



CCRIF *News*

CCRIF, A NOT-FOR-PROFIT COMPANY, IS THE FIRST AND ONLY
MULTI-COUNTRY RISK POOL IN THE WORLD

CCRIF Pays out US\$12.8 Million to Three Caribbean Countries Following the Passage of Hurricane Tomas

On November 17th, the Caribbean Catastrophe Risk Insurance Facility (CCRIF) completed insurance payments to the Governments of Barbados, Saint Lucia and St. Vincent & the Grenadines following the passage of Tropical Cyclone Tomas which passed close to these islands on October 30th and 31st, 2010.

CCRIF released to each country 50% of their payouts on November 7th, seven days after the storm's passage – well before the end of the customary 14-day waiting period for the release of payouts to countries. This early interim payment followed requests made by the three countries to the Facility. Prime Minister of St Vincent & the Grenadines, Hon Ralph Gonsalves said this early payment facilitated “urgent restoration of services and clearing of the affected areas.” Payouts to the countries were as follows:

- Barbados - US\$8,560,247
- Saint Lucia - US\$3,241,613
- St Vincent & the Grenadines - US\$1,090,388

Tomas was the 12th Hurricane of the 2010 Tropical Atlantic

Hurricane season. For Barbados, the entire island was affected by severe Tropical Storm force winds, with gusts to Hurricane force. Due to the track of Tomas directly over the island, these winds persisted at a high level for a relatively long time. Storm surge and wave action also were significant. Hurricane force winds affected the southernmost part of Saint Lucia as well as the northern and eastern areas of St

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Damage in Barbados following the passage of Tropical Cyclone Tomas (Photo from AP)

SPECIAL FEATURE: Climate Change and Insurance in the Caribbean

This article written by Dr. Simon Young, CEO of CaribRM, the Facility Supervisor of CCRIF, explores the linkages between climate change the insurance industry in the Caribbean. He concludes that the insurance industry is already playing and will continue to play a critical role in climate change adaptation across the Caribbean, bringing both the tools and expertise to assess and price climate risk and the innovative products required to assist countries, businesses and individuals to more cost-effectively manage that risk.

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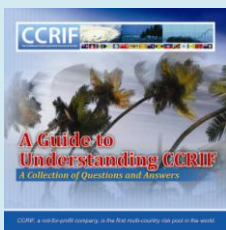
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CCRIF Publications ... helping to enhance the understanding of comprehensive disaster management in the Caribbean Region

The Caribbean Catastrophe Risk Insurance Facility recognises the importance of offering products and services that meet the needs of its members. This is actually one of six strategic objectives that are being pursued by CCRIF. In seeking to fulfil this objective, CCRIF has undertaken to establish and make available a knowledge bank of relevant and credible resource materials on risk transfer, CCRIF products and disaster risk reduction. Efforts are also made to increase access by all stakeholders to these information sources on a regular basis.

Over the last year and a half, CCRIF has published 4 key documents that the Facility believes would be of interest to persons involved in disaster management, finance and meteorology in the region. In addition, the Facility publishes its quarterly newsletter, *CCRIF News*. A synopsis of each of these publications will be provided here.

A Guide to Understanding CCRIF: A Collection of Questions and Answers



This guide to understanding CCRIF provides the reader with greater insights into the workings of CCRIF as a catastrophe risk transfer facility and its role in comprehensive disaster risk management in Caribbean countries. Readers will find information related to the purpose of CCRIF, the products

offered, how CCRIF works, how payouts are calculated, factors determining payouts, how the financial stability of CCRIF is sustained among others.

A Guide to Understanding the Real-Time Impact Forecasting System (RTFS)



This question and answer booklet has been designed as a reference resource to enable wider use of the RTFS and is intended for disaster and emergency managers and meteorological officers as well as other governmental and non-governmental agencies involved in hurricane risk management. The RTFS is a storm impact forecast tool which provides users with real-time hurricane hazard and impact information.

Caribbean Catastrophe Risk Insurance Facility - A Collection of Papers and Articles



The booklet presents four technical papers about the CCRIF and will help the reader to better understand catastrophe risk transfer facilities and their contribution as a key disaster risk

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management tool. Additionally, within the wider discussions on adaptation to climate change, the papers highlight why CCRIF is the only working model of a multi-national and parametric-based catastrophe risk pool and why it should be considered a viable template for expansion and/or replication globally.

“Enhancing the climate risk and adaptation fact base for the Caribbean...Preliminary Results”



This brochure provides the preliminary results for eight countries on a study on the Economics of Climate Adaptation (ECA) in the Caribbean. The brochure contains elements such as:

- Description of CCRIF's Economics of Climate Adaptation Initiative
- Key Regional Findings from the ECA Study;
- Country Results for: Anguilla, Antigua and Barbuda, Barbados, Bermuda, Cayman Islands, Dominica, Jamaica, St. Lucia
- Overview of Results of Analysis of the Agricultural Sector

Climate Change: Economic Impacts on the Caribbean Small Island States and Implications for Sustainable Development

Excerpts from a speech delivered by CCRIF Board Member Isaac Anthony, who is Permanent Secretary in the Ministry of Finance, Saint Lucia to the UN General Assembly Second Committee (Economic and Financial Committee)

It is well recognised and agreed that developing countries and small island nations like those in the Caribbean will be among the first and hardest hit by the predicted adverse effects of climate change. In short, the relative burden of additional climate risk the region faces is the highest in the world, while at the same time we have fewer resources to adapt socially, technologically and financially.

Climate change will likely lead to more frequent high-intensity hurricanes, and the warming ocean is already causing a rise in sea level and negative impacts on protective coral reefs. Caribbean countries, where the populations and infrastructure are largely concentrated in coastal areas and where a large proportion of economic activity is linked to the weather or the coastline, will be particularly vulnerable to stronger winds, greater inundation from more forceful storm surge and waves, and heavier rains. These anticipated climate changes will accelerate the erosion of coastal beaches, inundation of low-lying land and loss of protective mangroves. Coastal houses, hotels and other buildings, along with roads and other infrastructure, are vulnerable, as are those who live and work there.

Climate change is also expected to increase rainfall variability. Greater, and therefore more damaging, precipitation during storms and other peak periods will be juxtaposed with more frequent and longer droughts.

The vulnerability of CARICOM countries to climate events is already evidenced by the increasing impact of hurricanes, tropical storms, drought and flooding in the region. During just one hurricane in 2004, two Caribbean nations each suffered economic losses which totalled close to 200% of their annual GDP and a further 7 countries were also severely impacted. Regional losses totalled over 6 billion US dollars for the event.

Over the past year alone many countries in the region, including my own (St. Lucia), experienced drought, affecting access to water and resulting in a drop in agricultural productivity. At the other end of the rainfall spectrum,

Jamaica received extreme rainfall from a non-cyclonic system in late September causing damage to infrastructure alone which totalled more than one hundred and fifty million US dollars. Many other countries have been affected by heavy rain events during the current rainy season, again including my own Saint Lucia.

Preliminary findings of the Caribbean Economics of Climate Adaptation (ECA) Study, led by the Caribbean Catastrophe Risk Insurance Facility in collaboration with other Caribbean institutions and supported by McKinsey & Company and Swiss Re, confirmed that the damage potential under current climatic and economic conditions is already high, with annual expected losses totalling up to 6% of GDP in some countries. In a worst case scenario, climate change has the potential to increase these losses by 1 to 3 percentage points of GDP by 2030. For our islands, this is comparable in scale to the impact of a serious economic recession – but on an ongoing basis. Apart from the social and environmental disruption, the fiscal balance of these states is simultaneously severely undermined. At the national level this translates to cuts in revenue, an increase in spending needs, worsening public finances and increasing debt.

The central challenge for the region, in which many countries are striving to attain developed country status by 2030, is therefore to develop climate change adaptation strategies which allow for achievement of future developmental goals. The risks associated with doing nothing, taking a business as usual approach, are simply too severe to contemplate.

If Caribbean countries fail to adapt, they are likely to take direct and substantial economic hits to their most important sectors such as tourism, which depends on the attractiveness of the natural coastal environments and which is hugely dependent on coastal infrastructure, and agriculture (including fisheries), which is the most highly climate-sensitive sector throughout the world. These two sectors are the highest contributors to employment in many Caribbean countries, as well as being key economic engines, and so an inability to adapt to climate change will not only increase unemployment but have potentially debilitating social and cultural consequences to individual livelihoods, local communities and national development.

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Climate Change and Insurance in the Caribbean

Simon Young, BSc, PhD
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Facility Supervisor, Caribbean Catastrophe Risk Insurance Facility (CCRIF)



Insurance is a business which has the assessment and management of risk at its core. In all parts of the insurance industry, there is a need to price risk; insurance and reinsurance underwriters must set a price for taking on risk, and the insurance buyer (often represented by an intermediary or broker) must be able to judge whether that price is reasonable.

In the Caribbean, the general insurance business model (as opposed to the life insurance industry, which will not be further discussed here) is such that natural catastrophe hazards play a dominant part in risk assessment and management. Catastrophe hazards require particular attention because they do not follow the usual 'laws' of insurance; in particular, single events can cause losses to a large proportion of clients covered

by an insurance company simultaneously, especially if that company only underwrites risk in one or a few geographically neighbouring islands (as is common in the Caribbean). The need to be able to pay lots of claims all at once requires insurers either to purchase their own insurance, called reinsurance, which is expensive, or to hold a large amount of cash reserves, which is also expensive. Thus the cost of underwriting catastrophe risks, particularly in the Caribbean, requires particular attention to be paid to assessing that risk, both now and in the future.

Another feature of the Caribbean is the key role played by hydro-meteorological (water and weather) hazards in the cost of risk, hurricanes being the most obvious example. At all scales, from national governments to individuals,

hurricanes are an immense source of both social and economic risk. However, coastal waves and storm surge, flooding and landslides triggered by heavy rainfall, and droughts caused by lack of rain, are also the source of considerable risk. Any changes to the frequency or intensity of these risky events is of great interest to insurance companies and their reinsurers, particularly on a year-to-year basis but also over longer time periods.

Even if insurers themselves do not think the assessment of changing risks in the face of climate change is important to their business, the regulators of the insurance industry are increasingly moving to risk-based metrics to judge the long-term sustainability of insurance companies. Although most advanced in Europe, such risk-based regulation will undoubtedly be implemented in the Caribbean before too long, and the assessment of climate change risks will become a necessary part of insurance industry operations.

In addition to the direct impacts of climate change on the Caribbean insurance industry, the tools on which the industry already relies are the same tools that are critical to successfully managing climate change risk. In the language of climate change, managing the new conditions resulting from global warming is termed 'adaptation', and putting a price on current and future risk is critical to successful and cost-efficient adaptation. Adaptation must involve a reduction in climate risk – if not now then going forward in terms of development planning. Climate risk is already very high in the Caribbean, and two of the major economic engines, tourism and agriculture, are both highly climate-exposed. Development needs to become more 'climate-smart' throughout the region, but with climate change bringing additional future climate risk, sustained growth without adaptation to the future hazard landscape will not be achieved.

While reducing current and future risk must be a priority, there is a threshold at which investment in risk transfer (paying someone else to take the risk rather than bearing the cost oneself) is more cost-efficient than risk reduction.

Insurance is the most common form of risk transfer, although a new suite of instruments, largely available in the capital markets and known collectively as 'alternative risk transfer' have been developed to complement traditional insurance. Broadening access to risk transfer is thus a necessary part of climate change adaptation.

In this context, the Caribbean has been at the forefront of developing new risk transfer tools to address climate change risk. The Caribbean Catastrophe Risk Insurance Facility (CCRIF) is a first-of-its-kind government risk-sharing platform, aimed at assisting member countries to manage part of their catastrophe risk exposure. As highlighted earlier, catastrophe risks are those which generate many losses simultaneously. For almost all governments in the Caribbean, a direct hit by a major hurricane is the largest single risk its economy, and thus its society, faces. While great strides have been made across the region in reducing the societal impacts of hurricanes and other natural hazard events in the past several decades, the economic aspects of such catastrophes had gone largely un-managed. Reliance on post-disaster assistance from donors was the plan. With CCRIF, the governments have developed a mechanism which enables them to share their risk, with payouts available when most needed. The success of CCRIF (which recently paid out almost US\$13 million to 3 countries in the eastern Caribbean within 2 weeks of the passage of Hurricane Tomas) has catalysed other initiatives to bring innovative risk transfer solutions to other sectors of industry and the population at particular risk, for example in the agricultural sector and to support micro-finance lending.

In conclusion, the insurance industry is already playing and will continue to play a critical role in climate change adaptation across the Caribbean, bringing both the tools and expertise to assess and price climate risk and the innovative products required to assist countries, businesses and individuals to more cost-effectively manage that risk.

CCRIF Calendar of Events

Visit our website at www.ccrif.org to view our calendar of events

CCRIF Board Member, Dr. Warren Smith to take up Presidency of the Caribbean Development Bank (CDB)

The Board and Team of the Caribbean Catastrophe Risk Insurance Facility would like to congratulate CCRIF Board Member Dr. Warren Smith on his appointment as the fifth president of the Caribbean Development Bank. Dr. Smith will officially take up his duties on May 1, 2011. He was elected at a special meeting of the Governors of the Bank held on Friday October 29th, 2010. Dr. Smith, a national of

Jamaica, is currently acting in the capacity of Vice-President of Operations at the CDB.

He was appointed to the CCRIF Board by the CDB at the inception of the Facility in 2007. Below are some highlights of Dr. Smith at work with CCRIF.



Ms Wazita Scott converses with Dr. Smith, at his office at the Caribbean Development Bank in August 2010. At this meeting, Dr. Smith presented Wazita with a scholarship under the CCRIF Scholarship Programme. They discussed her upcoming programme of studies as well as the work of CCRIF and linkages between the two.



Dr. Smith looks on as Mr. Jeremy Collymore, Executive Director, CDEMA and Mr. Milo Pearson, Chairman of CCRIF shake hands on the signing of the MOU between their two agencies in August 2009. This MoU formalised a partnership to facilitate capacity building and to develop strategies for mitigating the physical and socio-economic impacts of natural disasters on countries in the region.



From left: CCRIF Chairman Milo Pearson, CIMH Principal Dr. David Farrell, Acting Permanent Secretary Ministry of Agriculture in Barbados Barton Clarke, Kinetic Analysis Corporation CEO Dr. Jan Vermeiren and Dr. Smith at the official launch of the CCRIF/CIMH regional rainfall model in February 2010. This synthetic rainfall generation model will enable the finalisation of the excess rainfall product and thus the provision of excess rainfall insurance policies for countries in the region in 2011.

About CCRIF

CCRIF is a risk pooling facility, owned, operated and registered in the Caribbean for Caribbean governments. It is designed to limit the financial impact of catastrophic hurricanes and earthquakes to Caribbean governments by quickly providing short-term liquidity when a policy is triggered. It is the world's first and, to date, only regional fund utilising parametric insurance, giving Caribbean governments the unique opportunity to purchase earthquake and hurricane catastrophe coverage with lowest-possible pricing. CCRIF represents a paradigm shift in the way governments treat risk, with Caribbean governments leading the way in pre-disaster planning. CCRIF was developed through funding from the Japanese Government, and was capitalised through contributions to a multi-donor Trust Fund by the Government of Canada, the European Union, the World Bank,

CCRIF Vision

CCRIF will be a key partner with the Caribbean region in its disaster risk management strategies to support long-term sustainable development goals.

CCRIF Mission

Our Mission is to serve Caribbean governments and their communities in reducing the economic impact of natural catastrophes. We provide immediate liquidity through a range of affordable insurance products in a way that is financially responsible and responsive to their needs.

CCRIF Payout following Hurricane Tomas...

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Vincent. The southwestern parts of St Vincent avoided hurricane force winds due to the protective effect of the interior mountains. The Grenadines received Tropical Storm force winds, high in the north, minimal towards the south of the chain.

The CCRIF model generated substantial government losses in Barbados, Saint Lucia and St Vincent & the Grenadines. Barbados endured the biggest actual loss (as it is a significantly bigger economy than the other two) as well as the biggest loss relative to GDP (just over 1.5%), the latter due largely to the fact that near-hurricane force winds affected the entire Island and due also to high coastal exposure. Both Saint Lucia and St Vincent & the Grenadines endured modelled losses of around half of one percent of GDP.

On leaving the Eastern Caribbean, Hurricane Tomas entered the Caribbean Sea as a Category 2 Hurricane. The presence of dry air and southwesterly shear, however, weakened Tomas to a Tropical Storm on November 2nd. By November 5th, Tomas had re-strengthened to a Hurricane as it approached Jamaica, Haiti and the southern islands of the Bahamian chain, including the Turks & Caicos Islands. Both Haiti and Jamaica were

spared major impact from Tomas, as the storm took a direct path through the Windward Passage between the two islands before passing through the southern Bahamas and the central Turks & Caicos Islands as a weakening Tropical Storm.

CCRIF offers parametric insurance and therefore payouts can be calculated and made very quickly because there is no requirement to assess damage on the ground after an event. Payouts for tropical cyclones are determined based on government losses calculated using storm data from the National Hurricane Center and parameters fixed within the loss estimation model used to underpin CCRIF's policies. The model calculates the level of wind and ocean hazards, such as storm surge, encountered across the affected area and uses the pre-fixed value and distribution of government exposures to those hazards to calculate a loss. The specific payout totals are based on the level of coverage a country has. Each individual country chooses its own coverage options in terms of the attachment point (deductible), exhaustion point (coverage limit), and premium. The amount of the premium then dictates how much of the risk between the attachment and exhaustion points they are actually covered for.

Climate Change: Economic Impacts on the Caribbean...

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Therefore, for the Caribbean, adaptation, rather than mitigation, has to be our primary focus. Adaptation strategies must become the mechanism to manage risks, adjust economic activity to reduce vulnerability, and improve business certainty. It must be recognised that adaptation must be perceived in the long-term as it will take time to quantify risks of climate change and to build capacity to minimise costs and to take advantage of any benefits. Adaptation mechanisms could range from infrastructural (for example building coastal defences), through behavioural (for example altered food and recreational choices) and managerial (for example altered farm practices) to policy (for example planning regulations). In fact, there is no clear picture of the limits to adaptation, or the costs, and this is partly because effective adaptation measures are highly dependent on specific geographical and climate risk factors as well as institutional, political and financial constraints.

As I focus on adaptation strategies for climate change I must, at this point, speak to the Caribbean Catastrophe Risk Insurance Facility (CCRIF) within the context of climate change. The CCRIF model represents an innovative risk transfer option, which can be included in disaster risk management strategies for countries vulnerable to hurricanes, earthquakes and other natural catastrophe events, and can be a critical component of a country's climate change adaptation strategy. As we recognise the urgent need for adaptation, we also see that a wide variety of tools are needed. While we focus primarily on reducing our exposure to climate risks through climate-smart development, we must nevertheless understand the fact that not all risk can be fully mitigated, and that risk transfer solutions such as CCRIF provide a cost-efficient route to reducing the huge negative consequences of individual catastrophe events across the region.

As I close, I encourage you, in working with small island states and in setting your agendas, to remember that SIDS need lasting adaptation strategies that can help to provide security for the livelihoods of our peoples and protection against an ever changing and increasingly unpredictable and hostile climate.

CARIBBEAN CATASTROPHE RISK INSURANCE FACILITY



CCRIF Provides Sponsorship and Participates in the 5th Annual Caribbean Conference on Comprehensive Disaster Management



As in the last two years, CCRIF is a key supporter the Annual Caribbean Conference on Comprehensive Disaster Management. This year, CCRIF will sponsor up to 30 participants from the finance and meteorological sectors from its member states to attend the conference. CCRIF will host one of the Professional Development Sessions (PDS) and open participation in this session to over 50 persons. The theme of the CCRIF PDS *"The Real-Time Impact Forecasting System (RTFS) as a Tool in Disaster Planning and Mitigation,"* is intended to provide CCRIF members and other key stakeholders with an improved understanding of how the RTFS can be used during the Atlantic Hurricane Season and how it supports disaster planning and management. Participants in the PDS also will be able to provide feedback on the use of the tool during 2010 Atlantic Hurricane Season and share experiences with other persons in the region. CCRIF will take this opportunity to also seek feedback on ways in which the RTFS tool could be enhanced and/or made more user-friendly. Last year's CCRIF PDS attracted some 60 participants.

On day three, Ekhosuehi Iyehen of CaribRM, the Facility Supervisor of CCRIF, will present the preliminary results of the Economics of Climate Adaptation (ECA) Study conducted in eight Caribbean countries. The study, led by CCRIF, with CaribRM acting on behalf of the Facility, and supported by regional partners the Caribbean Community Climate Change Centre, UN-ECLAC and others. McKinsey & Company and Swiss Re provided analytical support. Findings from the study indicate that annual expected losses from wind, storm surge and inland flooding already amount to up to 6% of GDP in some countries and that, in a worst case scenario, climate change has the potential to increase these expected losses by 1 to 3 percentage points of GDP by 2030.

CCRIF will also participate in the Exhibition and at its booth will provide conference participants with many of its recent publications as well as other useful materials and information. CCRIF's sponsorship and active involvement in this conference is aligned to a Memorandum of Understanding signed between CCRIF and the Caribbean Disaster and Emergency Management Agency (CDEMA) in August 2009. The MoU formalised a partnership to facilitate capacity building and to develop strategies for mitigating the physical and socio-economic impacts of natural disasters on countries in the region.



Sixteen governments are currently members of CCRIF:

Anguilla, Antigua & Barbuda, Bahamas, Barbados, Belize, Bermuda, Cayman Islands, Dominica, Grenada, Haiti, Jamaica, St. Kitts & Nevis, St. Lucia, St. Vincent & the Grenadines, Trinidad & Tobago and Turks & Caicos Islands

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