



CCRIF *News*

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

CCRIF Hosts Regional Workshop on Economics of Climate Adaptation

On 12 and 13 May, over 50 representatives from Caribbean governments and international agencies met in Barbados to discuss the initial results from a recent investigation into the Economics of Climate Adaptation (ECA) in the Caribbean. This study, funded by the Caribbean Catastrophe Risk Insurance Facility as part of its technical assistance programme, was launched in February to enhance the development of a fact base for developing sound climate change adaptation strategies in the region.

Since the launch of the project, a team composed of Caribbean Risk Managers (CaribRM) on behalf of CCRIF, the Caribbean Community Climate Change Centre (5Cs) and other regional partners, has been intensely involved in data collection and analysis for a number of countries with

analytical support provided by McKinsey & Company and Swiss Re.

The workshop, which was held at the Caribbean Development Bank, provided an introduction to the Economics of Climate Adaptation approach and its application in the Caribbean and focussed on:

- sharing the preliminary findings of the study with the participants
- examining the key insights and results for wind, sea level rise/coastal flooding, inland flooding and salinisation of groundwater

The final outputs of this study will include a risk baseline

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SPECIAL FEATURE ON RTFS

The RTFS, or Real-Time Impact Forecasting System, is provided by CCRIF to its members to enable them to access real-time estimates of the expected hazard levels and impacts on population for all tropical cyclones. This real-time service will provide enhanced value to participants through improving their understanding of hurricane risks and also through providing valuable real-time information to emergency and disaster managers, meteorologists, and finance/economy and policy-making officials.

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CCRIF Members Set to Renew Policies for 2010/11 Year

Members of CCRIF are set to renew their policies for this upcoming policy year. CCRIF's renewed coverage will begin from June 1, 2010.

Between February and April, CCRIF's Facility Supervisor, CaribRM, met with, and discussed with country representatives the renewal process, price quotations and the new features of CCRIF hurricane and earthquake insurance policies.

Lobbying efforts on behalf of CCRIF participants also commenced in order to identify potential donor/financing support for countries.

In recognition of the exceptional fiscal challenges which the region continues to face this year, the CCRIF Board also approved the release of up to half of the participation fee paid by each country to help cover premium payments (limited to half

of the total premium paid; i.e. at least equal matching funds would be required).

CCRIF also reduced the pricing multiple, by a little over 10%, for the third successive renewal. This, along with the introduction of the CCRIF second generation model, contributed to an increase in coverage limits in most country renewal quotes.

The modelling basis for this year's policies has been changed to the CCRIF Second Generation Hazard and Loss Modelling platform. With this model the Facility will be better able to meet the catastrophe insurance needs of its members, offer additional products beyond hurricane and earthquake coverage, and expand beyond the present number of clients. Other benefits of the new model include: a reduction in the basis risk inherent in the loss indexing approach used in the first

generation model; and, because the second generation model is built on techniques published in the scientific literature, it promotes a better understanding of the loss modelling process.

During the renewal process, CCRIF country contacts were encouraged to consider alternative coverage characteristics (attachment/exhaustion points) or premium levels (either in total or a change in distribution between earthquake and hurricane). Country representatives were provided with draft country risk profiles for their country as well as an 'adequacy analysis' related to their coverage.

Once again the Board and CCRIF Team look forward to serving its members in the most efficient and effective manner.

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, 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 governments.

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 ECA Workshop



Participants at the ECA workshop

(Source: The Barbados Advocate)

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which will provide transparency about current and future expected losses from climate risks under three climate change scenarios; and assessment of adaptation measures – identification of feasible and applicable measures to adapt to the expected risks based on quantitative analysis of total cost and expected benefits of risk mitigation and transfer measures.

The results of the study will assist decision makers throughout the Caribbean region in defining and developing sound adaptation strategies and business cases which can be incorporated into national development plans. The recent climate change conference in Copenhagen reconfirmed the commitment to provide funding and technical assistance for climate adaptation to developing countries. The ECA study will help Caribbean leaders develop programmes that will be strong candidates for adaptation assistance.

CCRIF sponsored the participation of representatives from disaster management, finance and planning agencies from CCRIF member countries. Other participants included representatives of 5Cs, ECLAC, UNDP, IDB, DFID, and IICA. Presenters included Mr Milo Pearson, Chairman of CCRIF, Dr Norman Cameron of the CDB, Mr Marcel Normann and Mr. Coenraad Vrolijk from McKinsey & Co., and Dr David Bresch from SwissRe.

The innovation of the ECA methodology lies in its positioning across different knowledge sectors, spanning climate science, the financial industry and economic research. The analysis is based on joining four main elements:

1. Climate change scenarios based on the most recent available scientific evidence
2. Hazard models forecasting the occurrence of hurricanes or other damaging events
3. Economic damage functions linking the intensity of events to economic impact
4. Value distribution models describing each country's economic and population exposure to hazards in a granular, precise way

'Shaping Climate Resilient Development – A Framework for Decision-Making'

This study, which details the ECA methodology, was undertaken by the Economics of Climate Adaptation Working Group, which includes McKinsey & Company and Swiss Re. The ECA methodology has been tested across hugely diverse locations, representing a variety of climate hazards, economic impacts and development stages. Case studies on US-Florida, UK-City of Hull, India, Guyana, Tanzania, Mali, China and Samoa are included in the report. The study showed that existing climate patterns are responsible for annualised losses of 1-12% of GDP and are likely to cause losses of up to 19% of GDP by 2030. This is a worrying trend. But the good news is that cost-effective adaptation measures can prevent anywhere between 40 and 68% of the expected economic loss in the regions studied.



TAOS Real-Time Forecasting System - A Special Feature

BENEFITS OF USING THE RTFS

- Advance knowledge of a hurricane's expected site-specific impacts can support effective preparedness and response, evacuation decision making, planning for pre-positioning of equipment and supplies, activation of mutual assistance arrangements and asset management.
- This real-time service provides enhanced value to participants through improving their understanding of hurricane risks and also through providing valuable real-time information to key stakeholders such as emergency and disaster managers, meteorologists and finance/economy officials.
- For Haiti, some specific features have been added to support the ongoing management of displaced populations. For critical locations, such as aid operation centers, refugee camps and transportation hubs, TAOS RTFS will produce site-specific estimates of expected wind speed and coastal flooding heights during the approach of a storm.

The Real-Time Impact Forecasting System (RTFS) is a storm impact forecast tool, built on the TAOS ('The Arbiter of Storms') modelling technology which is the core of CCRIF's second generation loss model

CCRIF will provide its members with real-time hurricane hazard and impact information for the 2010 hurricane season. This is made possible through a contractual arrangement with Kinetic Analysis Corporation (Kinanco). Kinanco produces real-time estimates of hazards and impacts from active tropical storms, using the TAOS™ real-time impact forecasting system (TAOS-RTFS). Results are made available in 'KML' format, which can be viewed using Google Earth. This enables the user to display hazard and impact map layers over the Google Earth background, which puts the hazard and impact information in an easy-to-visualise local geographic context.

For all active tropical storm systems, Kinanco computes the intensities of the storm hazards along the forecasted track, and the potential impact of those hazards on affected territories. Kinanco updates this information with each storm advisory issued by the National Hurricane Center (NHC). Kinanco uses its multi-processor TAOS storm modelling platform to simulate the storm, using as inputs the latest storm forecast information and other relevant weather data downloaded from the NOAAPORT satellite.

From this process described above, a map and tabular information for use by CCRIF countries is produced showing:

- maximum expected hazard intensity for wind speed, wave and storm surge height, and cumulative rainfall across the entire impact area of the storm;
- estimates of the impact on the territory by varying hazard levels;
- estimates of the operational impact of the storm on major ports and airports;
- maximum expected hazard values from the current storm as forecast, for up to five user-selected locations. For the maximum wind speed values, the time at which the maximum will occur is also provided.

CCRIF hazard and impact estimates are provided for areas between 55°W-91°W longitude and 8°N-34°N latitude.

To access the RTFS, CCRIF members will be provided with a username and password and can download the latest storm file from the CCRIF secure website. Once downloaded, the file can be opened in Google Earth. Practical guidelines for viewing the file and its contents will be provided by CCRIF in its soon-to-be-published RTFS User Guide.



RTFS – Understanding the Product

2010 Hurricane Season

The 2010 Hurricane Season in the Atlantic Ocean will begin on June 1, 2010, and end on November 30, 2010.

Atlantic hurricanes affect Caribbean countries and the eastern and Gulf coasts of the U.S.

The major forecasts and predictions for the 2010 hurricane season generally indicate an above average season. The NOAA forecast (<http://www.cpc.noaa.gov/products/outlooks/hurricane.shtml>) estimates an 85% chance of an above-normal season, a 10% chance of a near-normal season and a 5% chance of a below-normal season.

This could have serious implications for Caribbean countries, especially considering the already unfavourable economic situation most countries are currently facing. This therefore makes the need for CCRIF even stronger.

The hazard values that are provided by the RTFS represent the **maximum expected hazard intensity** at each location (grid cell) across the analysis area for the current storm, as forecasted. The storm simulation is performed at a resolution of 30 arc seconds, corresponding to a spatial grid of 900m cells.

Hazard Footprints - The following mapped hazard information is produced for each storm forecast. All hazard map information is provided for categorised ranges of hazard values:

1. **Wind hazard:** maximum wind speed in mph
2. **Wave hazard:** maximum significant wave height in feet
3. **Surge hazard:** maximum water elevation in feet, above Mean Sea Level (MSL)
4. **Precipitation:** cumulative rainfall in inches, for the duration of the storm

Impacts - Hazard values are translated into impact estimates by using appropriate vulnerability functions.

The following impact estimates are produced for each storm forecast:

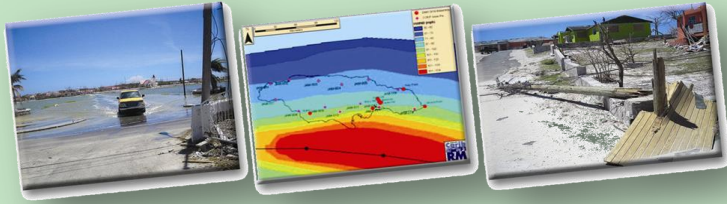
1. Wind impact severity, according to the Beaufort Scale
2. Tabular report of population affected, by hazard level, and by administrative unit (by country, and by parish for some countries)
3. Impact on major ports and airports within the CCRIF area in terms of maximum wind speed and storm surge values at the site, and expected shut-down duration

Location-specific Hazard Trigger Values - A new information product, first introduced for the 2009 season, offers countries the ability to select up to five

locations for which the RTFS will produce the maximum wind, wave and storm surge values that can be expected during the course of the storm. This information can be used by emergency managers as triggers for an alert system, such as the WebEOC system operated by CDEMA. For example, shelter management can be informed as to when a given critical wind speed is expected at that location. The decision to evacuate a low-lying area can be informed by the maximum storm surge height expected just off the coast at that location.

**Get Your
Copy**





Accessing RTFS Product Support

The Caribbean Institute for Meteorology and Hydrology (CIMH) has been granted a sub-licence to access TAOS RTFS and use it for training and support purposes. This includes:

1. Briefing the CDEMA country preparedness team each time a storm is approaching one or more of the CDEMA member states.
2. Using TAOS RTFS as training material in its teaching programme for meteorology students.
3. Organising familiarisation and training workshops for Caribbean meteorological officers and disaster management agencies prior to the start of the hurricane season.
4. Providing technical support to TAOS RTFS users upon request.

Kinetic Analysis Corporation provides the necessary support to CIMH officers involved in the above activities, and maintains a website with online reference and technical support material, accessible to the licence holder and all sub-licence holders. Matters related to the technical aspects of product transmission and display are handled via direct communication between Kinanco and the licence/sub-licence holders.

CCRIF Chairman on Ready 2010

News

CCRIF Chairman, Milo Pearson will appear on “Ready 2010” this Hurricane Season. “Ready 2010” is the first television survival guide series that focuses on preparedness in the multi-hazard Caribbean region. The 5 x 60 minute programme series explains the dangers associated with various hazards, natural and man-made, and in practical terms teaches how to plan for the safety of individuals and communities.

In his 1-hour interview in Barbados with Kent Jordon of Digiscapes, Mr Pearson discussed general background information on CCRIF and the Facility’s future plans. There was a lot of interest by the interviewer in CCRIF’s work on climate change adaptation, specifically the Economics of Climate Adaptation (ECA) project. Various portions of this interview will be used in segments of the five-part series which will be aired during prime time starting in June 2010 in 17 Caribbean countries.

CCRIF also provided financial support towards the “Ready 2010” programme.

Many hazards. One goal.

READY 2010



CCRIF to Present its Clients and Stakeholders with more User-Friendly Website in June

In the last few months CCRIF has been working towards enabling its website to be more user-friendly. The goal of the new website is to support CCRIF to improve programme delivery and services whilst at the same time increasing the awareness of the Facility's mission and role in disaster risk reduction.

Specific new features include:

- more logical navigation through the site;
- robust site search capabilities;
- easier access to CCRIF publications and reports;
- addition of multimedia articles and interviews;
- more detailed information about CCRIF's programmes, partnerships and projects; and
- access for member countries to log in using a unique username/password in order to access the Real-Time Impact Forecasting System (RTFS). This will enable CCRIF to monitor the usage of the RTFS and to determine where additional support may be needed. The capability for the data to be automatically downloaded from Kinanco to the CCRIF site was maintained.



CCRIF Calendar of Events

Some events in which CCRIF participated during the period March 2010 to May 2010 are:

- 14th Meeting of the Council for Finance and Planning (COFAP), February 27 and March 1, 2010, Trinidad
- Financial and Private Sector Development Forum 2010, March 2 - 3, 2010, Washington DC, on the theme "Getting Back to Business"
- Marketplace on Innovative Financial Solutions for Development, March 4 - 5, 2010, Paris
- Caribbean Regional Review Meeting of the Mauritius Strategy for the Further Implementation of the Barbados Programme of Action (MSI), March 16 & 18, 2010, Grenada
- Barbados Hotel and Tourism Association (BHTA) annual Disaster Management Symposium, April 22, 2010 (Earth Day), Barbados
- 11th Caribbean Conference on Sustainable Tourism Development, May 9-12, 2010, Barbados
- Economics of Climate Change Workshop (to discuss findings of Caribbean ECA Study), May 12 & 13, 2010, Barbados
- Regional workshop of the Caribbean Emergency Legislation Project (CELP), May 21, 2010, Saint Lucia

Some Upcoming Events:

- Understanding Risk Conference, June 1- 4, 2010, Washington DC
- CCRIF Board Meeting, June 3 - 4, 2010
- Caribbean Insurance Conference 2010, June 13 - 15, 2010, Jamaica
- IICA Agricultural Insurance Symposium, June 16 - 18 2010, Antigua
- CDEMA Council Symposium, June 24, 2010, Barbados
- Geneva Association Modelling and Mapping Risks Seminar, June 24 - 25, 2010, Bermuda
- 8th Insurance Linked Securities Conference, July 14 - 16, 2010, Bermuda
- USAID Disaster Risk Management Workshops for the Eastern Caribbean, July 19 - 23, 2010

CARIBBEAN CATASTROPHE RISK INSURANCE FACILITY



CCRIF Offers Scholarships to UWI Students through its Technical Assistance Programme

CCRIF presented an offer of a scholarship programme to the University of the West Indies in March 2010. This initiative forms part of CCRIF's Technical Assistance Programme. The scholarship programme will be made available in the next academic year - 2010/11. The scope of funding for this programme is outlined below.

- i) Three scholarships for the two-year disaster management MPhil. starting in September 2010;
- ii) Two 2-year scholarships for students entering their second of three years in Geography/Geology (Mona Campus, Jamaica) and Civil with Environmental Engineering (St Augustine Campus, Trinidad) - starting in September 2010, one scholarship for each of the programmes; and
- iii) Scholarship coverage for the same students selected in (ii) above in their third year, subject to satisfactory performance in their second year.

CCRIF will provide UWI with a total of US\$49,000 for the 2010/11 academic year. Additionally, although not explicitly funded at this stage, CCRIF intends to maintain a certain level of support to UWI over the long term. At this time, UWI is using its internal processes to advertise the scholarships as well as to engage in selection. An official launch of the programme will take place once the scholarship recipients have been selected. This is targeted for August this year at the start of the new academic year.



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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