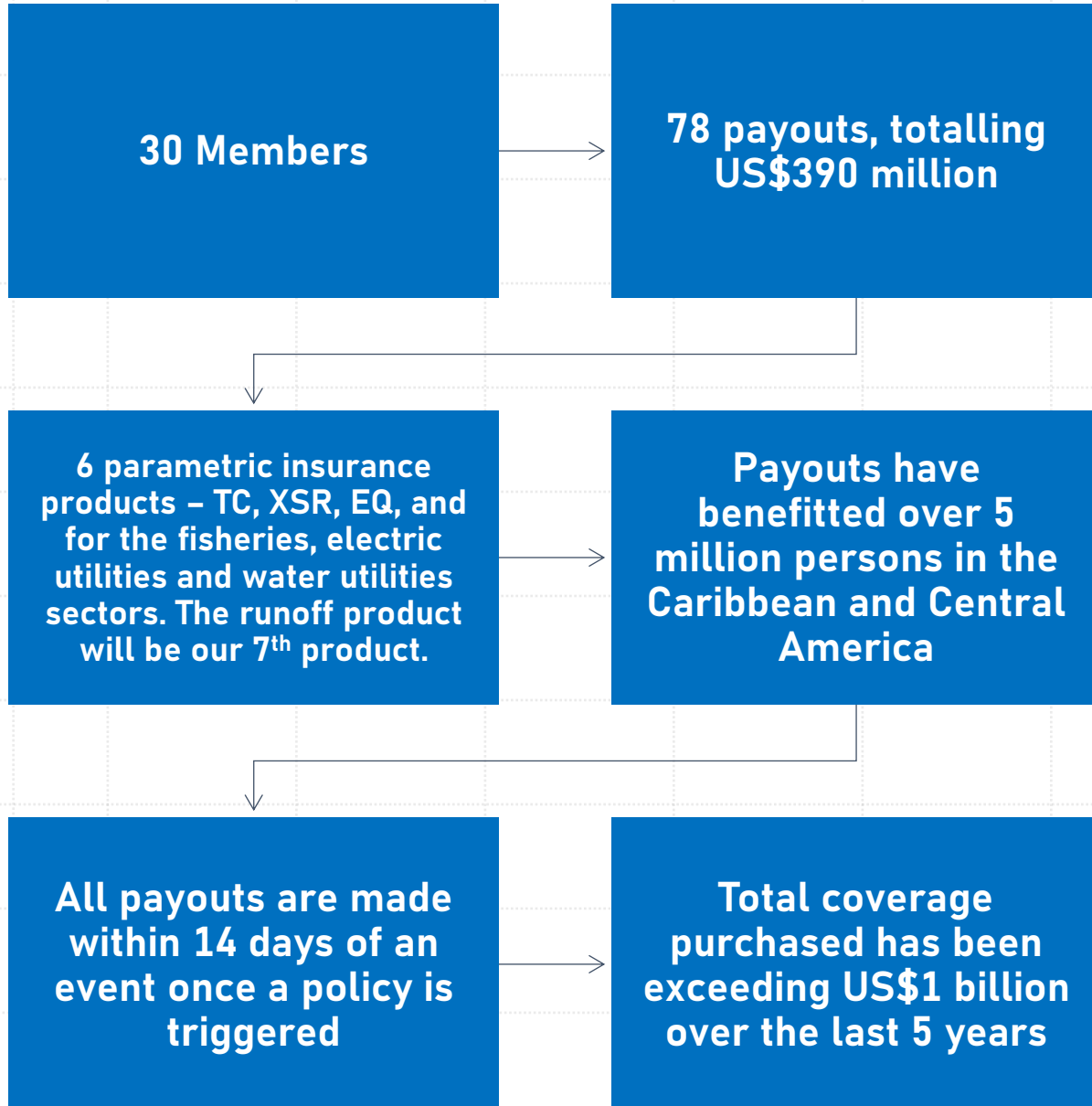


**CCRIF SPC:
The Caribbean and Central America
Parametric Insurance Facility and
Development Insurance Company**

CCRIF in a Snapshot



THE CARIBBEAN AND CENTRAL AMERICA PARAMETRIC INSURANCE FACILITY AND DEVELOPMENT INSURER

— 17 years of Providing Access to —
Quick Liquidity
in the Caribbean and Central America
following Natural Disaster Events

30 MEMBERS

ANNUAL COVERAGE PURCHASED **> US\$1 Billion**

78 PAYOUTS | **US\$390 MILLION** TOTAL PAYOUTS

PARAMETRIC INSURANCE PRODUCTS

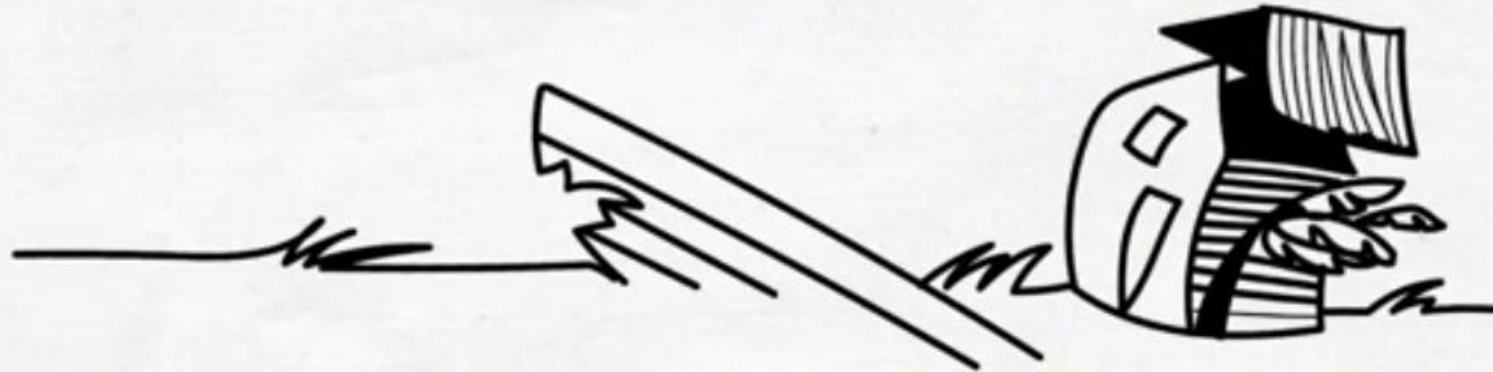
- EARTHQUAKE
- TROPICAL CYCLONE
- EXCESS RAINFALL
- FISHERIES
- ELECTRIC UTILITIES
- WATER UTILITIES

> 5 MILLION PERSONS BENEFITTING FROM PAYOUTS / **50 MILLION** (Population of the Caribbean and Central America)

CLOSING THE PROTECTION GAP • BUILDING RESILIENCE • A STRATEGY FOR LOSS AND DAMAGE



The work and impact of CCRIF in the Caribbean and Central America



<https://www.youtube.com/watch?v=CBa0abHRI7Y>

The Origins of CCRIF

Prompted by Hurricane Ivan in 2004 which caused billions of dollars in losses across the Caribbean (200% of GDP in Grenada and the Cayman Islands)

Following Ivan, Caribbean governments requested support from the World Bank to identify a mechanism that could provide quick liquidity to governments post disaster.

Parametric insurance was deemed the best approach for access to quick liquidity and to cover the small island states in the Caribbean. The idea of a risk pool emerged.

This led to the birth of CCRIF – the world’s first multi-country risk pool providing parametric insurance – established in 2007

Originally designed to limit the financial impact of catastrophic hurricanes and earthquakes

Provides short-term funding to support relief in the immediate aftermath of a natural disaster



CCRIF is:

The world's first multi-country, multi-peril risk pool based on parametric insurance

The leading provider of parametric catastrophe insurance for Caribbean and Central American governments, electric utility companies for transmission and distribution, and water utilities

Able to provide quick liquidity within 14 days of an event, following a natural disaster, helping members to reduce budget volatility and respond to their most pressing needs post disaster, including providing support to the most vulnerable

Providing insurance products not readily available in traditional insurance markets and is key to closing the liquidity gap

Responsive to the multi-hazard environment in which the Caribbean and Central America exist.

CCRIF's Impact and Footprint

Our membership today is 30 - up from the original 16 when the company opened its "doors" in 2007



We now offer 6 parametric insurance products - tropical cyclone, earthquake, excess rainfall, and for the electric and water utilities and fisheries sectors, compared to 2 when we started



We became a segregated portfolio company in 2014 which has allowed us to provide coverage to other geographic regions outside the Caribbean and to offer new products to cover additional perils as well as key economic sectors



Since 2007, CCRIF SPC has made 78 payouts totalling US\$390 million. CCRIF payouts are not designed to cover all losses on the ground but to provide an injection of quick liquidity for response and recovery activities

CCRIF's Impact and Footprint

We continue to provide increasing coverage to financially protect our members, over US\$1 billion in the last five years, compared to US\$500 million when we first began operations.



We have continued to improve our models that underpin our policies - to enable model losses to more accurately reflect actual losses from an event, thus reducing basis risk. In 2007, we started with an off-the-shelf model and today our members own these models, which continue to be strengthened and improved.



We have a well-developed technical assistance programme (akin to a foundation), designed to build resilience in communities and build capacity of our stakeholders to advance the sustainable development of our region.

CCRIF is a risk pool...

Access to Parametric Insurance in the Caribbean and Central America - Benefits from Risk Pooling...

1

Risk pooling is an important factor for ensuring affordable access to parametric insurance products, helping members to increase coverage levels. Lower costs are possible as we can pool diverse exposures, retain some risk and transfer excess risk to the capital and reinsurance markets.

2/17/2025

2

We have been able to achieve financial and operational efficiencies which we pass on to our members in the form of lower premiums and premium discounts (development insurer).

3

The risk pool has moved from 16 to 30 members – a bigger risk pool equates to more benefits for members

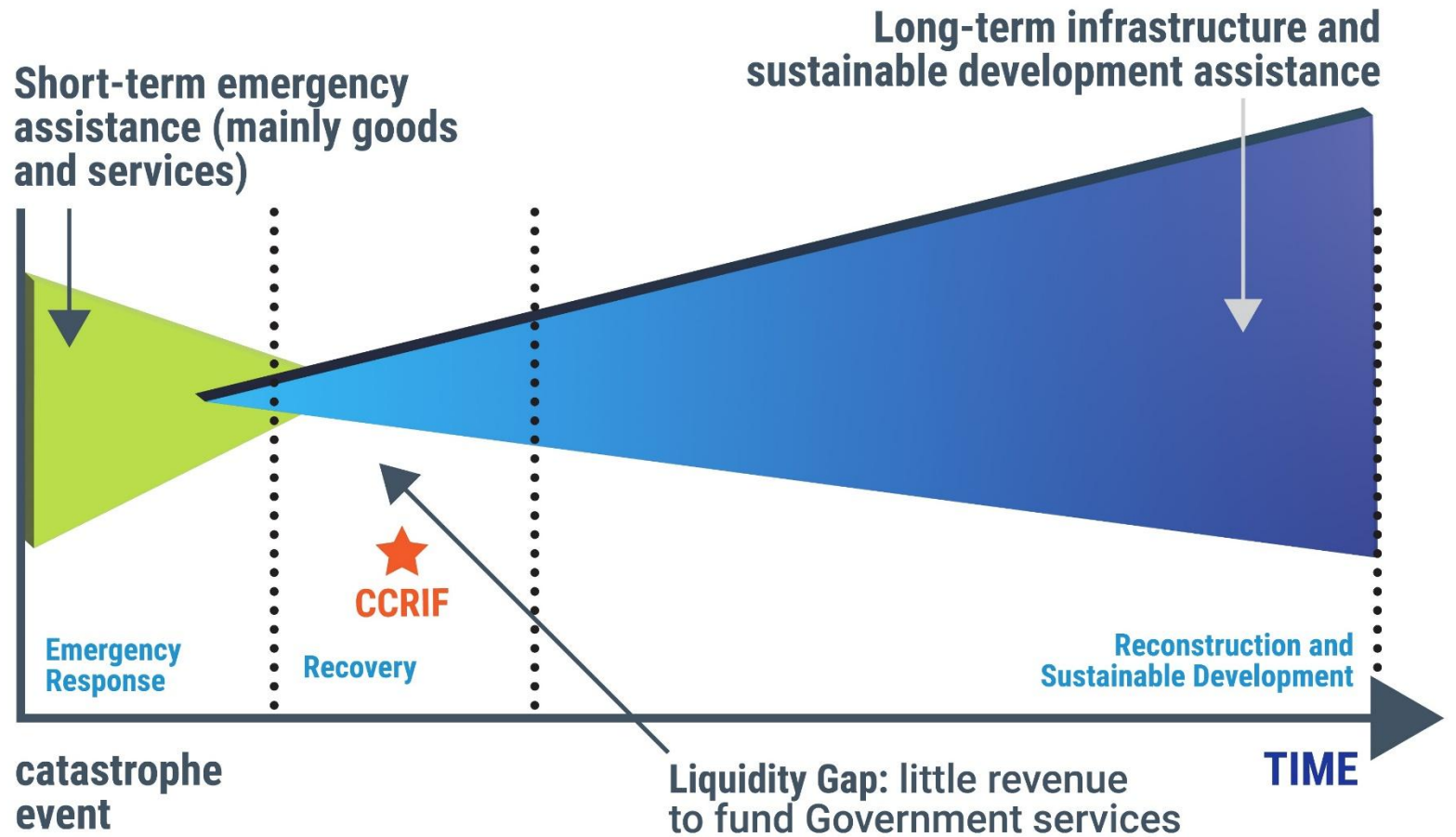
4

Risk pooling has also allowed us to enter new geographic areas, new sectors (water and electric utilities) and to create more and diverse products.

5

Through the risk pool we are strengthening regional and sub-regional cooperation (between the Caribbean and Central America), policy dialogues and south-south cooperation

CCRIF payouts help to close the liquidity gap...





Earthquake



Tropical Cyclone



Excess Rainfall



Fisheries



Electric utilities



Water utilities

CCRIF Parametric Insurance Products

1. EQ - Based on losses due to ground shaking
2. TC - Based on losses due to wind and storm surge
3. XSR – Based on losses due to amount of rainfall
4. COAST – Based on losses in fisheries sector due to rain, waves, wind and storm surge
5. Electric Utilities – Based on losses for electric T & D lines due to wind
6. Water Utilities – Based on losses for water and wastewater utilities due to rain, wind and storm surge



Sector-related Products – Example: COAST

A parametric insurance product providing quick payouts for the fisheries sector

Provides cover for losses attributed to the fisheries sector due to **unusually bad weather conditions (high waves and/or heavy rainfall) and/or high wind and storm surge caused by tropical cyclones**

Supports the livelihoods of fishers and others in the fisheries industry - e.g. fishers, crew members, boat captains, market vendors (many of whom are women) fish processors, and other vulnerable groups along the fisheries value chain

Designed to support governments' efforts to rapidly put money into the hands of those impacted by extreme weather (rainfall and tropical cyclones), providing them with immediate economic relief.

Policy includes mechanism for disseminating payout to beneficiaries in the fisheries sector

Promotes a culture of building back better to enhance coastal community resilience after an extreme weather event

The insurance policy and payouts are based on full transparency and accountability



Sector-related Products – Example: Electric Utilities

A parametric insurance product providing quick payouts for electric utility companies

Provides cover 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

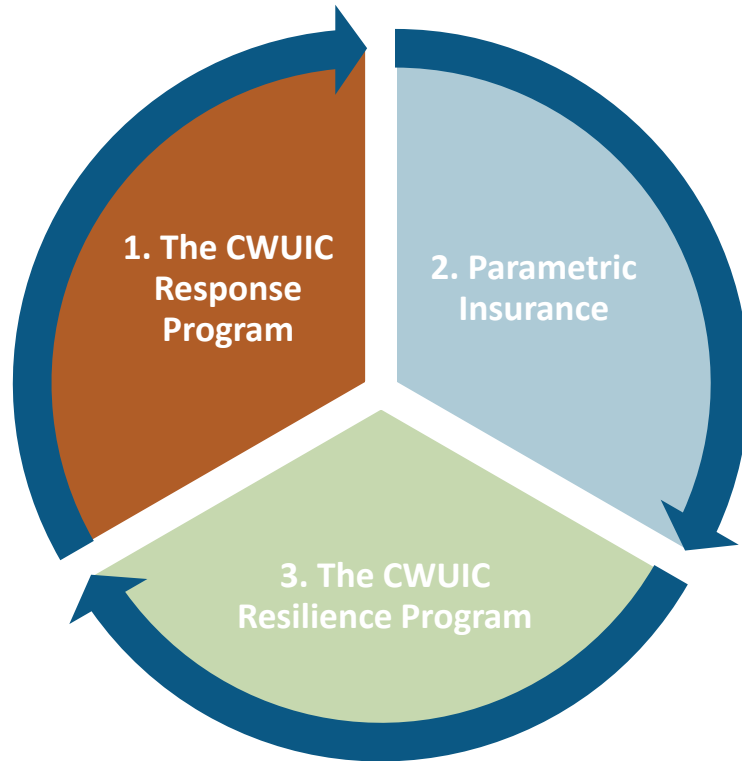
Designed to complement member countries' sovereign policies for tropical cyclones and provide another layer of financial protection for this critical infrastructure

Complements utility companies' self-insurance funds, which are often inadequate to address a catastrophic event

The insurance policy and payouts are based on full transparency and accountability



CWUIC SP's objective is to build resilience and help water and wastewater utilities recover from disasters



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

Component 2: Parametric insurance will provide coverage against natural hazards and **provide quick liquidity after a qualifying natural hazard event**

Component 3: The CWUIC Resilience Program will facilitate access to **funding from development banks and other financial institutions for priority resilience projects**



New Products in Development, Additional Perils and Scaling Up

Multi-peril agriculture product (with microinsurance elements) and including livestock

Flood/Runoff product

Housing product

Tourism product

Product for government infrastructure

Products for additional perils: drought, sargassum, volcanic eruptions

Microinsurance for vulnerable groups, MSMEs etc

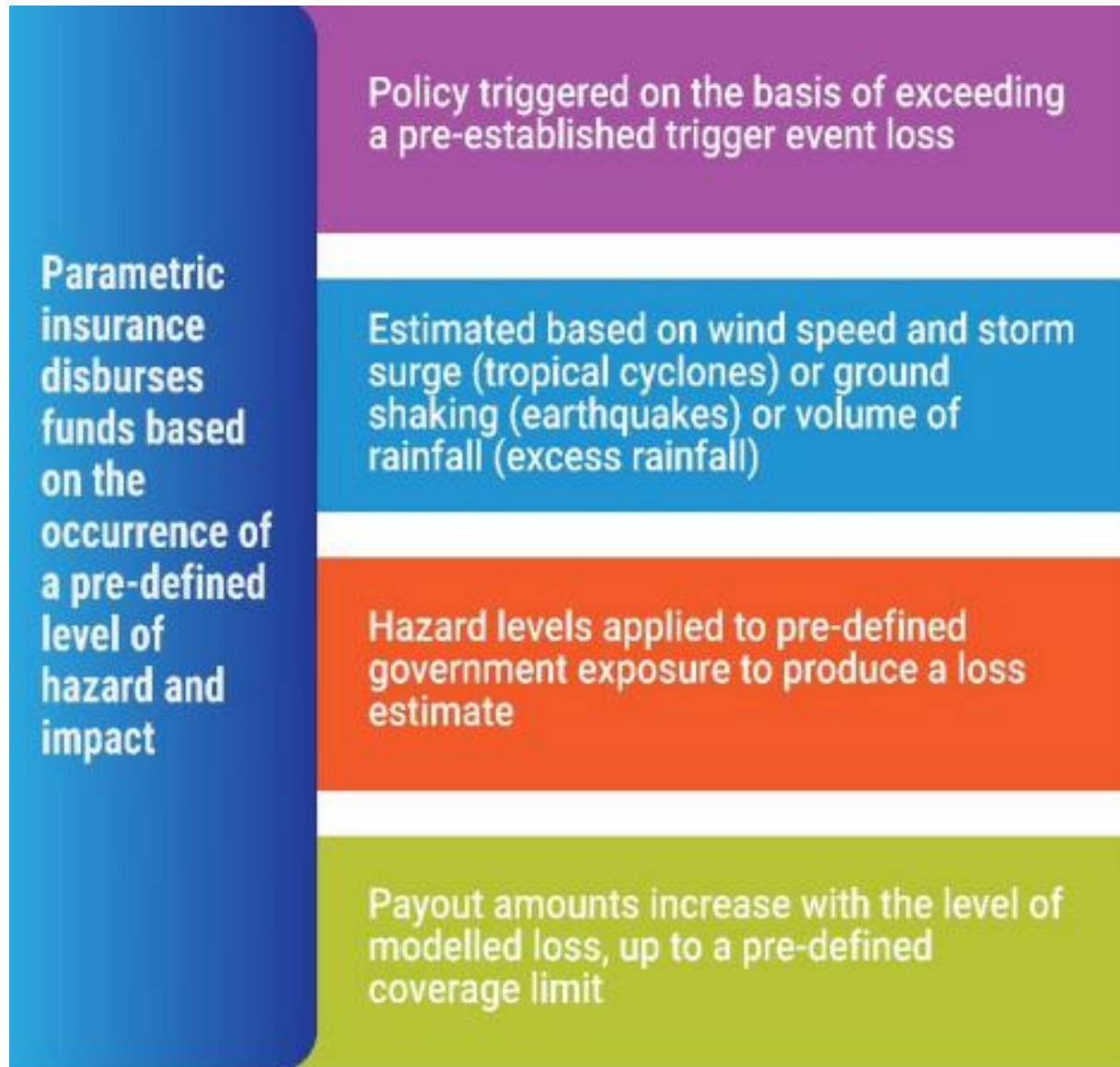
Parametric Insurance

The selection of a parametric insurance instrument 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. In the case of CCRIF, payments are made within 14 days of the event. This is an important feature considering the urgent need for liquidity by governments after a catastrophe to support the most vulnerable in the population, communities and infrastructure.

Parametric insurance:

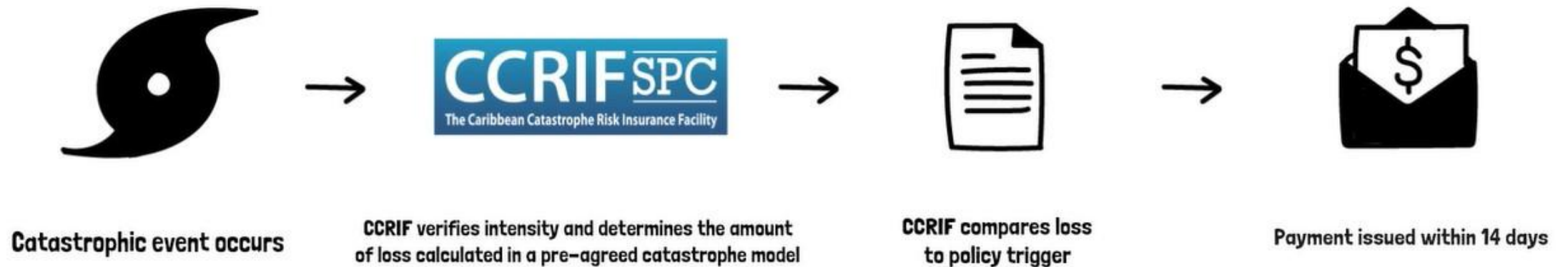
- covers the probability of a predefined event happening (e.g., a major hurricane or earthquake), instead of indemnifying actual loss incurred and pays out according to a predefined scheme
- insures a policyholder against the occurrence of a specific event by paying a set amount based on the magnitude of the event, as opposed to the magnitude of the 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
- makes payments based on the intensity of an event (for example, hurricane wind speed, earthquake intensity, volume of rainfall) and the amount of loss calculated in a pre-agreed catastrophe model caused by these events

CCRIF's parametric insurance policies



CCRIF makes payouts within 14 days after an event.

How CCRIF parametric policies work



Benefits of Parametric Insurance

- Parametric insurance is generally less expensive than an equivalent indemnity insurance product.
- Parametric insurance can provide coverage in areas where indemnity insurance is not available.
- Calculation of payouts is totally objective.
- Parametric insurance enables payouts to be made very quickly after a hazard event. CCRIF makes payouts within 14 days after an event.
- CCRIF's parametric insurance represents a cost-effective way to pre-finance short-term liquidity to begin recovery efforts for a government after a catastrophic event, thereby filling the gap between immediate response aid and long-term redevelopment.
- CCRIF can make payouts of up to US\$150 million per peril for each country.

Some Other Benefits of Parametric Insurance

With the increasing frequency and intensity of hydrometeorological events due to climate change, parametric insurance can help countries and key sectors better manage growing risks and losses.

Parametric microinsurance provides solutions to help vulnerable groups recover faster and it is key to making social protection systems more shock responsive.

Parametric insurance can address more than physical damage to assets and infrastructure – it provides solutions for economic exposure.

Parametric insurance payouts are quick compared to indemnity insurance, and can immediately support countries following a natural disaster, to keep the wheels of government turning and address business interruption and the impact on the economy including sectors such as agriculture and public utilities, and importantly the impact on livelihoods.

With the increasing impacts due to climate change and the increasing losses of governments, business and communities, parametric insurance can be viewed as being better able to match capital to the risk caused by climate change – in other words parametric insurance and the use of risk pooling is more economically viable than traditional insurance for fiscally constrained countries.

Parametric and Indemnity Insurance can be Complementary

- Parametric insurance can provide coverage that is unavailable through indemnity insurance.
- Parametric insurance solutions are not designed to replace but to complement traditional insurance programmes.

Example:

- Electric utility companies can purchase indemnity insurance to cover loss and damages for its centralized generating facilities – but not for the transmission and distribution (T&D) components
- CCRIF's Electric utilities parametric insurance covers direct losses to the overhead transmission and distribution (T&D) components of the electric power system due to high winds from tropical cyclones.



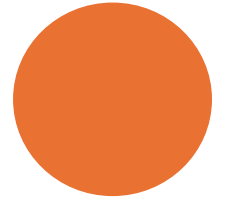
Microinsurance – A Risk Financing and Social Protection Mechanism at the Individual Level

- Microinsurance refers to insurance services offered primarily to clients with low income and limited access to mainstream insurance services and other means of effectively coping with risk.
- Microinsurance is the protection of low-income people against specific perils/risks in exchange for premium payments proportionate to the likelihood and cost of the risk involved
- Factors such as financial illiteracy, lack of education, poverty prevent many from properly mitigating this risk – making them perpetually poor.
- Microinsurance helps to shield vulnerable people with inadequate earnings against certain risks such as death of family members, accidents, diseases and natural disasters.
- Today, microinsurance is recognized as a means of providing financial security and enable lower income families to access insurance against natural disasters and other exogenous shocks
- A key component of country's financial inclusion policy
- Microinsurance can be considered as an effective risk-transfer mechanism and an integral part of an overall disaster risk management strategy.



How does Microinsurance Help Vulnerable People

- Microinsurance is intended to provide some stability to the financial situation of vulnerable, low-income individuals after a disaster through the injection of quick liquidity, thereby allowing them to avoid adopting coping strategies that could lead them deeper into poverty.
- It will help people whose livelihoods are affected, without them having to wait for help from “external” sources like the Government. It would enable farmers for example to have a source of immediate funding to undertake activities such as replanting, draining fields and reconstructing irrigation systems
- Could improve the credit worthiness of individuals in the long term, giving them access to financial services that they previously may not have had access to
- Microinsurance is a clear example of proactive planning for DRM at the individual level
- Microinsurance can also be a key part of a country’s financial inclusion policy





Some Examples of Linking Social Protection and Insurance



- **Sovereign Product with microinsurance features developed for fishers under COAST Project with support from governments – CCRIF**
- **Climate Risk Adaptation and Insurance in the Caribbean (CRAIC) Project (Livelihood Protection Policy - LPP) – CCRIF, MCII, ILO**

Microinsurance - Climate Risk Adaptation and Insurance in the Caribbean project

The Livelihood Protection Policy

- Targeted at individuals, the LPP is designed to help protect the livelihoods of vulnerable low-income individuals such as small farmers, tourism workers, fishers, market vendors and day labourers, by providing quick cash payouts following extreme weather events (specifically, high winds and heavy rainfall).
- Essentially, the livelihood protection policy is designed to reduce vulnerability and sustain the livelihoods of low-income communities... towards closing the protection gap



Implemented by partners Munich Climate Insurance Initiative, CCRIF SPC, and International Labour Organization’s Impact Insurance Facility, DHI with support from the German Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUZ).

Pilot countries: Belize, Grenada, Jamaica, Saint Lucia, and Trinidad & Tobago

<http://www.ccrif.org/publications/technical-paper/20-lessons-learned-craic-project>

20 Lessons Learned in Microinsurance in the Caribbean

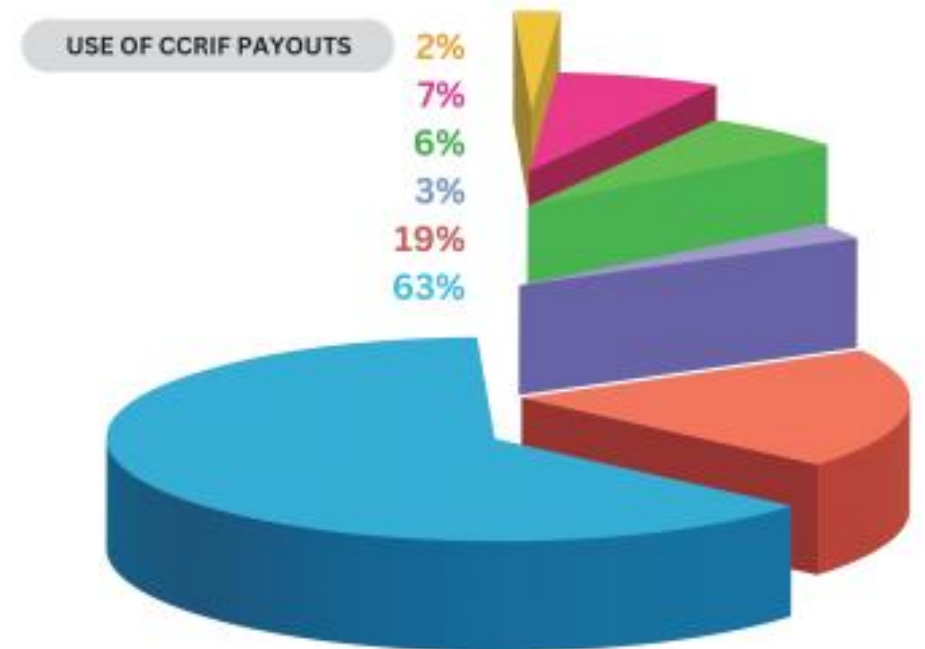


**CLIMATE RISK INSURANCE IN
THE CARIBBEAN:**
20 lessons learned from the Climate
Risk Adaptation and Insurance
in the Caribbean (CRAIC) project

CCRIF Payouts and Use of Payouts

Since 2007, CCRIF SPC has made 78 payouts totalling US\$390 million

- Payouts in 2024 totalling US\$122 million: to Guatemala, Grenada, Trinidad and Tobago, Jamaica, Cayman Islands, Panama, Honduras
- Single largest payout: Grenada – US\$42.4 million for Hurricane Beryl
- Member receiving the largest number of payouts: Trinidad and Tobago – 9 in total
- Member receiving the largest value in payouts: Haiti – US\$78 million



- Immediate post-event activities
- Long-term infrastructure work
- Risk mitigation activities to reduce vulnerability to future natural hazard events
- Economic sectors e.g. agriculture
- Allocated contribution to the national budget
- Capitalization of a recovery fund

CCRIF's Risk Models

Real time modeling for natural disasters

- CCRIF's parametric policies are based on a loss modelling approach.
- CCRIF's models are run in real time, using open data produced by internationally recognized agencies
- With real-time modelling, CCRIF can monitor the evolution of any potentially damaging event while it unfolds using up-to-date meteorological and remotely sensed data
- Real-time modelling enables CCRIF to quickly and accurately assess the impact of an event and trigger automated payouts, reducing the time it takes to provide payouts to members



Tropical Cyclone – TC

- SPHERA* model
- Uses a probabilistic approach to generate a catalogue of possible storms from the analysis of the historical tracks to provide a robust estimate of TC risk in any given area

Earthquake – EQ

- SPHERA* model
- Performs a probabilistic seismic hazard analysis to generate a stochastic event set that is used to produce a fully probabilistic estimation of the losses induced by them on the exposed assets of the different countries

Excess Rainfall – XSR

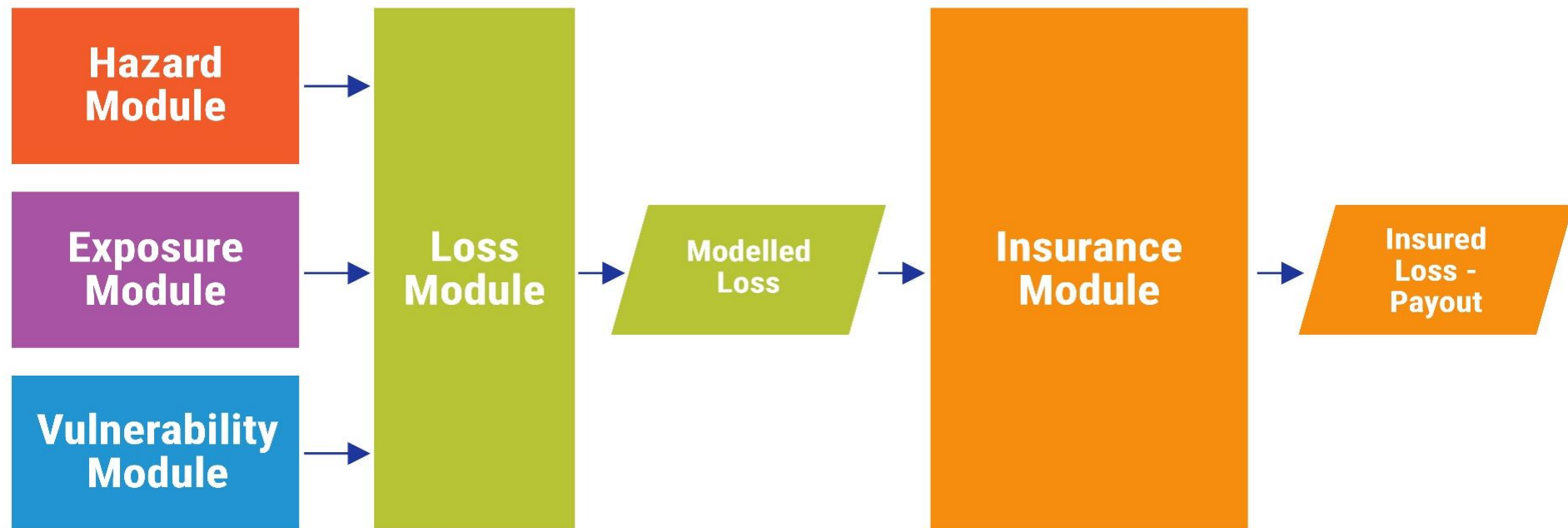
- XSR 3.0 model
- Adopts an ensemble approach that incorporates multiple estimates to reduce uncertainty
- Uses a combination of meteorological and satellite-based estimates to improve reliability

*System for Probabilistic Hazard Evaluation and Risk Assessment

CCRIF's Parametric Model Construct

CCRIF's parametric policies are based on a loss modelling approach.

The objective of the loss modelling approach is to equip CCRIF with the capacity to estimate loss probabilities for individual countries, price contracts for specific countries, and estimate site-specific hazard levels and losses for specific events during the contract period.



CCRIF's Parametric Models – The Modules

Hazard

- Defines the expected frequency and severity of a hazard event at a specific location
- Based on a database of historical events and simulated events
- EQ: 1520-2022
TC: 1850-2022
XSR: 1998-2022

Exposure

- Provides a comprehensive and spatially-distributed list of vulnerable assets e.g. buildings, airports/ports, power facilities, road networks, crops

Vulnerability

- Assesses the vulnerability of the assets in the exposure module to the hazards defined in the hazard module

Loss

- Uses the Hazard, Exposure and Vulnerability modules to calculate a modelled loss for a current hazard event

Insurance

- Applies the modelled losses to the conditions of the country's CCRIF policy to determine if the policy is triggered and computes the payout to the country.

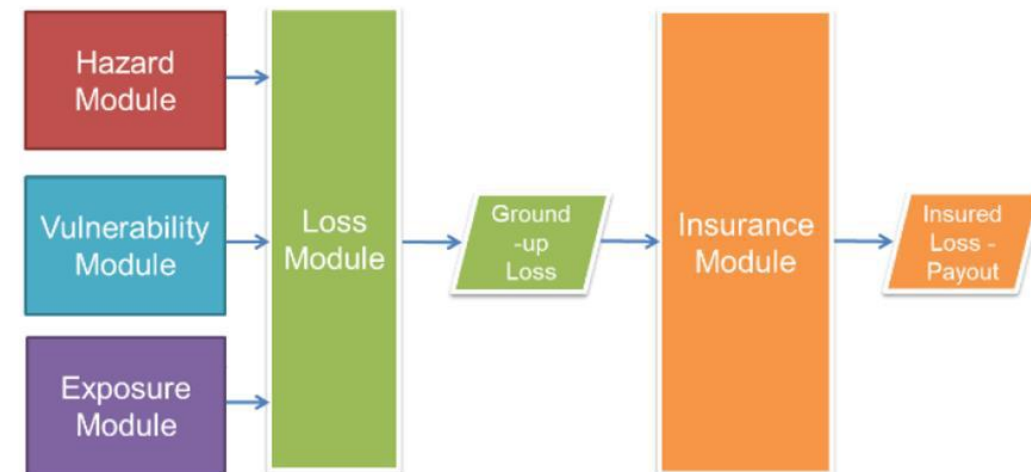
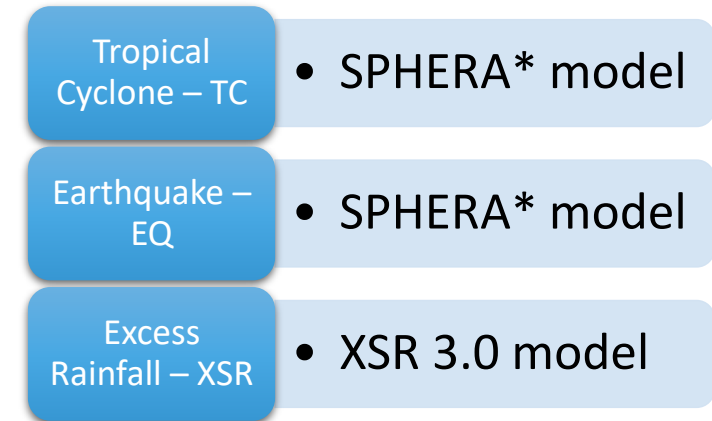
CCRIF's Base Parametric Insurance Models... Key to Developing Products for New Sectors

CCRIF is using its base products such as tropical cyclone and excess rainfall to create products for sectors that either had no insurance or limited insurance or for groups that needed insurance

- TC model was used to underpin a product for the electric utilities sector and specifically for overhead transmission and distribution
- TC and XSR model used to develop a product for the fisheries sector
- TC and XSR models were used to develop a product for the water utilities sector

We do this by making changes to the exposure module of the CCRIF model construct. A specific model for a sector would require data for the exposure module specific to that sector

Currently working on a drought model which would become another base model, enabling us to develop a multi-peril product for the agriculture sector – that will cover tropical cyclones, excess rainfall and drought



CCRIF Policy Elements

CCRIF policy premiums depend on the selection by Governments of 3 elements:

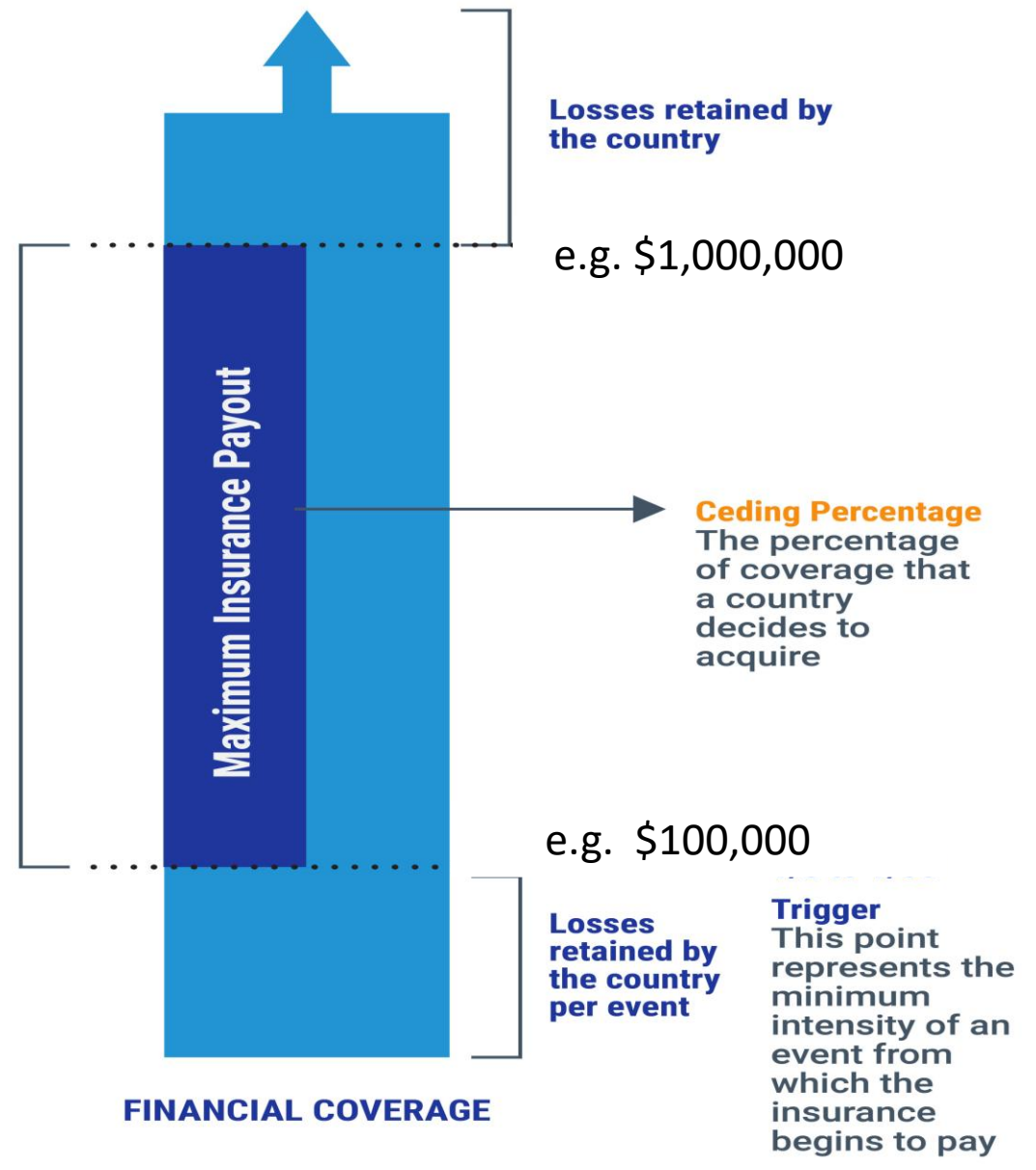
- Attachment Point
- Ceding Percentage
- Exhaustion Point

These are informed by the country's risk profiles

Exhaustion Point
The severity of the event loss at or above which the maximum payment is triggered

Coverage Limit
The difference between the exhaustion point and the attachment point multiplied by the ceding percentage

Attachment Point*
The minimum severity of the event loss which gives rise to a payment and therefore is the loss value at which the policy contract is triggered



A CCRIF policy is triggered when the modelled loss for an event in a member country exceeds the attachment point specified in the country's policy contract.

Special Endorsements for CCRIF Policies

- In 2017, CCRIF introduced two new policy endorsements for tropical cyclone and earthquake policies: **the Reinstatement of Sum Insured Cover (RSIC)** and Aggregated Deductible Cover (ADC). For 2024/25, offered the RSIC for excess rainfall policies also.
- These voluntary endorsements to the main policies allow member countries to access coverage designed to be supplemental to the existing policy structures.



RSIC

Reinstatement of Sum Insured Cover

- Establishes a reinstatement of cover provision
- This prevents a country from being exposed until the next policy year if the coverage limit is exhausted



ADC

Aggregated Deductible Cover

- Provides a minimum payment for TC or EQ that does not trigger a CCRIF policy
- It was also designed to reduce basis risk.
- It aims to reduce the probability of a missed event.
- A payment can be up to the annual net premium

NEW Endorsements for CCRIF TC and XSR Policies

In 2023, CCRIF introduced 3 new policy endorsements

For Tropical Cyclone Policies:

Localized Damage Index (LDI) for tropical cyclone events where losses are highly concentrated in small sections of the country.

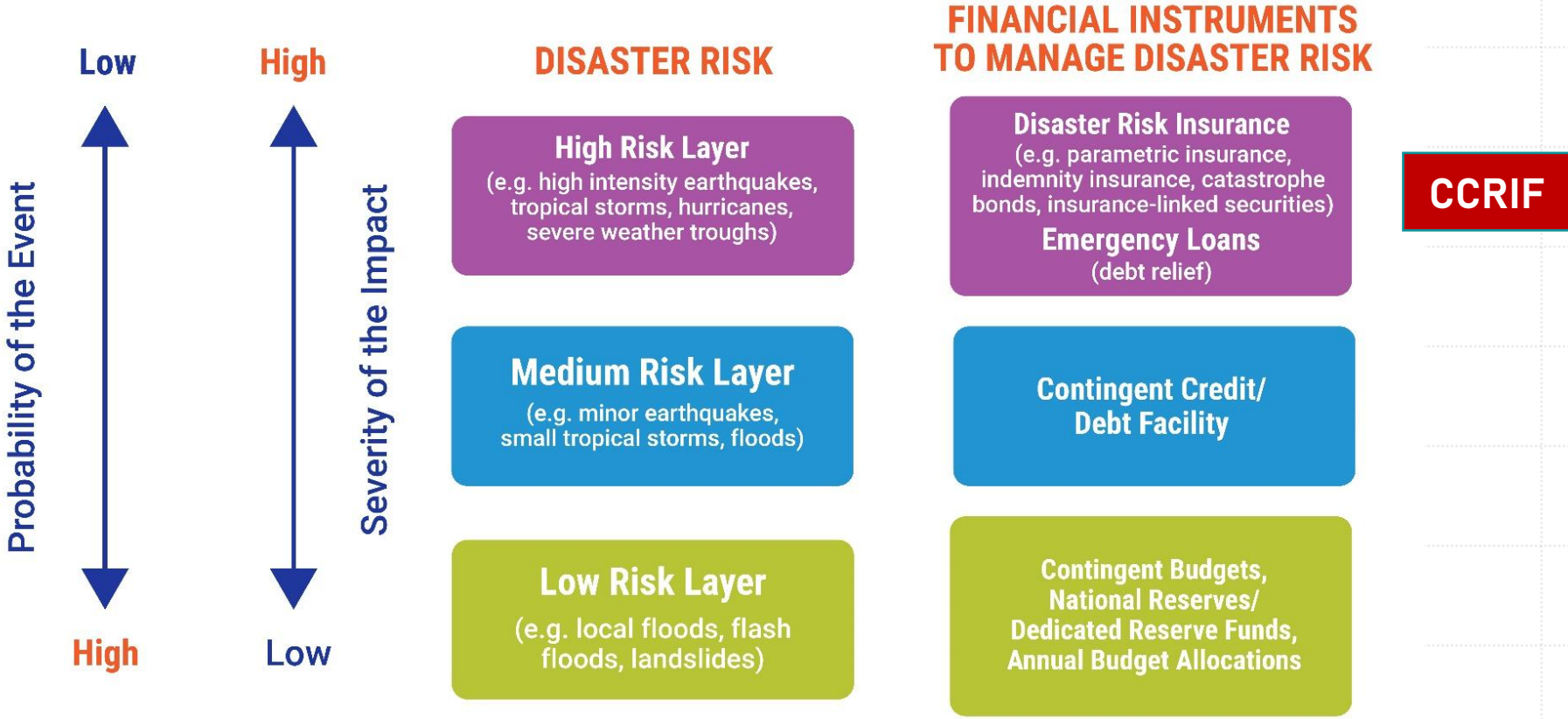
For Excess Rainfall Policies:

Wet season trigger (WST), which introduces the ability to detect excess rainfall events that occur when the soil is saturated

Localized event trigger (LET) for extreme localized events.

These endorsements are aimed at improving CCRIF's ability to identify and provide coverage for events that occur under very specific conditions that contribute to the negative impacts from the event.

Positioning of CCRIF Among other Disaster Risk Financing (DRF) Instruments



Risk Layers and Corresponding Disaster Risk Management Instruments

The CCRIF Technical Assistance Programme... Supports Climate Change Adaptation Efforts across Member Countries

By supporting activities related to:

- Ecosystem rehabilitation
- Use of nature-based solutions and soft engineering solutions
- Small engineering projects (sea walls, etc)
- Research Work (e.g. Integrating Soil Properties Data into Flood Risk Assessments)
- Development of Apps using AI – Letzfarm
- Education, training and capacity building
- Application of techniques and tools to support climate smart agriculture etc.



<https://www.ccrif.org/ta-programme>

Closing... CCRIF's Promise

- We are committed to improving the resilience of the Caribbean (including Guyana and Suriname) and Central America to climate change and natural hazards.
- By this we mean increasing the ability of governments to reduce the negative impacts of natural hazards on their economies and societies.
- We view comprehensive disaster risk management (CDRM) as an integral component of regional development and our parametric insurance products as a critical part of countries' CDRM strategies... and key to financially protecting economies.
- This commitment is explicit in CCRIF's vision statement, which is:
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.

Learn more about CCRIF: Scan the Code





In Closing
CCRIF is
essentially
about...

- providing quick liquidity.
- allowing governments to quickly support the most vulnerable in their population immediately after a natural disaster.
- reducing budget volatility.
- offering diverse products for both a range of perils and economic sectors and industries.
- offering products and services not readily available in traditional insurance markets.



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