CCRIF SPC
The Caribbean Catastrophe Risk Insurance Facility

Caribbean Regional Technical Workshop on CCRIF Models

Session 1:
CCRIF Parametric Insurance and How it Works....Linking Parametric Insurance with Debt and Fiscal Sustainability

With financial support from the European Union in the framework of the Caribbean Regional Resilience Building Facility, managed by the Global Facility for Disaster Reduction and Recovery (GFDRR)

CARIBBEAN REGIONAL RESILIENCE BUILDING FACILITY
A partnership funded by
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The Hazard Landscape in the Caribbean

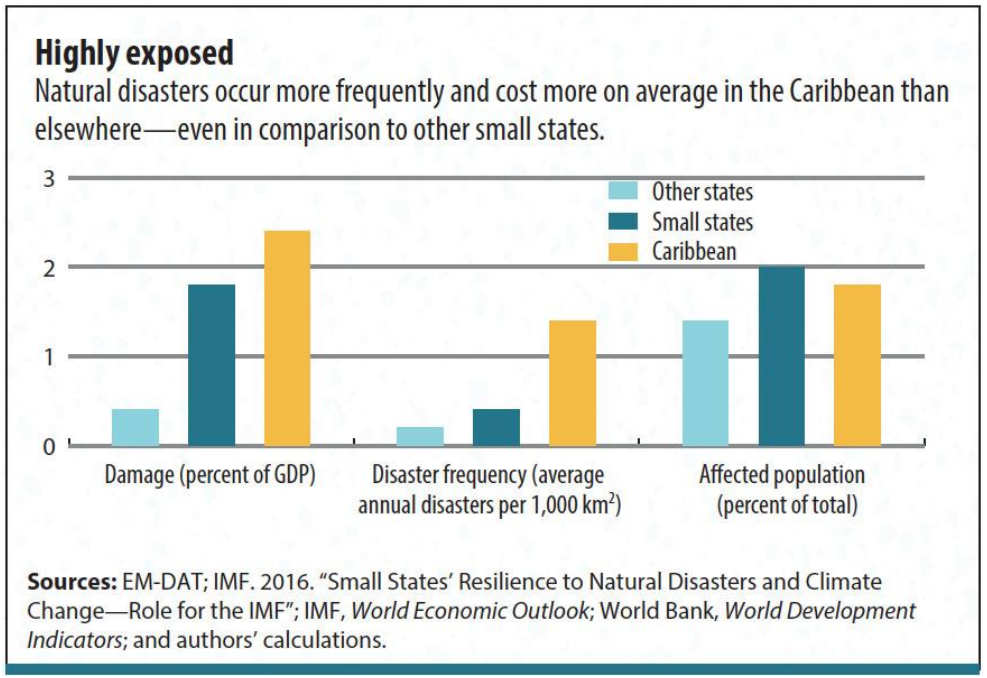
- Vulnerable to storms, tropical cyclones, flooding, landslides, earthquakes, tsunamis etc.
- Intrinsic economic, environmental and social vulnerability, limited natural resource base, significant competition between different kinds of land use, a high level of dependence on major economic sectors that rely on the natural environment, fragile ecosystems, limited institutional capacity and low levels of insurance coverage
- High concentration of people and infrastructure located in the coastal zones, further increasing vulnerabilities to hydro-meteorological events and climate change
- Multi-hazard environment

Natural Hazards	Manmade Hazards	Biological/Healt Related Hazards
Meteorological and Hydrological: • Tropical cyclones (tropical storms and hurricanes) • Rainfall, including severe rainfall events • Lightning • Extreme heat and increasing temperatures • Floods • Drought • Sea-level rise **Geohazards:** • Earthquakes • Mud Volcanoes • Tsunamis • Submarine volcanic eruptions **Environmental:** • Land degradation • Coastal erosion/Coastal inundation • Soil erosion • Landslides • Sahara dust • Sargassum • Coral reef degradation	**Chemical:** • Oil spills • Transboundary movement of hazardous materials/ wastes **Technological** • Road, aviation, and nautical accidents • Industrial accidents • Infrastructure Failures • Fires (bush and forest fires) • Burning dumpsites and landfills **Societal:** • Fires • Terrorism • Cybercrimes/cyber security gaps • Societal unrest	**Biological:** • Human disease outbreaks, epidemic pandemics • Animal (livestock) ar plant (agricultural) epidemics • Other biological/physical hazards such as poisoning, eutrophication, air pollution

Natural disasters continue to cause significant impacts to the economies of the Caribbean…

Latin America and the Caribbean (LAC)
is the **second most disaster-prone region in the world**

152 million
affected by **1,205 disasters** (2000-2019)*



resulting in:

- Higher fiscal deficits
- Trade deficits
- Negative impacts on industries such as tourism and agriculture
- Increases in poverty levels
- Negative impacts on economic growth prospects
- **Need for quick liquidity**

330
STORMS

- An average of **17 hurricanes per year and 23 Category 5 hurricanes** (2000-2019).
- The 2017 hurricane season is the **third worst on record** in terms of number of disasters and countries affected as well as the magnitude of damage.
- In 2019, Hurricane Dorian became the **strongest Atlantic hurricane** on record to directly impact a landmass.

2004 **Ivan**

200%
of Grenada's GDP

1989 **Hugo**

434%
of Montserrat's GDP

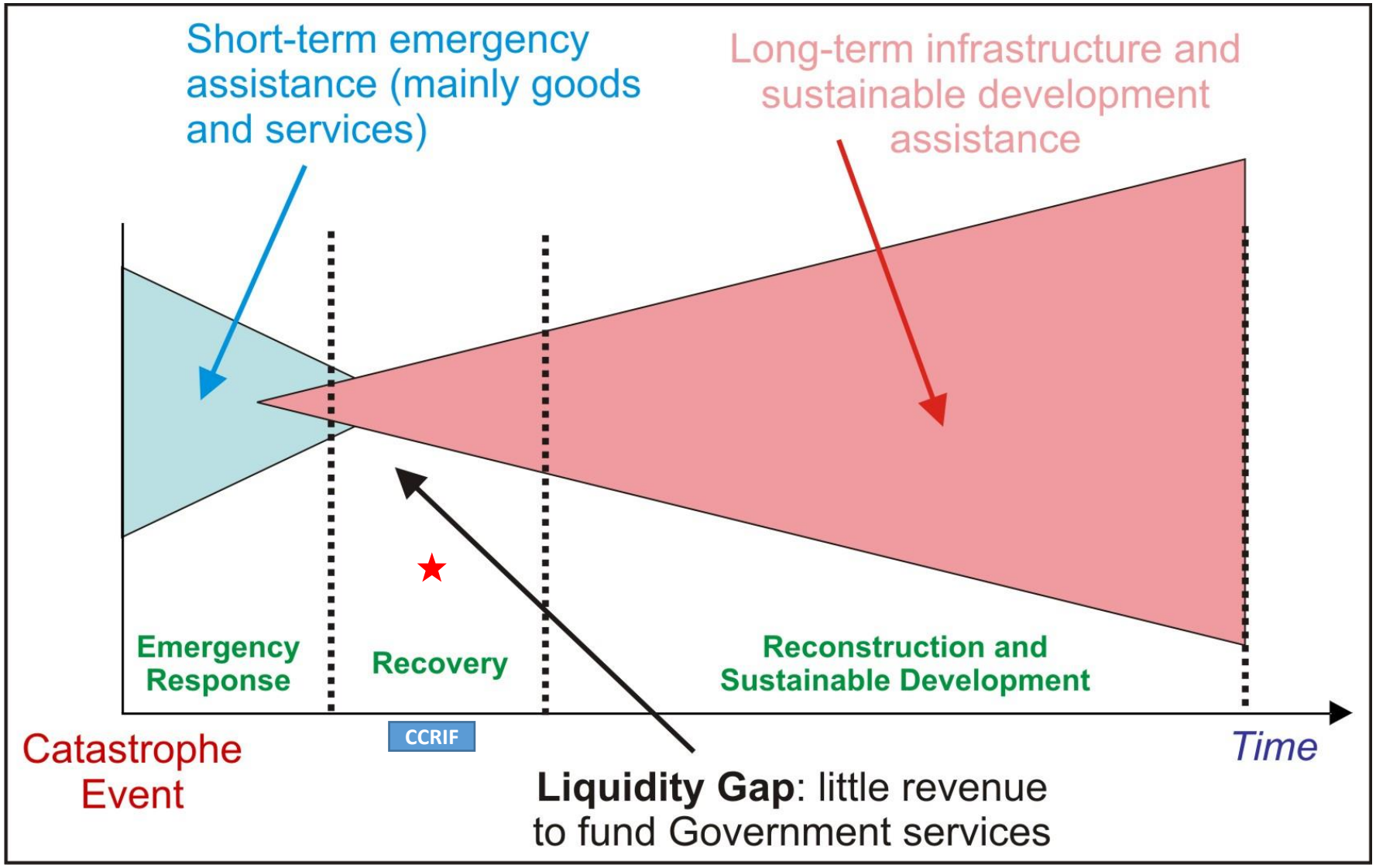
2015 **Erika**

96%
of Dominica's GDP

2017 **Maria**

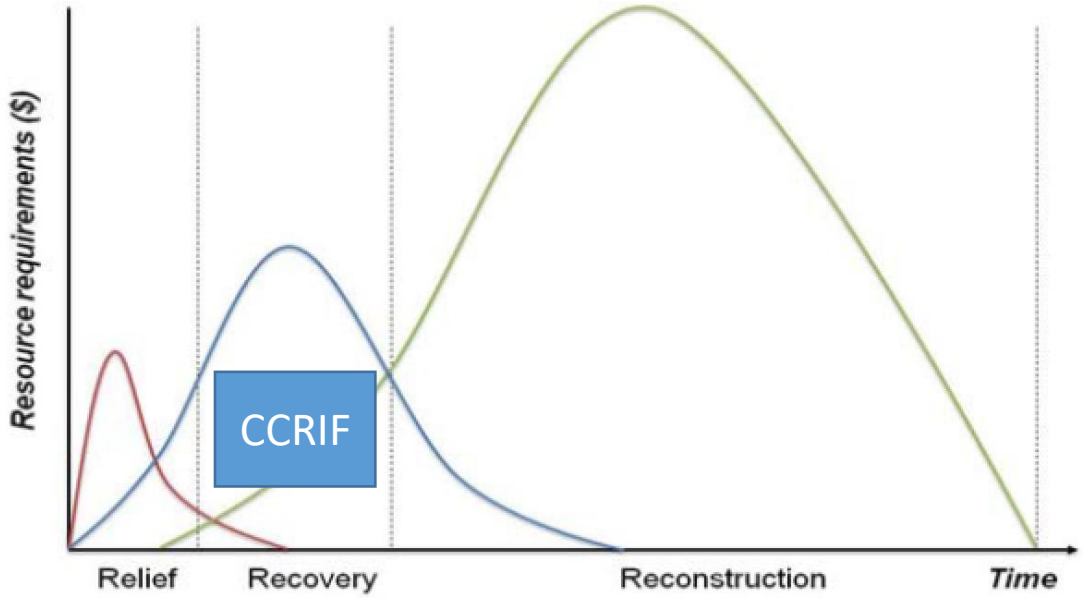
225%
of Dominica's GDP

After A Disaster: Sovereign Liquidity Gap



Main Phases of Post Disaster Funding Needs

The design of an efficient financial protection strategy must consider this time dimension to ensure that funding requirements are matched with the capacity to disburse funds when required



CCRIF occupies that critical space in post diester needs assessment between immediate relief (0 – 5 days after event) and long term reconstruction and recovery

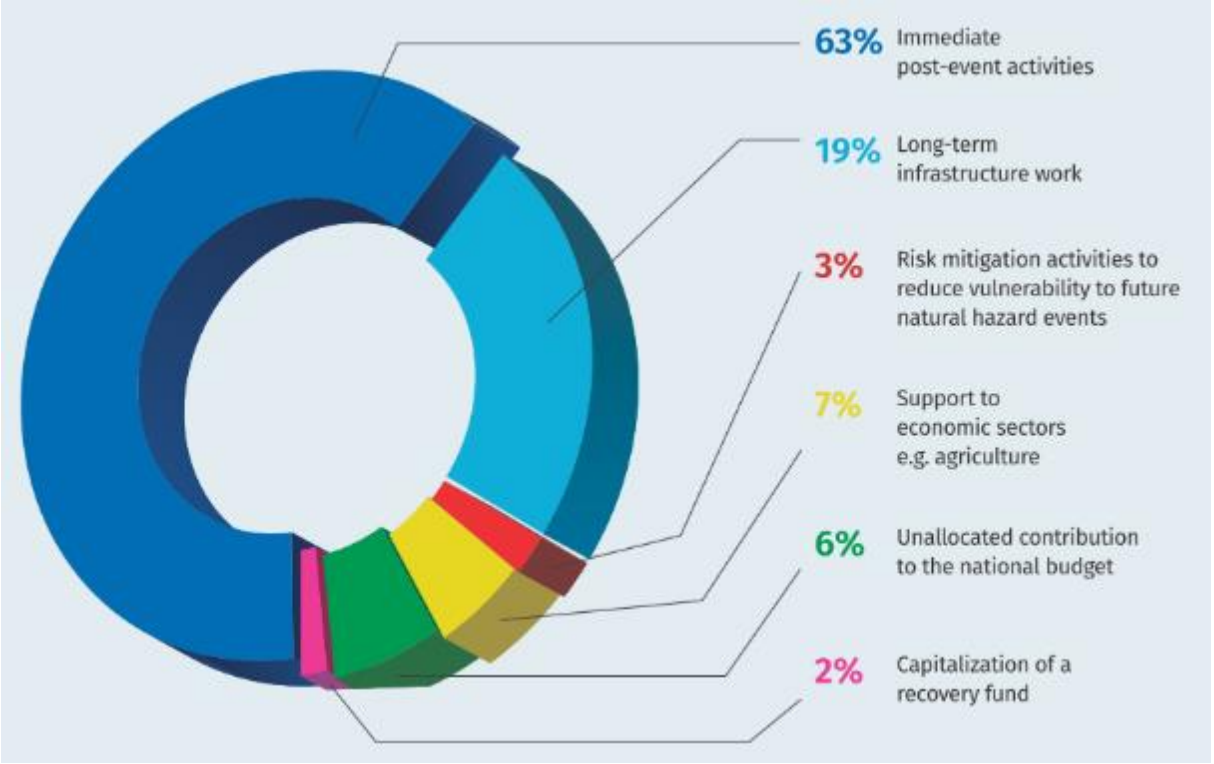
Linking Fiscal Policies with DRM

- Natural disasters and financial crises are typically exogenous events that represent covariate shocks across a country and households
- The impacts from natural hazards continue to outpace investments to strengthen homes, businesses, and other critical infrastructure.
- Economic damages from natural hazards can jeopardize the health of national economies at a level comparable to or greater than that of financial crises
- Natural disasters also destroy human and physical capital stocks of countries – something that financial crises do not

CCRIF:

- Is the world's first and most successful multi-country, multi-peril risk pool based on parametric insurance
- Is a development insurance company – as the goods and services we provide are designed to enhance the overall developmental prospects of our members
- Offers products not readily available in traditional insurance markets
- Provides parametric insurance - a key component in a country's disaster risk financing strategy and is designed to pre-finance short-term liquidity, reduce budget volatility and allow countries respond to their most pressing needs post disaster
- Provides quick liquidity allowing governments to quickly support the most vulnerable in their population immediately after a natural disaster

58 payouts totalling US$260 million made to 16 member governments… within 14 days of the event



Approximately 3.5 million persons have benefitted from CCRIF payouts since 2007.

Uniqueness of CCRIF - Parametric Insurance Policies

- 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, earthquake intensity, and volume of rainfall) and the amount of loss calculated in a pre-agreed model caused by these events.

- Parametric insurance enables payouts to be made very quickly after a hazard event.

- CCRIF represents a cost-effective way to pre-finance short-term liquidity to begin recovery efforts for an individual 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

Earthquake Policies

Tropical Cyclone Policies

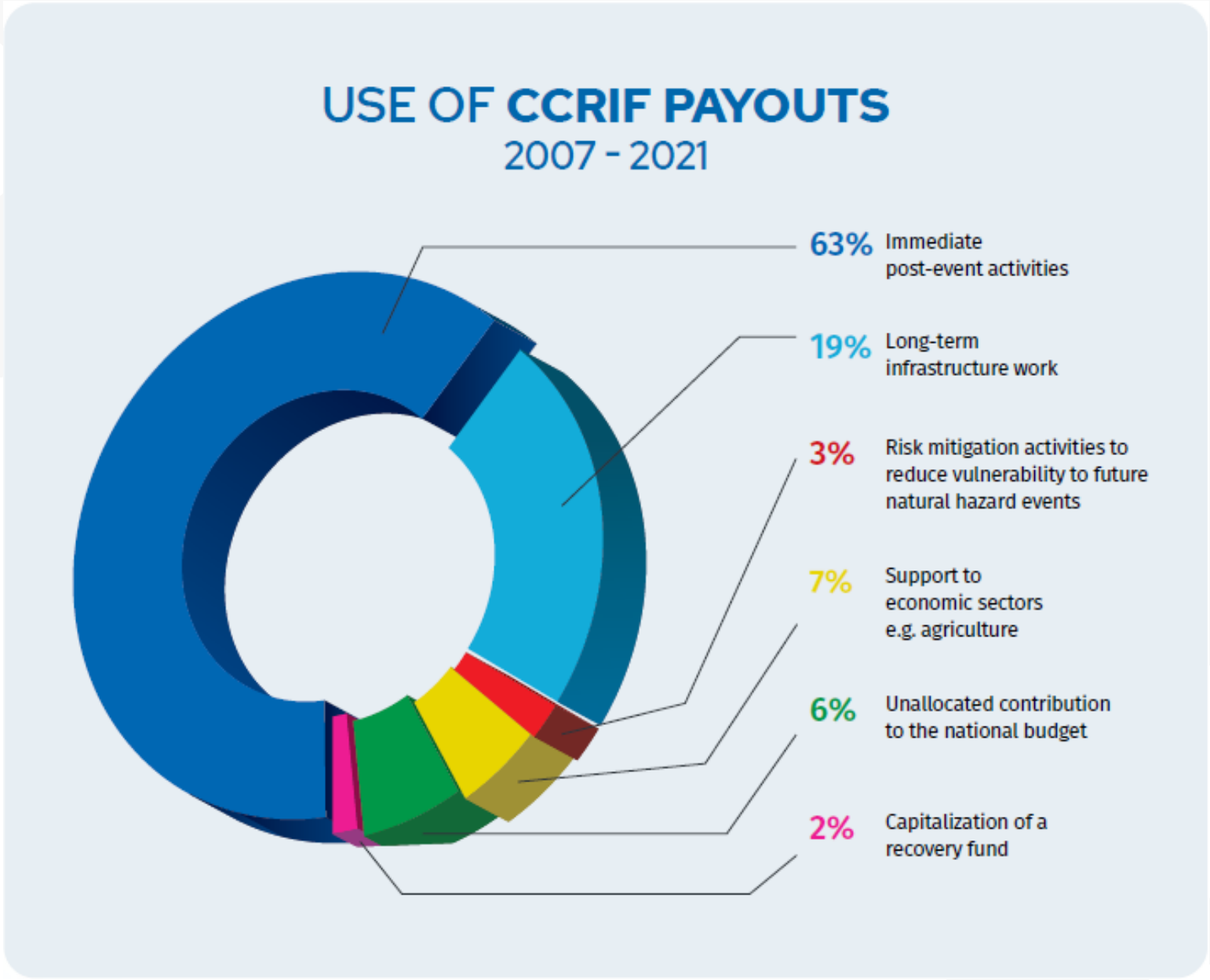
Excess Rainfall Policies

Fisheries Policy - COAST

Electric Utilities Policy

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



Since 2007, CCRIF SPC has made 54 payouts to 16 member governments totalling US$ 244,789,789.

- Single Largest Payout: Haiti – US$ 39,953,272 for August 14, 2021 earthquake
- Member receiving the largest number of payouts – Barbados – 6 in total
- Member receiving the largest value in payouts – Haiti – US$78.3 million

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 and 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.

As most of you are well aware, 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
- make 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

How CCRIF Policies Work

Parametric insurance disburses funds based on the occurrence of a pre-defined level of hazard and impact

Policy triggered on the basis of exceeding a pre-established trigger event loss

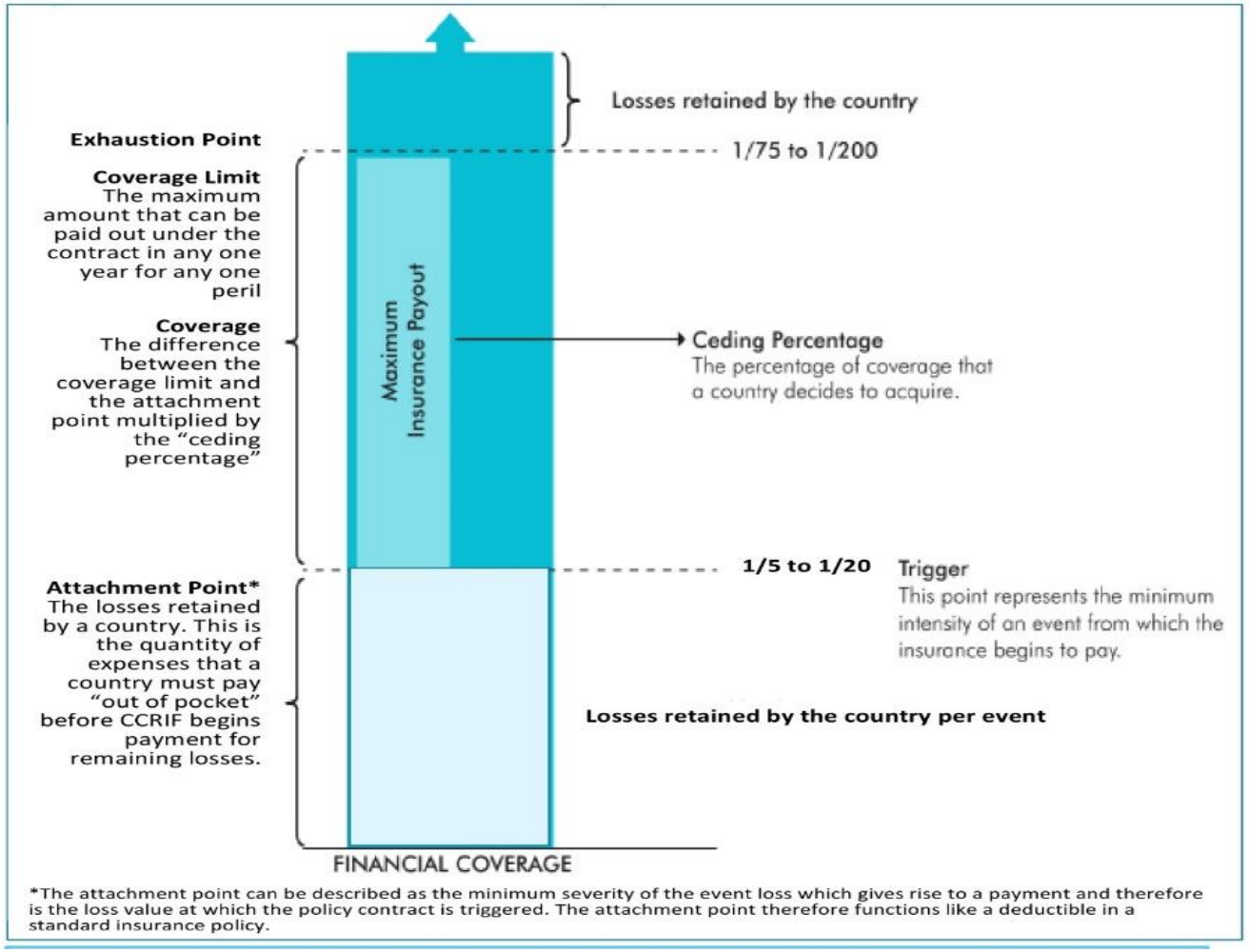
Estimated based on wind speed and storm surge (tropical cyclones), ground shaking (earthquakes) or volume of rainfall (excess rainfall)

Hazard levels applied to pre-defined government exposure to produce a loss estimate

Payout amounts increase with the level of modelled loss, up to a pre-defined coverage limit

CCRIF makes payouts within 14 days after an event.

Elements of CCRIF Policies



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

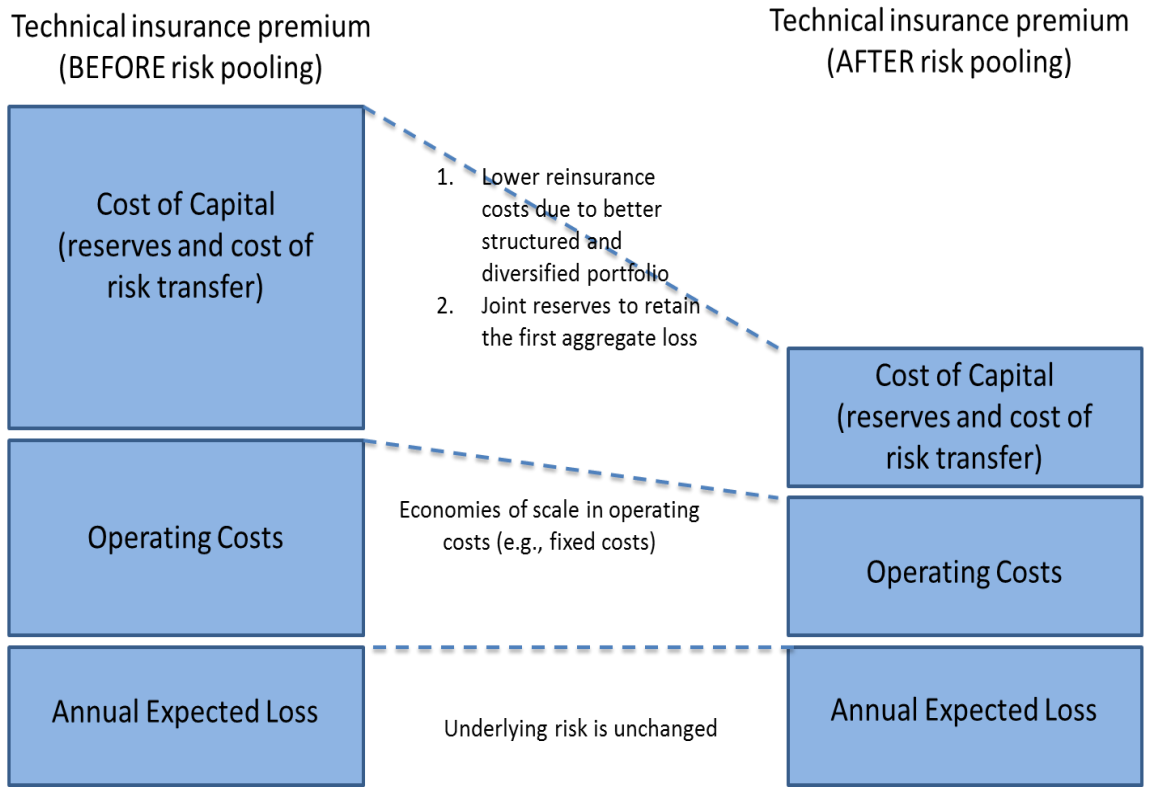
- **Attachment Point**
- **Ceding Percentage**
- **Exhaustion Point**

These are informed by the country's risk profiles

A country's policy is triggered when the modelled loss for a hazard event in that country equals or exceeds the attachment point specified in the policy contract.

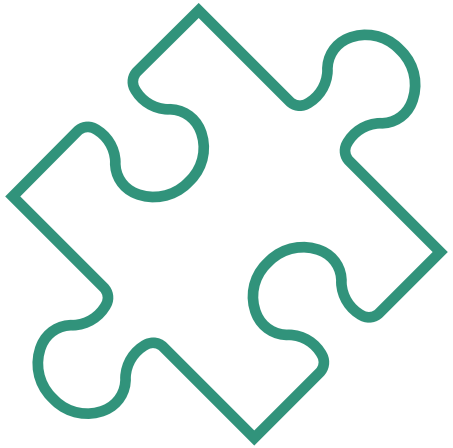
Benefits of CCRIF Model

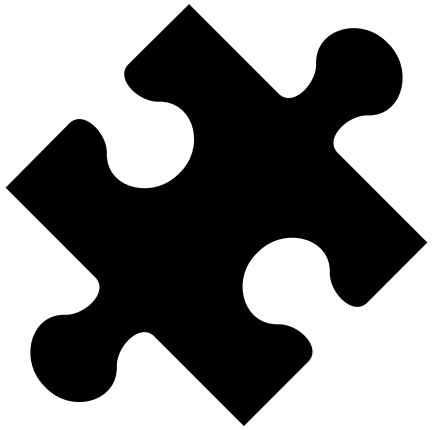
- Pooling of risk across a wide geographical area provides:
  - excellent diversification
  - pooling into a single reinsurance transaction improves access to and pricing from global markets
  - parametric policies allow total objectivity/ transparency and rapid payouts (14 days after an event)
- Pricing based on technical risk avoids cross-subsidization
- Insurance obtained through CCRIF could be as low as half the cost of coverage a member country could obtain on its own



Parametric insurance avoids moral hazard, so can work in full synergy with risk reduction and other tools as part of a holistic catastrophe risk management programme.

Some Challenges





- **High deductible** means that it only covers major catastrophe events in which national economies are severely impacted, and also currently only reaches the national government (not necessarily the most vulnerable people – except with products such CCRIF's COAST policy for fisheries)
- **Basis risk** means that events can occur which produce significant losses but no payout (and the opposite is possible)
- **Concept of parametric** is not well understood, so clients still expect their 'insurance policy' to cover everything
- **Scale of the risk currently retained is daunting** when converted to annual premium, even at good rate
    - demonstrating that an appropriate place for risk transfer is as a complement to other DRF tools, and DRM initiatives and actions
- The need to develop hazard/risk models in regions with little historical data
- The need to drill down to the local level and ensure payouts reach vulnerable individuals

Insurance Products for Vulnerable Populations in the Caribbean – Linking Macro and Micro Insurance Mechanisms

Two main products available in the Caribbean supported and/or developed by CCRIF:

- **Microinsurance-type product developed for fishers under COAST Project with support from Governments**
- **Leading the Transition Phase of the Climate Risk Adaptation and Insurance in the Caribbean (CRAIC) Project (Livelihood Protection Policy - LPP)**

Climate Risk Insurance (Microinsurance) in the Caribbean

COAST INSURANCE

A parametric insurance product providing quick payouts for the fisheries sector

Supports the livelihoods of fishers and others in the fisheries industry

Designed to support governments' efforts to rapidly put money into the hands of those impacted by extreme weather, 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

C|O|A|S|T

In force since July 1st, 2019 - In Grenada and Saint Lucia
Additionall countries to come on board in 2023
First of its kind in the world

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
- not increasing the debt stock of countries – parametric insurance will not result in an increase in debt stock as it is not a form of disaster relief as are credit facilities
- 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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