CCRIF SPC

The Caribbean Catastrophe Risk Insurance Facility

IVAN +20

2004 -2024

BRIEF ON

CCRIF SPC

...the Caribbean and Central America's Development Insurance Company

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CCRIF in a Snapshot

About CCRIF SPC

CCRIF SPC is a regional risk pooling facility for Caribbean and Central American governments, which limits the financial impact of devastating hurricanes, earthquakes and excess rainfall events by quickly providing financial liquidity when a member's parametric insurance policy is triggered. CCRIF also provides coverage to governments for the fisheries sector to limit the impact on fishers and fisheries infrastructure of tropical cyclone and rainfall events, to electric utility companies for their transmission and distribution systems and to water utility companies.

CCRIF is the Caribbean and Central America's development insurance company, providing rapid payouts to members within 14 days of a catastrophic event when policies are triggered, even for multi-country impact events causing millions of dollars in damage.

Members, including sovereigns purchase insurance coverage directly from CCRIF and has been doing so since its inception in 2007.

Background – How CCRIF Began

The impacts of Hurricane Ivan in 2004 brought into focus the need for quick liquidity following a natural disaster - quick liquidity to meet immediate needs of the population even before considerations of reconstruction and redevelopment take place. CCRIF SPC and the introduction of parametric insurance in the Caribbean were born out of Hurricane Ivan, which showcased the vulnerability of the region to climate change – evidenced by the increasing impact of hurricanes, tropical storms, drought and flooding. That one hurricane in 2004 resulted in two Caribbean nations – Grenada and the Cayman Islands – each suffering economic losses which totalled close to 200 per cent of their annual GDP, with a further seven countries also severely impacted. Regional losses due to Ivan totalled over US$6 billion.

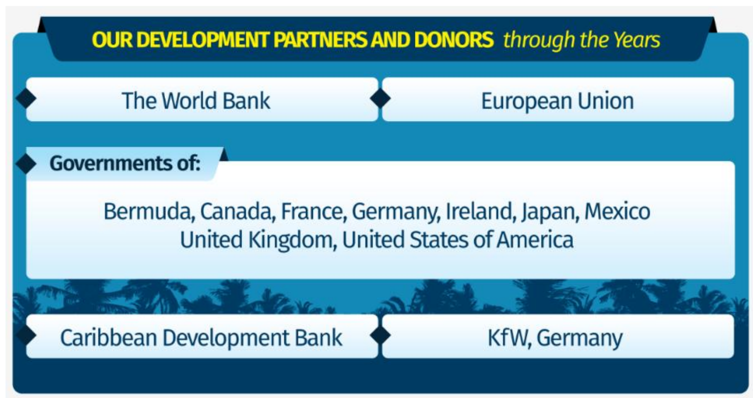
Following Hurricane Ivan, CARICOM Heads of Government approached the World Bank for assistance to design and implement a cost-effective risk financing programme for CARICOM member governments. This marked the beginning of what would become the Caribbean Catastrophe Risk Insurance Facility (CCRIF), now CCRIF SPC – the world's first multi-country risk pool based on parametric insurance. The selection of parametric insurance instruments as a basis for CCRIF policies was largely driven by the fact that parametric insurance is generally less expensive than an equivalent traditional indemnity insurance product, as it does not require a loss assessment procedure after a disaster, allowing for claims to be settled quickly and in the case of CCRIF, within 14 days of the event. This is an important feature considering the urgent need for liquidity after a catastrophe.

Parametric insurance products are a key component in a country's disaster risk financing (DRF) strategy and are designed to pre-finance short-term liquidity helping to close the protection gap, reduce budget volatility, and allow countries to respond to their most pressing needs post-disaster, including providing support to the most vulnerable.

Funding Support for CCRIF

CCRIF was developed under the technical leadership of the World Bank and with a grant from the Government of Japan. It was capitalized through contributions to a Multi-Donor Trust Fund (MDTF) by the Government of Canada, the European Union, the World Bank, the governments of the UK and France, the Caribbean Development Bank and the governments of Ireland and Bermuda, as well as through membership fees paid by participating Caribbean governments.

In 2014, a second MDTF (the Central America and Caribbean Catastrophe Risk Insurance Program (CACCRIP) MDTF) was established by the World Bank to support the development of CCRIF SPC's new products for current and potential members and facilitate the entry of Central American countries and additional Caribbean countries. The MDTF currently channels funds from donors including: Canada, through Global Affairs Canada; the United States, through the Department of the Treasury; the European Union, through the European Commission; and Germany, through the Federal Ministry for Economic Cooperation and Development and KfW. Additional financing has been provided by the Caribbean Development Bank, with resources provided by Mexico; the Government of Ireland; and the European Union, through its Regional Resilience Building Facility managed by the Global Facility for Disaster Reduction and Recovery (GFDRR) and The World Bank.



CCRIF Governance

CCRIF SPC operates as a captive insurance company, which is owned by a trust and is approved as a Class B Licensed Insurer by the Cayman Islands Monetary Authority (CIMA). Effective 1 June 2014, CCRIF was restructured into a segregated portfolio company (SPC) and renamed CCRIF SPC to broaden both its natural hazard risk insurance products and its geographical reach.

CCRIF SPC operates under the guidance of a Board of Directors, a Chief Executive Officer (CEO), Chief Operations Officer (COO) and Chief Risk Management Officer (CRMO). The Board of Directors is responsible for the approval and oversight of all policies related to the administration and operations of the Facility. The Board has six committees that focus on issues related to risk transfer and underwriting, auditing and risk management, investment, budgeting, new products, and technical assistance. CCRIF's operations are laid out in the Facility's Operations Manual and are executed by the Executive Management, staff and seven service provider companies covering the areas of risk management, risk modelling, captive management, reinsurance, reinsurance brokerage, asset management, technical assistance, corporate communications and information technology.

Also, a Central America SP Management Committee has been established for CCRIF's Central America members. The Central America SP Management Committee plays a facilitative role between CCRIF, COSEFIN (Council of Finance Ministers of Central America, Panama and the Dominican Republic), COSEFIN Member States and indirectly with the World Bank on behalf of donors that support the CA SP. The Management Committee makes recommendations to the CCRIF Board on the terms and conditions of insurance policies that are offered to COSEFIN member countries, and the contracting of reinsurance, premium levels and investment policies for the CA SP. The Management Committee is also responsible for monitoring the financial status of the CA SP to facilitate long-term sustainability.

Uniqueness of CCRIF – How Members Benefit from the CCRIF Risk Pool

CCRIF offers its products through segregated portfolios, which allows for total segregation of risk but still provides opportunities to share operational functions and costs and to maximize the benefits of diversification. CCRIF combines the benefits of pooled reserves from members with the financial capacity of the international financial markets. It retains some of the risk transferred by the members and transfers the remainder of the risk to reinsurance markets. For CCRIF policies, each member pays a premium directly related to the amount of risk it transfers to CCRIF.

As a risk pool, CCRIF provides several benefits to its members:

- The Facility provides affordable access to parametric insurance products with premiums at a cost 35-50 per cent lower than if members individually tried to access this type of coverage from the reinsurance markets. The risk pool also enables CCRIF to achieve financial and operational efficiencies (with operational costs below 5% of premium value), which allows members to benefit from relatively good and highly competitive premium prices as well as premium discounts.
- As an insurance company focused on members' development, the Facility ensures that any surplus made goes back to members through discounts on members' coverage, continuously improving its models when new data and model innovations become available, or providing resources to support progammes and projects that support resilience building of members and their communities.

CCRIF Strategic Framework

CCRIF's strategic framework is presented in its Strategic Plan 2022-2025.

Our Vision

A leading global development insurer, providing disaster risk financing products and services to member countries to improve lives and livelihoods, building resilience and advancing sustainable development agendas.

Our Mission
Our mission is to assist member governments and their communities in understanding and reducing the socioeconomic and environmental impacts of natural catastrophes. We do this by being a global exemplar in providing immediate liquidity through a range of affordable insurance products, developing innovative and dynamic tools and services, engaging in effective partnerships, and operating in a way that is financially sustainable and responsive to the needs of the members.

Our Strategic Objectives
Our seven inter-related and mutually reinforcing strategic priorities drive us daily to do what we do, helping us to deliver our priorities, support our members, measure our performance, and engage in continuous improvement.

SO1 Innovative and Responsive Parametric Products
To provide products, services and tools responsive to the needs of members
SO2 Resilience
To enhance capacity for disaster risk management and climate change adaptation
SO3 Financial Sustainability
To sustain financial solvency and integrity
SO4 Corporate Governance
To sustain corporate integrity
SO5 Member Relations and Engagement
To deepen our relationships with our member governments and to strengthen engagement with members
SO6 Scaling Up
To increase member coverage, expand membership and develop new products and services
SO7 Strategic Partnerships
To expand and deepen strategic partnerships

CCRIF Membership

As of June 2024, CCRIF has 30 members:

- **19 Caribbean governments** – Anguilla, Antigua & Barbuda, Barbados, Belize, Bermuda, British Virgin Islands, Cayman Islands, Dominica, Grenada, Haiti, Jamaica, Montserrat, St. Kitts & Nevis, Saint Lucia, Sint Maarten, St. Vincent & the Grenadines, The Bahamas, Trinidad & Tobago, Turks & Caicos Islands
- **4 Central American governments** – Guatemala, Honduras, Nicaragua, Panama
- **3 electric utility companies** – ANGLEC (Anguilla), GRENLEC (Grenada), LUCELEC (Saint Lucia
- **3 water utilities** – BWS (Belize), DOWASCO (Dominica), NAWASA (Grenada)
- **1 tourist attraction** – Cayman Turtle Conservation and Education Centre

CCRIF Products

CCRIF offers 6 parametric insurance products, which are not readily available in traditional indemnity insurance markets.

Base products:

1. Earthquake (EQ) - Based on losses due to ground shaking
2. Tropical Cyclone (TC) - Based on losses due to wind and storm surge
3. Excess Rainfall (XSR) – Based on losses due to the amount of rainfall

Sector-specific products:

4. COAST – Based on losses in the fisheries sector due to rain, waves, wind, and storm surge
5. Electric Utilities – Based on losses for electric transmission and distribution (T & D) lines due to wind
6. Water Utilities – Based on losses for water and wastewater utilities due to rain, wind, and storm surge

CCRIF has used its base models for TC and XSR to create products for specific economic sectors: fisheries, electric utilities and water utilities.

COAST for Fisheries

The product for the fisheries sector was developed under the Caribbean Oceans and Aquaculture Sustainability Facility (COAST) initiative. COAST is a partnership between the US Department of State, the World Bank, CCRIF and the Caribbean Regional Fisheries Mechanism (CRFM). The COAST parametric insurance product promotes the resilience of the fisheries sector against increasing climate change-related disaster risks at affordable premium rates. It provides coverage for losses caused by adverse weather (rough seas – measured by wave height – and heavy rainfall) on fisherfolk and other persons in the fisheries sector and for direct damages caused by tropical cyclones (wind and storm surge) to fishing vessels, fishing equipment and fishing infrastructure.

The COAST product is unique – dissemination of payout funds to the final beneficiaries is incorporated in the COAST policy. If a country's policy is triggered, the funds are provided by CCRIF to the Ministry of Finance, followed by a rapid transfer to the fisherfolk and other affected parties throughout the country's fishing industry. To facilitate timely transfer of funds, the list of beneficiaries is defined at the time of policy inception by the government – and specified in a COAST Operations Manual for the country. The list is designed to include beneficiaries from the fisheries value chain, including fishers, crew members, boat captains, fish vendors and processors, etc., and is kept up to date throughout the year. The COAST product is offered through CCRIF's COAST segregated portfolio (COAST SP). For more information see COAST-The Caribbean Oceans and Aquaculture Sustainability Facility | CCRIF SPC.

Electric Utilities

The electric utilities parametric insurance policy provides coverage for direct damage to the transmission and distribution (T&D) components of an electric power system due to impacts of wind and storm surge caused by a tropical cyclone. It was developed with financial support from the Government of Ireland and was undertaken in close collaboration with the Caribbean Electric Utility Services Corporation (CARILEC). The electric utilities policy is offered through CCRIF's Caribbean Public Utilities segregated portfolio (CPU SP). The product is offered to utility companies and would complement member countries' sovereign policies for tropical cyclones and provide another layer of financial protection for this critical infrastructure. For more information see CCRIF SPC Electric Utilities Product | CCRIF SPC.

Water Utilities

CWUIC
The Caribbean Water Utility Insurance Collective

The parametric insurance product for water utilities is offered through a water utilities collective called CWUIC SP. Established in September 2023 with support from the Inter-American Development Bank (IDB), Caribbean Development Bank (CDB), and the UK Foreign, Commonwealth and Development Office (FCDO), CWUIC serves water and wastewater utilities in the Caribbean to mitigate their disaster risk.

CWUIC is a first-of-its kind climate resilience and parametric insurance facility for water utilities. CWUIC SP's primary objective is to help Caribbean water utilities prepare for and recover from natural hazard events. The provision of (i) equipment, material, and additional human capital to the water utility to restore services, (ii) cash directed to immediate utility response and recovery operations when a policy is triggered, and (iii) technical advisory services to identify and structure priority resilience projects, will greatly mitigate a water utility's disaster risk.

CWUIC SP has been designed with substantial input from Caribbean water utilities and has three components:

- Component 1: The CWUIC Response Program will provide support for early recovery assistance among regional water utilities.

- Component 2: The CWUIC parametric insurance coverage against natural hazards will provide quick liquidity after a qualifying natural hazard event.
- Component 3: The CWUIC Resilience Program will facilitate access to concessionary funding from development banks and other sources of financing for priority resiliency projects.

CCRIF offers its products through the following segregated portfolios (SPs):

- Caribbean EQ/TC SP – providing Earthquake and Tropical Cyclone policies for Caribbean governments.
- Caribbean XSR SP – providing Excess Rainfall policies for Caribbean governments.
- Central America SP – providing Earthquake, Tropical Cyclone, and Excess Rainfall policies for Central American governments.
- COAST SP – providing COAST fisheries policies for Caribbean governments.
- Caribbean Public Utilities SP – providing electric utilities policies for Caribbean electric utility companies.
- CWUIC SP – providing CWUIC policies for Caribbean water/wastewater utility companies.

New Product for Runoff

CCRIF has developed a runoff model for supporting fluvial flood parametric insurance products and the models for Guyana and Suriname have been completed. This model will capture the contribution of runoff from heavy rainfall and overflowing riverbanks.

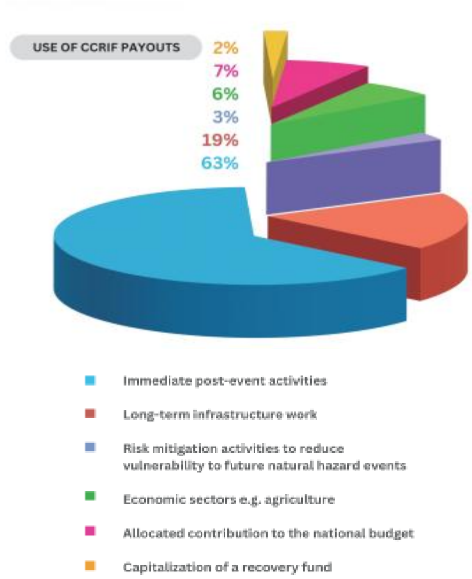
CCRIF Payouts

CCRIF has demonstrated that catastrophe risk insurance can effectively provide a level of financial protection for countries vulnerable to natural disasters. **Between its inception in June 2007 and April 2025, CCRIF has made 78 payouts totalling about US$390 million.**

CCRIF was not set up to cover all the losses on the ground, but to provide quick liquidity after a natural hazard event. Therefore, while CCRIF's payouts may be relatively small compared to the overwhelming cost of rebuilding, all recipient governments have expressed appreciation for the rapid payouts, which they are able to use to address immediate priorities and to support the vulnerable.

As part of members' participation agreements, they are required to report to CCRIF the use of payouts, within six months of receipt of the funds.

Governments have used CCRIF payouts for a variety of purposes, including providing food, shelter, medicine and building materials to affected persons; immediate recovery and repair activities; stabilizing facilities such as water treatment plants; supporting key economic sectors such as agriculture and tourism; and implementing mitigation activities to increase resilience against future natural hazards and climate change, for example, improving critical infrastructure such as roads, drains, bridges, schools and other buildings and enhancing early warning systems. CCRIF's assessments based on monitoring the use of payouts by members have revealed that its payouts have benefitted approximately 5 million persons in the Caribbean and Central America.

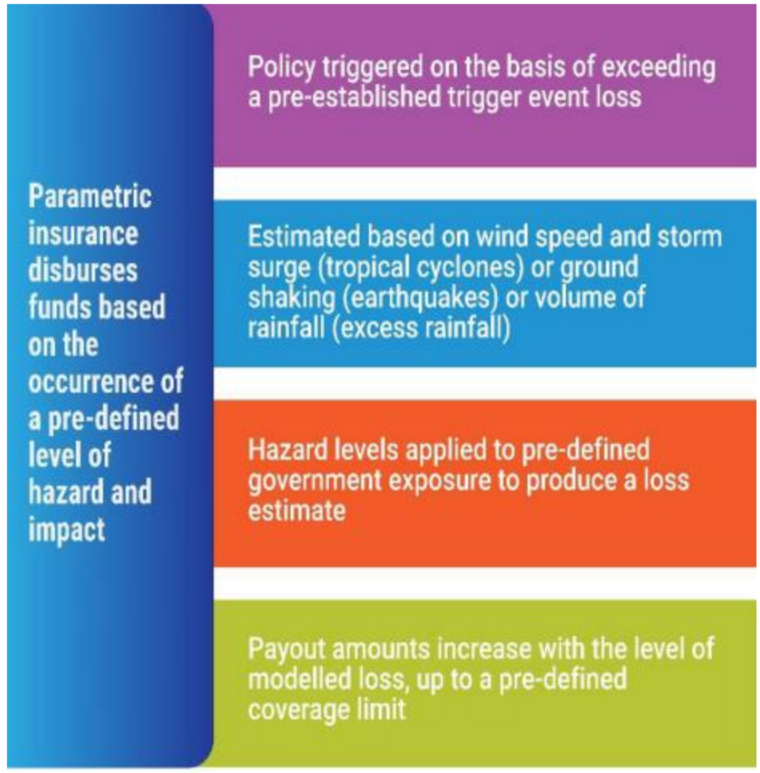


How CCRIF's Parametric Insurance Policies Work

Unlike indemnity insurance, CCRIF's parametric insurance products are insurance contracts that make payments based on the intensity of an event (for example, hurricane wind speed or earthquake intensity) and the amount of loss calculated in a pre-agreed model caused by these events. This allows CCRIF to make payouts very quickly, as loss adjusters are not needed to make on-the-ground assessments after a hazard event. CCRIF makes payouts to countries within 14 days after an event if a policy is triggered.

Parametric insurance:

- covers the probability of a predefined event happening (e.g., a major hurricane or earthquake), instead of indemnifying actual loss incurred and pays out according to a predefined scheme
- insures a policyholder against the occurrence of a specific event by paying a set amount based on the magnitude of the event, as opposed to the magnitude of actual losses in a traditional indemnity policy
- makes a payment upon the occurrence of a triggering event, and is detached from a specific underlying physical asset or piece of infrastructure



CCRIF's parametric policies are based on a loss modelling approach. CCRIF's policies make payments based on the intensity of an event and the amount of loss calculated in a pre-agreed catastrophe model caused by these events. The losses are estimated (calculated or modelled) based on wind speed and storm surge – for tropical cyclone policies; level of ground shaking (for earthquake policies); or the volume and distribution of rainfall (for excess rainfall policies).

CCRIF models use external data for the natural hazard event, country vulnerability and exposure (assets at risk) and calculate a modelled loss for the affected members. The modelled loss is then compared to the member's CCRIF policy to determine if the policy is triggered and the value of the payout (if the policy is triggered).

Parametric insurance products are a key component in a country's disaster risk financing (DRF) strategy and are designed to pre-finance short-term liquidity helping to close the protection gap, reduce budget volatility, and allow countries to respond to their most pressing needs post-disaster, including providing support to the most vulnerable. CCRIF has demonstrated that catastrophe risk insurance can effectively provide a level of financial protection for countries vulnerable to natural disasters.

How a CCRIF Policy is Triggered

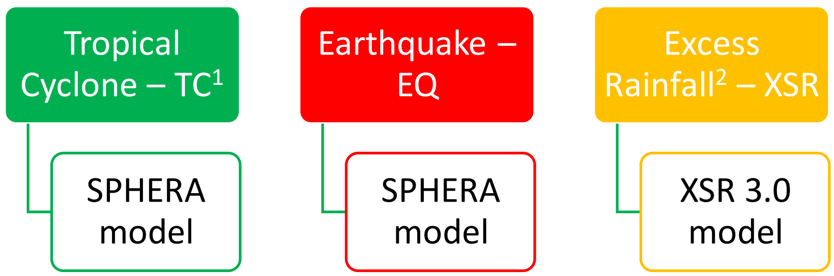
A CCRIF policy is triggered when the modelled loss for a natural hazard event exceeds the attachment point selected by the policyholder, which is specified in the policy contract. The attachment point is similar to the deductible in a traditional indemnity insurance policy (see the section below on the elements of a CCRIF policy).

CCRIF's Models

CCRIF's ability to provide parametric insurance coverage is underpinned by its parametric insurance models. CCRIF's models have evolved over the years, moving from off-the-shelf models, to CCRIF-customized models and finally to models that are designed for and fully owned by CCRIF. The upgrading and revision of the models demonstrates its commitment to continuous improvement, and this has emerged as one of the core principles underpinning its corporate governance framework.

The base models currently in use are the System for Probabilistic Hazard Evaluation and Risk Assessment (SPHERA) model for tropical cyclones and earthquakes and the XSR 3.0 model for excess rainfall. These were updated in 2022 and have been used to underpin CCRIF's policies since the 2023/24 policy year. Modified versions of these base models also underpin the policies for COAST (fisheries), electric utilities and water utilities.

CCRIF's base models are shown below.



1. Used also in the COAST, electric utilities and water utilities products
2. Used also in the COAST and water utilities products

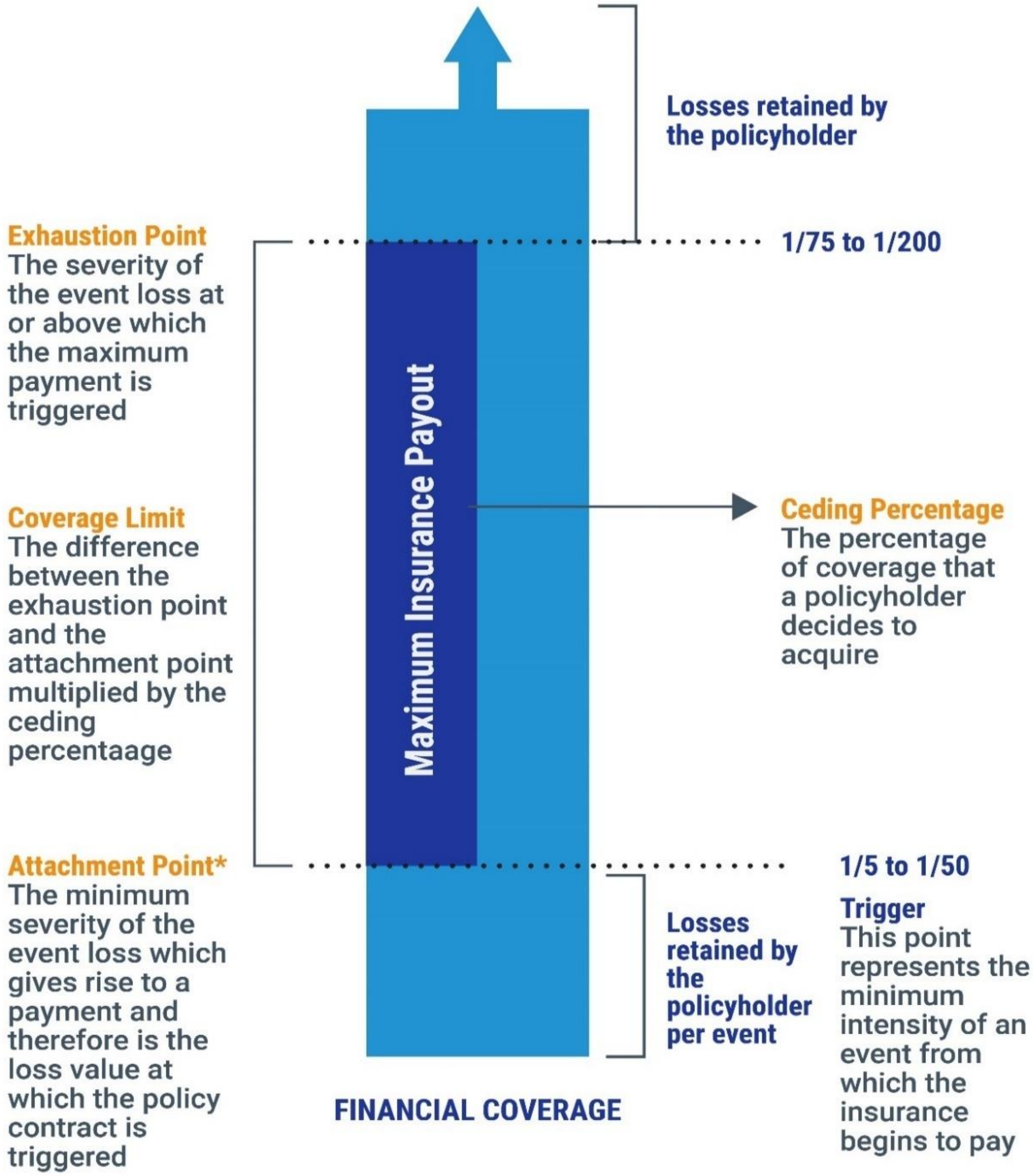
For more information on the CCRIF models used throughout the years, please see [The Evolution of CCRIF's Parametric Insurance Models | CCRIF SPC].

Elements of a CCRIF Parametric Insurance Policy

CCRIF members can purchase policies for tropical cyclones, earthquakes, and excess rainfall with a maximum coverage of US$150 million available for each peril. Members are required to make three key decisions regarding their coverage selection by selecting three elements which determine the coverage limit:

- The attachment point
- The exhaustion point
- The ceding percentage

The figure below shows these elements with some examples of attachment and exhaustion points, which are expressed in terms of return periods. The return period represents the likelihood of occurrence of an event with such magnitude of losses. For example, an attachment point of a 5-year return period corresponds to the loss value for an event with a likelihood (probability) of being exceeded once every 5 years.



* The attachment point functions like a deductable in a standard insurance policy

CCRIF Policy Elements

The **attachment point** is the minimum severity of the event loss which gives rise to a payout and therefore is the loss value at which the policy contract is triggered. ***A payout is made on the policy when the modelled loss for an event exceeds the attachment point specified in the contract.*** As the modelled loss increases above the attachment point, the corresponding payout increases proportionally, according to the selected ceding percentage, until the exhaustion point is reached. The attachment point is specified as a dollar value in the policy contract. However, members generally select the attachment point as a return period in years.

The **exhaustion point** is the severity of the event loss at or above which the maximum payout is triggered. As with the attachment point, members generally select the exhaustion point as a return period in years but in the policy, it is specified as a dollar value.

The **ceding percentage** is the fraction of the risk between the attachment and exhaustion points that the member is transferring to CCRIF. Once the attachment point and exhaustion point are chosen, there is a one-to-one relationship between the amount of premium paid and the ceding percentage – a higher ceding percentage means a higher premium, with the payout amount being greater. The ceding percentage that is selected will depend on the capacity of the member to absorb losses and also on what premium the member wishes to pay.

The attachment point, exhaustion point, and ceding percentage determine the policy **coverage limit**. The coverage limit is the difference between the attachment and exhaustion points multiplied by the ceding percentage and represents the maximum amount that can be paid out under the contract in any one year.

CCRIF Policy Endorsements

CCRIF has developed five policy features (or endorsements) that aim to provide coverage under special circumstances. They are aimed at improving CCRIF's ability to identify and provide coverage for hazard events that account for climate change and the increased frequency and intensity of events and which occur under very specific conditions that may contribute to the negative impacts from the event.

CCRIF's policy endorsements are:

- **Reinstatement of Sum Insured Cover** (RSIC) (for TC, EQ, and XSR policies) –
  The RSIC allows a member government's policy to be reinstated if that policy reaches the coverage limit before the end of the policy year, allowing members to be financially protected against hazard events after their coverage is exhausted.
- **Aggregated Deductible Cover** (ADC) (for TC and EQ policies) –
  The ADC is designed to provide a minimum payment for events that are objectively not sufficient to trigger a CCRIF tropical cyclone or earthquake policy because the modelled loss is below the policy's attachment point.
- The **Wet Season Trigger** (for XSR policies) –
  The WST can provide a payout for rainfall incidents that occur when the soil is already saturated from previous rainfall, and therefore captures the heightened risk of flooding and landslides under these conditions.
- The **Localized Damage Index** (LDI) and **Localized Event Trigger** (LET) (for TC and XSR policies, respectively) –
  These endorsements provide coverage for tropical cyclones and rainfall events where losses are highly concentrated in small sections of a country.

CCRIF Member Coverage

Since policy year 2021/22 CCRIF has provided over US$1 billion in coverage each year to its members to financially protect their economies or sectors, compared to US$500 million when the Facility first began operations in 2007.

CCRIF as a Climate Change Loss and Damage Mechanism

CCRIF's parametric insurance is cited as being able to help countries better manage growing risks and losses due to climate change. In global discussions on climate change, there is agreement that "loss and damage" refers to the negative effects of climate change that occur despite mitigation and adaptation efforts. Parametric insurance can address more than physical damage to assets and infrastructure. It provides solutions for economic exposure. With the increasing frequency and intensity of events caused by climate change and the increasing losses to governments, businesses and communities, parametric insurance can be viewed as being better able to match capital to the risk caused by climate change.