



COAST Parametric Insurance Product for the Fisheries Sector Available in Saint Lucia and Grenada

The Caribbean is the first region globally to develop and implement parametric climate risk insurance for the fisheries sector. For the first time, vulnerable fishing communities will have access to insurance developed specifically for their needs, protecting their livelihoods and playing a key role in closing the protection gap.

On July 1, CCRIF SPC and the World Bank issued the Caribbean Oceans and Aquaculture Sustainability Facility (COAST) fisheries parametric insurance policy to two of its member governments – Grenada and Saint Lucia. The COAST insurance policy provides coverage for fisherfolk and other players in the fisheries industry to enable them to recover quickly after weather-related events. Initial funding for COAST was provided by the U.S. State Department.

COAST is an innovative climate risk insurance mechanism to promote: food security; livelihoods of fisherfolk; resilient fisheries; sustainable management of coastal infrastructure; and disaster risk reduction in the Caribbean.



The Caribbean is the first region globally to develop and implement parametric climate risk insurance for the fisheries sector. For the first time, vulnerable fishing communities will have access to insurance developed specifically for their needs, protecting their livelihoods and playing a key role in closing the protection gap.

The fisheries sector in the CARICOM Region is an important source of livelihoods and contributes significantly to food security, poverty alleviation, employment, foreign exchange earnings, development and stability of rural and coastal communities, culture, recreation and tourism. The sector also is an important contributor to Gross Domestic Product (GDP) of many countries as well as an important foreign exchange earner and accounts for up to 7 per cent of some countries' GDP. Additionally, its potential in terms of value-added processing and linkages with other sectors such as tourism, remains substantial. However, the fisheries sector also faces many pressures. Chief among these are:

- Poor fishing practices and poaching
- Degradation of supporting habitats (such as coral reefs, seagrasses, and mangroves)
- Sargassum blooms, which may result from increasing sea temperatures, agricultural fertilizers and untreated sewage flowing into the Caribbean Sea as well as changes in ocean currents.
- Invasive species (e.g. lion fish)
- Climate change impacts, particularly...
 - Extreme weather events and sea level rise
 - Ocean acidification, increases in sea temperature, and coral bleaching

Recent hurricanes in the Caribbean and their devastating effects demonstrate the need for a climate risk insurance product to help governments and fishing communities take steps to reduce the potential damage before a storm event and recover from the inevitable damage of such events, returning to fishing activities with minimal disturbance.

Taking advantage of CCRIF's experience with parametric models and parametric insurance policies for tropical cyclone and excess rainfall, the COAST insurance product supports governments' efforts to rapidly put money into the hands of those impacted by extreme weather, providing them with immediate economic relief and promoting a culture of building back better to enhance coastal community resilience after an extreme weather event.

The COAST insurance product is another in a list of innovative parametric insurance products that are provided by CCRIF to Caribbean and Central American governments. Since its inception in 2007, CCRIF has been providing insurance for tropical cyclones and earthquakes, and in 2013, based on demand from its members, the Facility began providing coverage against excess rainfall events. The addition of the fisheries product reinforces CCRIF's commitment to meeting the needs of the region.

While it is governments that purchase COAST policies, this parametric insurance product is unique – it incorporates a livelihood protection component (akin to microinsurance) and a tropical cyclone component (sovereign insurance). The COAST product provides coverage for losses caused by “bad weather” on fisherfolk and for direct damages caused by tropical cyclones (wind and storm surge) to fishing vessels, fishing equipment and fishing infrastructure. In this case, “bad weather” is defined as high waves and occurrence of heavy rainfall throughout the policy year.

Like CCRIF's other parametric insurance products, COAST insurance also is parametric, whereby payouts are made based on a pre-defined level of wave height, rainfall, wind or storm surge and their impact. Therefore, payouts can be made quickly – within 14 days of the event to honour one of CCRIF's core principles. If a country's policy is triggered, the funds will be provided by CCRIF to the Ministry of Finance, followed by a rapid transfer to the fisherfolk and other affected parties throughout the country's fishing industry. To facilitate timely transfer of funds, the list of beneficiaries is defined at the time of policy inception by the government and is designed to include beneficiaries from the fisheries value chain, including fishers, crew members, captains, boat owners, fish vendors and processors, etc.

Some C|O|A|S|T Highlights

First ever climate risk parametric insurance developed for the fisheries sector spearheaded by the Caribbean. Caribbean is the first region globally to develop and implement a parametric climate risk insurance products for the fisheries sector. For the first time, vulnerable fishing communities will have access to insurance developed specifically for their needs.

First time insurance coverage of “bad weather” events, in addition to covering tropical cyclones. COAST innovates in covering losses attributed to fisherfolk due to “bad weather” events, defined as high waves and occurrence of heavy rainfall throughout the policy year. The “bad weather” model will be considered for the first tier, while the tropical cyclone model for the second and third tiers of the insurance.

First time tracking of parametric insurance payouts at the scale of individual beneficiaries. Through the predefined procedures for payout transfers, COAST allows for tracking the flow of funds down to the level of the beneficiaries, with a financial management and auditing system in place.

COAST – a catalyst for promoting resilience in the fisheries sector, leading to a stronger blue economy in the region. COAST will reduce the risk that climate change poses to food security in the fisheries sector, and incentivize policy reforms for the uptake of climate smart fisheries practices as well as coastal resilience. This will build a stronger foundation for the blue economy, while supporting the livelihoods of those who depend on this valuable marine natural capital.

COAST encourages inclusiveness and participation of women. COAST is intended to be inclusive and benefits all participants in the fisheries sector, including crew members, captains and/or boat owners, and especially fish vendors and processors who are mostly women. The list of beneficiaries was predefined by the governments as per COAST Operational Manual.

Rapid transfer of payouts to fisherfolk. CCRIF SPC payouts will be channeled through the Ministry of Finance of the participating countries within 14 days of the covered event, followed by a rapid transfer to the fisherfolk.

New partnerships developed to support COAST. CCRIF SPC and the Caribbean Regional Fisheries Mechanism (CRFM) have signed a MOU to support COAST and develop climate-resilient fisheries and aquaculture industries in the region.



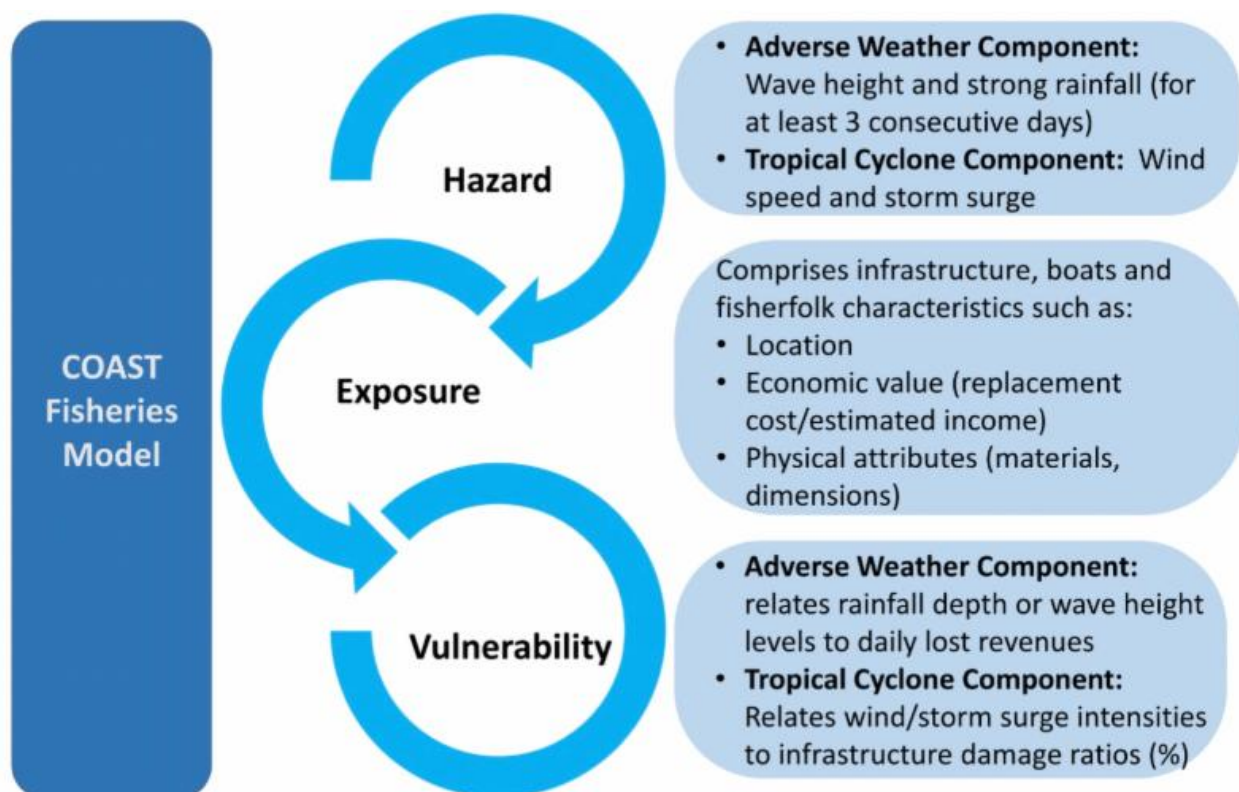
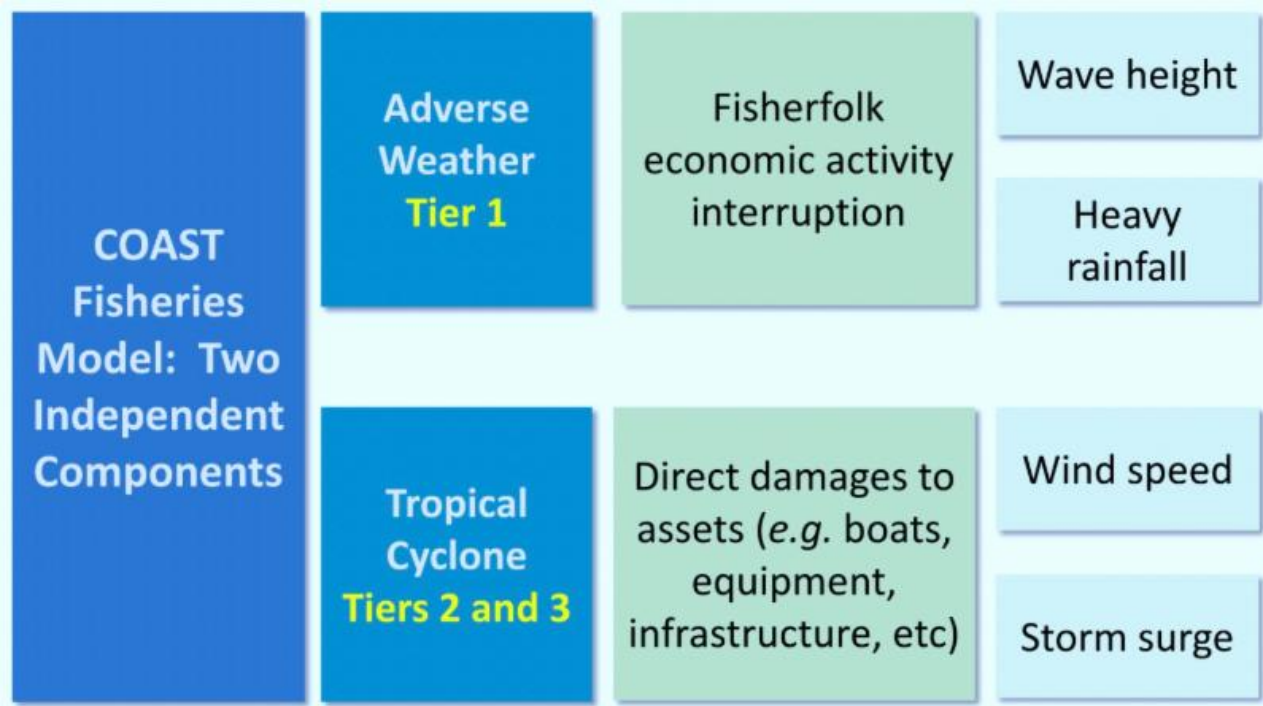
To learn more about COAST, please view the COAST booklet [here](#).

C|O|A|S|T

A Focus on the COAST Policy – How It Works

The COAST parametric insurance product provides cover for **losses attributed to the fisheries sector due to unusually bad weather conditions, and/or high wind and storm surge caused by tropical cyclones** throughout the policy year. The Fisheries model that underpins the COAST product comprises two main components:

- **Adverse Weather Component (Tier 1):** evaluation of losses caused by adverse weather to fisherfolk that prevent them from carrying out their usual activities due to sea condition and the occurrence of heavy rainfall.
- **Tropical Cyclone (TC) Component (Tiers 2 and 3):** assessment of direct damages by tropical cyclone events to fishing vessels, fishing equipment and infrastructure, which is related to tropical cyclone-induced strong winds and storm surges.

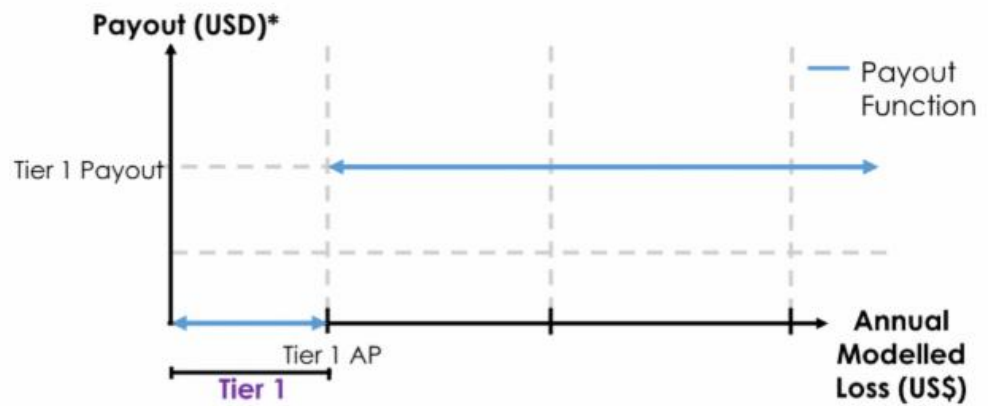


COAST Payouts

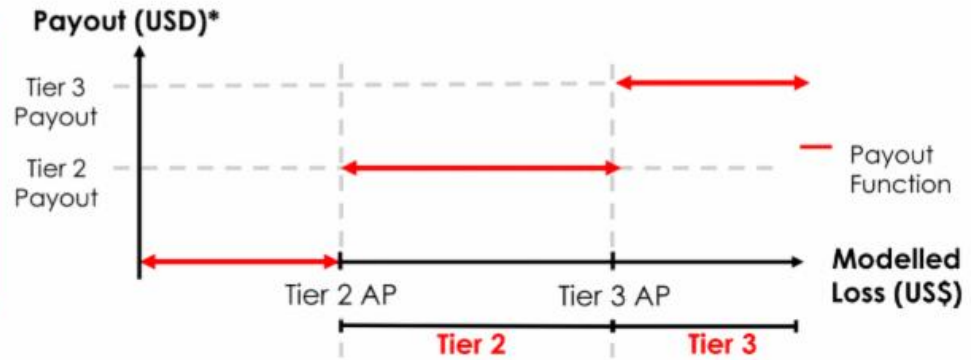
The COAST parametric insurance product follows a three-tier payment scheme:

- Tier 1 consists of a lump sum payment provided once an annual aggregate deductible threshold is met using the Adverse Weather component.
- Tier 2 consists of a lump sum payment provided if a Tropical Cyclone event loss falls within a defined interval.
- Tier 3 provides a lump sum payment if a Tropical Cyclone event loss is above the Tier 2 interval's upper limit.

Adverse Weather Component



Tropical Cyclone Component

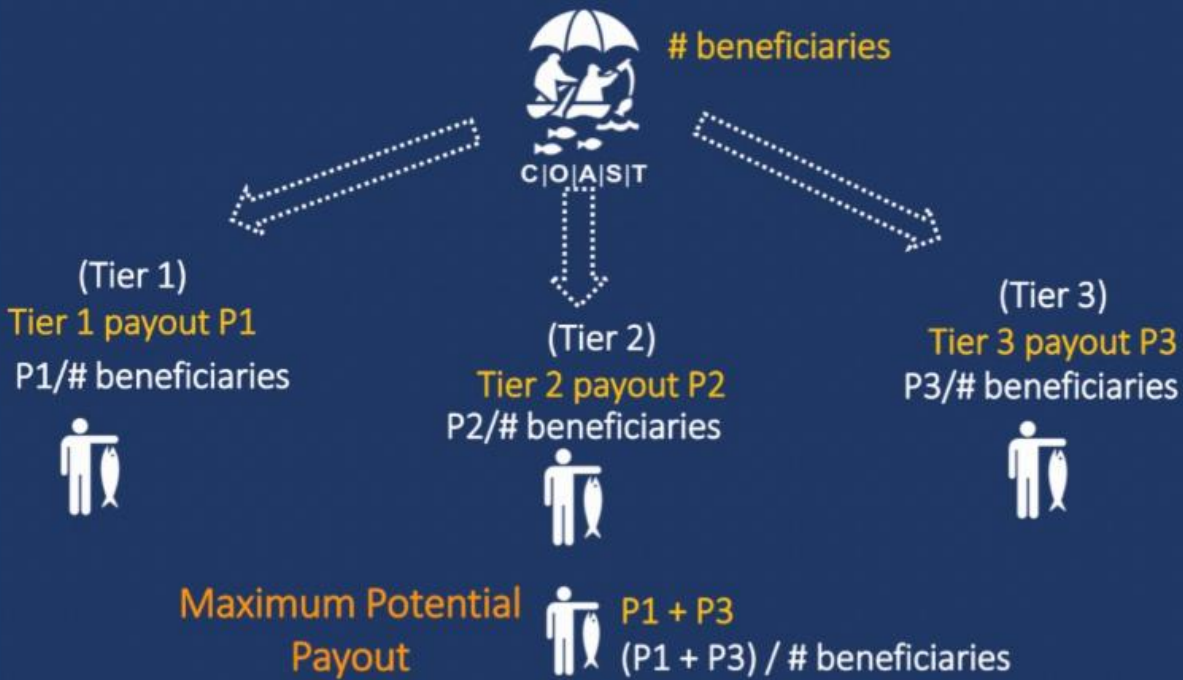


Dissemination of COAST Payouts to Beneficiaries

If a country's policy is triggered by an event (i.e. if the country losses are greater than the policy's Tier 1 Attachment Point (AP) (for Adverse Weather) or Tier 2 or Tier 3 Attachment Point (for Tropical Cyclone)), CCRIF will automatically provide the payout to the Ministry of Finance.

After the Ministry of Finance receives the payout (within 14 days of the event), the process to disseminate funds to the pre-determined beneficiaries is conducted. This process and who are considered beneficiaries are developed by the Government in collaboration with CCRIF and is determined at policy inception. Beneficiaries may include fisherfolk, boat owners, captains, crew members, and fish vendors. See COAST payout structure in the graphic below:

COAST Payout Structure



CCRIF and the World Bank Engage in COAST Missions to Saint Lucia and Grenada



CCRIF and the World Bank conducted missions to Saint Lucia and Grenada during the weeks of July 9 and July 15, respectively. The team engaged in the following main activities:

- Meetings with the government ministries and agencies involved in the COAST parametric insurance product, particularly those with responsibility for finance, agriculture, fisheries, physical planning, environment and natural resource management as well as the office of the Accountant General and Audit Departments – to review the COAST Operational Manual, to confirm roles and responsibilities, and to address any issues and challenges that could hamper the successful implementation of this initiative.
- Focus-group meetings with fisherfolk in both countries - who are the direct beneficiaries of the COAST parametric insurance – to inform them about the final product (scope, implementation arrangements, etc.), and gather feedback from them for further implementation and replication.

- Delivery of the CCRIF 2-day training programme in disaster risk financing titled “*Ex-Ante Disaster Risk Financing, CCRIF SPC Parametric Policies and the Relationship with Fiscal and Economic Policy.*” The course which was recently updated, introduced the new models which underpin CCRIF’s 2019/20 policies for tropical cyclones (TC), earthquakes (EQ) and excess rainfall (XSR) (the SPHERA model for TC and EQ and XSR 2.5 model), as well as the new COAST parametric product.

Please see link to video from The National Competitiveness And Productivity Council that summarizes the CCRIF SPC/World Bank mission to Saint Lucia ... [access here](#)

... On COAST... Key Insights, Views and Feedback from Stakeholders in the Fisheries Sector...



Patricia Medar- Fisheries Assistant, at Department of Fisheries in Saint Lucia
On bad weather: “When you have a lot of high seas and rough waves, the fisherfolk are not able to go out, and that affects



their livelihood”

On the benefit of COAST: “it will benefit them a lot, because the distress fund is only for boat owners, while COAST is looking at every fisherfolk, everyone involved in the fisheries sector, everyone dependent on fisheries for livelihood”.



Julian Alexis Manager of the Soufriere Fisherman Cooperative, Saint Lucia

On bad weather: “sometimes it lasts one week and damages boats and equipment”.

On coping after a natural disaster: “difficult for the cooperative because right after the storm they want to go out, but they don’t have the finance to recover”

On the benefit of COAST: “fisherpeople will be able to get a livelihood policy and go out and make little something for their wife and children, none of the societies or the people in the cooperatives have access to insurance at this point”.

Kaygianna Toussant Charleny, Goodwill Fishermen Cooperative at Vieux Fort, Saint Lucia

On the benefit of COAST: “as with any insurance, it gives you an ability to get something to start up... for one fisherfolk, for any payout that they are going to receive, it will make up sort of for the down time. So, if you give them a little something that they can perhaps buy their food, or whatever it is for the time they are down. ... but also if you look at on the damage side, you find that, specially, the commercial banks are really not into giving loans for fishing gears, fishing material... you find that credit unions are moving that direction, giving a loan for engine or so on, but it means that if they (fisherfolk) have an insurance, something to start with, it means that that will get support to start up and ask for a credit at a credit union”.



Highlights of the COAST Mission – Saint Lucia



Jose Angel Villalobos Senior Financial Sector Specialist, World Bank and Cointha Thomas, Permanent Secretary, Ministry of Finance, Saint Lucia discuss the next steps in the COAST initiative.



Members of the CCRIF and COAST Team meet with the Ministry of Finance in Saint Lucia: Permanent Secretary Cointha Thomas (centre), Matthew Branford (2nd right) - Assistant Director, Financial Administration - and Nadia Wells-Hyacinth (far right) – Director, Financial Administration



Jose Angel Villalobos and Juliana Castaño Isaza discuss the COAST Operations Manual with stakeholders in Saint Lucia



Sarita Williams-Peter, Senior Fisheries Officer, Saint Lucia, makes a point in the COAST meeting



Joanna Melville – Gros Islet Fishermen’s Cooperative (left) and Alva Lynch – Saint Lucia Fisherfolk Cooperative (right) participate in discussions on the COAST product at the office of the Fisheries Division in Saint Lucia



Fishers and fishing cooperatives from Vieux Fort participate in discussions on the COAST product at the Fisheries Division Office in Vieux Fort, Saint Lucia



The World Bank and CCRIF Team at the Department of Fisheries Saint Lucia

Highlights of the COAST Mission – Grenada



Sylvia Michele Diez from the World Bank (centre) listens to fishers in Grenada



Jose Angel Villalobos (right) engages in discussion with a participant at the fisherfolk focus group meeting in Grenada



Moran Mitchell, Chief Fisheries Officer, Grenada discusses how COAST payouts are distributed to the beneficiaries



Some of the participants at the meeting with fisherfolk in Grenada



Members of the CCRIF/COAST Team with participants in the meeting with the Fisheries Division, fisherfolk and other persons in the fisheries industry in Grenada

Special Feature – CCRIF Capacity Building Knowledge Sharing and Training Initiatives

CCRIF and the World Bank Conduct Training on Disaster Risk Financing

in Saint Lucia and Grenada

CCRIF – with participation from the World Bank – delivered its flagship training programme, *“Understanding Ex-Ante Disaster Risk Financing, CCRIF Parametric Policies and the Relationship with Fiscal and Economic Policy”* to the Governments of Saint Lucia and Grenada on July 9 & 10 and July 17 & 18, 2019 respectively. The training was designed to enable technical officers to better understand the importance of linking fiscal policies with disaster risk management, including disaster risk financing and financial protection strategies, CCRIF’s new models which underpin countries’ 2019/20 policies: the SPHERA model for tropical cyclone and earthquake policies and XSR 2.5 for the excess rainfall policies. The two-day training also included an in-depth discussion of the new Caribbean Oceans and Aquaculture Sustainability Facility (COAST) initiative in these two pilot countries selected to implement COAST this policy year.

Over 60 persons participated in the training in both countries. Participants represented a range of ministries, agencies and organizations, including the ministries and agencies with responsibility for finance, agriculture, fisheries, environment, climate change; the Offices of the Accountant General and Auditor General; national disaster management offices; meteorology offices, and planning departments.



Ms. Cointha Thomas, Permanent Secretary, Ministry of Finance, Saint Lucia delivering Opening Remarks



Some participants at the CCRIF Training in Saint Lucia



The CCRIF and COAST Team with participants at the CCRIF Training Session in Saint Lucia – July 9 & 10 2019



Ms. Patricia Clarke, Permanent Secretary, Ministry of Finance, Grenada delivering Opening Remarks

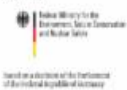


Some of the participants at the CCRIF Training in Grenada



The CCRIF and COAST Team with participants at the CCRIF Training Session in Grenada – July 17 & 18 2019

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About the Climate Risk Adaptation and Insurance in the Caribbean project (CRAIC)

CRAIC addresses climate change, adaptation and vulnerability by promoting climate risk insurance as an instrument to manage and transfer risk. It is being implemented in Jamaica, Grenada, Saint Lucia, Belize and Trinidad and Tobago.

The project has developed a parametric microinsurance product called the Livelihood Protection Policy (LPP). 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). The livelihood protection policy is designed to reduce vulnerability and sustain the livelihoods of low-income communities. Policyholders (mainly small farmers) in Jamaica and Saint Lucia have received payouts allowing them to get back on their feet and realize concrete earnings as soon as possible.

Project partners are the Munich Climate Insurance Initiative (MCII), CCRIF SPC, International Labour Organization (ILO) Impact Insurance, DHI and local insurance and financial institutions. Funding for the project is provided by the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety. (BMU) under the International Climate Initiative (IKI).

Over the 2-day period July 22 to 23, CCRIF and the Caribbean Risk Adaptation and Insurance in the Caribbean (CRAIC) project team visited Trinidad and Tobago and were hosted by the Ministry of Finance to engage with officials in the public and private sectors and with non-governmental organizations to sensitize them to the project.

Accordingly, the main purposes of the mission were to:

- Engage with officials of the Ministry of Finance on the project as well as to discuss future engagement in Trinidad and Tobago and the roll-out of the livelihood protection policy (LPP) in that country
- Increase and enhance awareness of microinsurance and livelihood protection in the face of a changing climate with key stakeholders in government, amongst insurance companies and with cooperatives and non-governmental organizations
- Build relationships with key stakeholders who have expressed interest in microinsurance and identify opportunities and potential targets groups

Two workshops – with the public sector and local insurance companies – and a meeting with cooperatives and non-governmental organizations were held. These sessions focused on microinsurance and the linkages with sovereign level parametric cover, social protection and microinsurance, promoting livelihood protection and closing the protection gap. Under the current Phase II of the CRAIC project (CRAIC II) the livelihood protection policy is being made available

to particularly vulnerable individuals to help protect their livelihoods following extreme weather events by providing quick cash payouts when a policy is triggered.

For additional information on CRAIC II and microinsurance, see presentation [here](#).

Highlights of the CRAIC Mission – Trinidad and Tobago



A cross-section of participants in the Insurance Industry workshop



The CCRIF and CRAIC Team – L-R Daniel McGree, ILO Impact Insurance; Charlene James, MCII; Elizabeth Emanuel, CCRIF SPC; and Jennifer Phillips, MCII



Participants in public sector workshop

Hot off the Press: CCRIF's Latest Publications

New CCRIF SPC, World Bank Publication

C|O|A|S|T

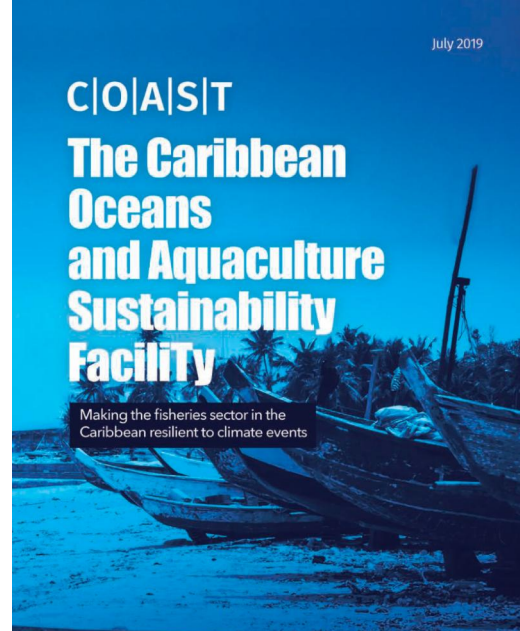


CCRIF SPC and the World Bank have released a new booklet on the Caribbean Oceans and Aquaculture Sustainability Facility (COAST). The booklet provides a brief overview of the fisheries industry in the Caribbean and introduces the COAST initiative. It also includes an introduction to parametric insurance and describes the COAST parametric policy and how it works.

COAST is an innovative climate risk

insurance mechanism designed to promote food security, livelihoods of fisherfolk, resilient fisheries, sustainable management of coastal infrastructure, and disaster risk reduction in the Caribbean

To access this booklet, [click here](#)



Stakeholder Engagement: Meeting our Members

CCRIF Board and Management Team make Courtesy Call on the Government of Sint Maarten



L-R: Timothy Antoine – CCRIF Chairman; Isaac Anthony – CCRIF CEO; Faye Hardy – CCRIF Board Member; Hon. Leona Marlin-Romeo – Sint Maarten Prime Minister; Desirée Cherebin – CCRIF Vice-Chairperson; Sandra Bailey – CCRIF Board Member; and Hon. Perry Geerlings – Sint Maarten Minister of Finance

During the recently concluded CCRIF Board Meeting held in Sint Maarten, members of the Board and Management Team made a courtesy call on Hon. Leona M. Marlin-Romeo, Prime Minister and Hon. Perry Geerlings, Minister of Finance.

Sint Maarten became a member of CCRIF in 2018 and the Board and Management Team used this meeting to formally welcome the country to CCRIF. The Prime Minister and Minister of Finance were engaged in discussions on new developments within CCRIF and the role of disaster risk financing and CCRIF parametric insurance products in the country's pursuit of its fiscal and economic targets. Information also was provided on the Facility's Technical Assistance Programme and how individuals and communities may be able to benefit from the scholarships, internships and small grants that are provided by this programme. Sint Maarten also apprised CCRIF on how its reconstruction efforts were advancing following the devastating impacts of Hurricane Irma in 2017.

CCRIF Signs MOU with the Caribbean Centre for Development Administration

In July, CCRIF and the Caribbean Centre for Development Administration (CARICAD) signed a memorandum of understanding (MOU) to promote and facilitate comprehensive risk management within the Caribbean region. Specifically, the MOU will lead to:



- Collaboration on regional studies concerning programmes and projects that contribute to improving the quality of public services in member countries
- Improved technical capacity of public officers
- Implementation of capacity development initiatives for leaders and officers in the public sector
- Enhanced public sector governance
- Peer-to-peer exchange of knowledge, expertise and best practices related to risk management in public administration
- Through provision of assistance to the institutions for education and training in public administration in the countries of the region, improved teaching programmes and implementation of sustainable national plans for economic and social development.
- Development and implementation of collective strategies to promote post-disaster recovery action plan development and implementation.
- Promotion of the concepts of integrated sovereign risk management and country risk officers and the development of a standardized integrated risk management framework for use throughout the Caribbean.

CCRIF also has MOUs with eight other organizations in the region – Association of Caribbean States, Caribbean Community Climate Change Centre, Caribbean Disaster Emergency Management Agency, Caribbean Institute for Meteorology and Hydrology, Caribbean Regional Fisheries Mechanism, Organisation of Eastern Caribbean States, United Nations Economic Commission for Latin America and the Caribbean and the University of the West Indies. These MOUs are designed to help build capacity and knowledge bases for the development of disaster risk management and climate adaptation strategies in the Caribbean.

Spotlight – CCRIF Regional Internship Programme

19 Young Caribbean Professionals Set to Gain New Experiences in Disaster Risk Management

Under its Regional Internship Programme for 2019, CCRIF has placed 19 young university












graduates from 7 Caribbean countries as interns in 14 national or regional host organizations to gain experience and assist these organizations to move forward with achieving their mandate. CCRIF will provide approximately US\$75,000 to the programme this year.

CCRIF's Regional Internship Programme provides opportunities for students who have specialized in the areas of disaster risk management, environmental management, actuarial science, geography, climate studies and other related areas to be assigned to national and regional organizations where their educational experience can be enhanced through practical work assignments. The programme is welcomed by the host organizations – in many cases, these organizations have been able to complete tasks that had long been left unfinished with the availability of these bright, young interns.

Host organizations this year include national disaster management and meteorology agencies as well as regional entities including the Caribbean Disaster Emergency Management Agency (CDEMA), Caribbean Institute of Meteorology and Hydrology (CIMH), Caribbean Regional Fisheries Mechanism (CRFM), Caribbean Meteorological Organization, Association of Caribbean States (ACS) among others.

This cohort brings to 104 the total number of internships implemented since the programme was launched in 2015. Over the period 2015 to 2019 CCRIF will have invested approximately US\$335,000 in the programme.

CCRIF...Building a Cadre of Professionals
in Disaster Risk Management across the Region

<p>CCRIF Regional Internship Programme 2019</p> <p>19 interns placed in 14 national and regional organizations</p>	 <p>Kerron Hamblin <i>Barbados</i></p>	 <p>Jamala Alexander <i>Trinidad & Tobago</i></p>	 <p>Richéda Speede <i>Barbados</i></p>
 <p>Jamella Chesney <i>Guyana</i></p>	 <p>Aja Melville <i>Jamaica</i></p>	 <p>Deston Pope <i>Trinidad & Tobago</i></p>	 <p>Johnathan Pryce <i>Grenada</i></p>
 <p>Aria Laidlow <i>St. Vincent & the</i></p>	 <p>Laura-Ashley Henderson</p>	 <p>Makeba Felix <i>Saint Lucia</i></p>	 <p>Zinzi Horne <i>St. Vincent & the</i></p>

Grenadines

Trinidad & Tobago

Grenadines



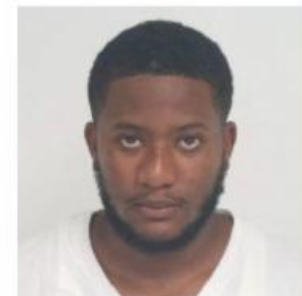
Nkosi Mounter-Taitt
Barbados



Abigail Jones
Jamaica



Daniel Perriera
Trinidad & Tobago



Rasheed Pinder
Barbados



Akil Crichlow
Trinidad & Tobago



Matthew Williams
Jamaica



Davitia James
Dominica

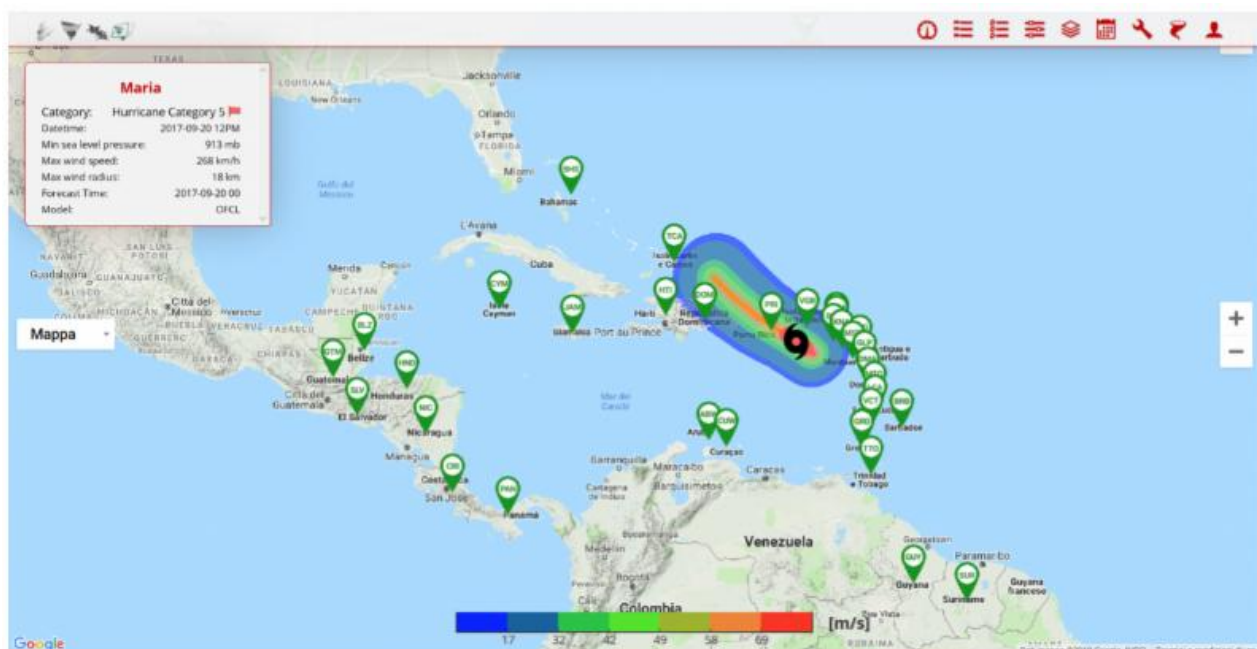


Kimara Dyer
Dominica

Host Organizations 2019: Association of Caribbean States, Barbados Department of Emergency Management, Hazard Management Cayman Islands, Caribbean Disaster Emergency Management Agency, The University of the West Indies, Caribbean Institute for Meteorology and Hydrology, The Bahamas Department of Meteorology, Caribbean Regional Fisheries Mechanism, Caribbean Meteorological Organization, Trinidad and Tobago Meteorological Service

Spotlight on Innovation:

CCRIF Launches New Web Monitoring Application (WeMap) Tool



CCRIF has developed the new Web Monitoring Application (WeMap) which incorporates an updated Real-Time Forecasting System, previously provided by CCRIF. The updated RTFS is based on the new SPHERA model which underpins CCRIF's 2019/20 tropical cyclone policies.

WeMAP allows users to easily access information about hazards related to tropical cyclones, earthquakes and rainfall and their impacts. In addition to the Real-Time Forecasting System (RTFS) for tropical cyclones, WeMAP includes three other components:

- the Excess Rainfall Monitoring Tool for rain events (including but not limited to cyclonic events)
- the Tropical Cyclone Monitoring Tool for wind and storm surge events induced by tropical cyclones
- the Earthquake Monitoring Tool for seismic events.

The Real-Time Forecasting System

While all hurricane weather sites tell the user where a storm is going, and how strong it is likely to be, the RTFS tells the user what it is likely to do when it gets there - in terms of: wind speed over land and storm surge along the coast, number of people affected by wind speed category and expected general damage levels. Knowledge of a storm's expected impacts helps with effective preparedness and response, aiding with evacuation decision making, planning for pre-positioning of equipment and supplies, activation of mutual assistance arrangements and asset management.

The RTFS seamlessly integrates advanced numerical modelling (it is based on the SPHERA model used for underpinning the CCRIF insurance policy for Tropical Cyclone), global data collection, statistical analysis and geographic information system technology to address a wide variety of issues of concern to both government and the private sector agencies. This includes the provision of useful information such as a) real-time impact estimates and b) site-specific risk and loss assessments using all available historical storm information.

For modelling of current events, the RTFS uses the SPHERA model recently developed by CCRIF and the full array of real-time weather data for the Automated Tropical Cyclone Forecast (ATCF) system and other sources. The XSR monitoring tool uses the XSR 2 model that underpins CCRIF's XSR policies. For socioeconomic impact assessments, primary source information from international agencies (including the World Bank and the International Monetary Fund) is utilized as well as information from the US Government and national/regional organizations and agencies responsible for sectoral data.

After simulating the storm based on the latest storm forecast information issued by the National Hurricane Center (NHC) and incorporating the relevant socio-economic data to determine the potential impact of those hazards on affected territories the following information for use by CCRIF countries is provided:

- Forecasted tropical cyclone eye-tracks derived from several models
- Maximum expected hazard intensity for wind speed and storm surge height across the entire impact area of the storm based on the Official Forecast (OFCL) provided by the NHC
- Maximum expected hazard intensity for wind speed across the entire impact area of the storm based on the probabilistic combination of several deterministic forecasts provided by the NHC.
- Probability of exceeding different levels of maximum wind speed (Tropical Storm, Hurricane 1 and Hurricane 3 wind speed levels) across the entire impact area of the storm based on the probabilistic combination of several deterministic track forecasts provided by the NHC.
- Estimates of the impact on the territory categorized in four different levels of intensity based on the OFCL.
- Estimates of the impact on the territory categorized in four different levels of intensity based on the probabilistic combination of several deterministic forecasts provided by the NHC.

Utilizing a high-resolution modelling web platform, detailed information on the expected hazard levels and their impacts from tropical cyclones for the entire Caribbean region is produced. The RTFS therefore enables all active members of CCRIF to access real-time estimates of the expected hazard levels and impacts on population and infrastructure for all tropical cyclones during the hurricane season.

The Excess Rainfall (XSR), Tropical Cyclone (TC) and Earthquake (EQ) Monitoring Tool

The XSR, TC and EQ monitoring tools show the hazard data for a given event as well as general categories for the exposure of each country in the application window (the Caribbean and Central America). For each peril, the following hazard data are shown:

- XSR – rainfall (as used in the XSR 2.5 model)
- TC – wind speed and storm surge level (as used in the SPHERA model)
- EQ – peak ground acceleration (as used in the SPHERA model)

The Practical Importance of WeMap to Policymakers

The main users of the WeMap tool include disaster and emergency managers and meteorological officers. The outputs are of greatest benefit to governmental and non-governmental agencies involved in natural hazard risk management.

Emergency managers can use the information as triggers for preparedness and alert procedures. For example, shelter management can be informed when the maximum wind speed is expected at a specific location. The decision to evacuate a low-lying area can be informed by the maximum storm surge height expected just off the coast of that location.

Outputs can be used to produce reports, maps and other guidance documents in support of emergency management. This can in turn be provided to other stakeholders to aid their decision making process.

Policymakers and Ministers also can benefit from information that the WeMap provides. The information can:

- Assist with contingency planning by providing a preview of what might happen if a given storm continues along a projected path, and activate appropriate contingency plans based on this insight
- Assist with shelter management by identifying impact areas and shelter locations to support shelter allocation decisions
- Identify potential damage to shelters, thereby aiding decision makers to plan for alternatives
- Assist with determining emergency interventions by identifying areas where populations are at risk so that decision makers can issue warnings and plan for assistance.

The information provided through the tool is therefore useful in informing decision making at such critical times to ensure public safety.

Accessing and Using the CCRIF WeMap Tool

CCRIF is inviting each of its member countries to designate a number of national agencies to access the WeMap tool. CCRIF encourages the inclusion of personnel from the national meteorological organizations and national disaster management agencies – as well as ministries of finance – for access to the tool. Users can visualize the data from the WeMap tool and download any storm file in GeoTiff format from the CCRIF secure web site. Once downloaded, the file can be opened in any GIS software.

Some Upcoming Events

Date	Event	Host	Location
July 29-31, 2019	WeMap Webinars	CCRIF	
August 2019 - December 2019	CCRIF Training	CCRIF/Ministries of Finance	CCRIF Member Countries
September 16, 2019	Insurance and Climate Risk Conference	InsuranceERM and Environmental Finance Magazine	New York
September 18 & 19, 2019	CCRIF Board and Service Provider Meetings	CCRIF	Cayman Islands

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