigate the impacts of climate change and environmental degradation, as well as investing in disaster preparedness and response systems and promoting community-based approaches to DRM.

By pursuing these strategies and building on the accomplishments of its existing initiatives, the RESEMBID program can continue to play an important role in enhancing DRF and building resilience in the Caribbean region.



Philipsburg, Sint Maarten.
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