

MEETING REPORT

6th Meeting of the World Forum of Catastrophe Programmes

October 24 - 27, 2011
Montego Bay, Jamaica



Prepared by:
Caribbean Catastrophe Risk Insurance Facility (CCRIF)
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Acronyms

BMU	German Federal Ministry of the Environment and Nuclear Safety
CaribRM	Caribbean Risk Managers Ltd
CARICOM	Caribbean Community
CEA	California Earthquake Authority
CCR	Caisse Centrale de Réassurance
CCS	Consortio de Compensación de Seguros
CCRIF	Caribbean Catastrophe Risk Insurance Facility
CDB	Caribbean Development Bank
CDEMA	Caribbean Disaster and Emergency Management Agency
CDM	Comprehensive Disaster Management
CEO	Chief Executive Officer
CIDA	Canadian International Development Agency
DRM	Disaster Risk Management
DRRC	Disaster Risk Reduction Centre
ECA	Economics of Climate Adaptation
EQC	Earthquake Commission (New Zealand)
GAREAT	Gestion de l'Assurance et de la Réassurance des Risques d'Attentats et Actes de Terrorisme
GEM	Global Earthquake Model
ICF	Iceland Cat Fund
ICI	Icelandic Catastrophe Insurance
ICT	Information and Communication Technology
JERC	Japan Earthquake Reinsurance Company
JPY	Japanese Yen
KAC	Kinetic Analysis Corporation
MiCRO	Micro Insurance Catastrophe Risk Organisation
MCII	Munich Climate Insurance Initiative
NASA	National Aeronautics and Space Administration (United States)
NT	New Taiwan (dollars)
NZ	New Zealand
ODPEM	Office of Disaster Preparedness and Emergency Management (Jamaica)
OECD	Organisation for Economic Co-operation and Development
PAID	Romanian Natural Disaster Insurance Pool
SRC	Seismic Research Centre (University of the West Indies)
TREIF	Taiwan Residential Earthquake Insurance Fund
UK	United Kingdom
UNFCCC	United Nations Framework Convention on Climate Change
US	United States
UWI	University of the West Indies
WFCP	World Forum of Catastrophe Programmes

Foreword – Chairman of the 6th Meeting of the WFCP and Executive Chairman, CCRIF

Milo Pearson



I am pleased to present to you the report of the 6th Meeting of the World Forum of Catastrophe Programmes (WFCP) held in Jamaica between October 24 and 27, 2011. This report provides a synopsis of the presentations delivered during the meeting. We have uploaded these presentations along with photos and speeches to the WFCP page on the CCRIF website, and these can be accessed at: <http://www.ccrif.org/content/6th-meeting-world-forum-catastrophe-programmes>.

The Caribbean Catastrophe Risk Insurance Facility (CCRIF) was indeed pleased to be the host for this year's meeting. I believe that over the days of the meeting we were able to accomplish the meeting objectives which were:

- To share experiences, observations and lessons learned from major catastrophes in 2010/2011 – with a special focus on the earthquakes in Japan, New Zealand and Haiti;
- To learn from WFCP members about new developments in their respective organisations – new methods, projects and initiatives which could be used by other entities, Forum members and non-members;
- To share the hazard landscape of the Caribbean and the initiatives being undertaken to reduce vulnerability of these small island and coastal states; and
- To enhance knowledge about CCRIF as the first and only multi-national risk pool in the world, which is considered a model for other regions in the world.

Also, on behalf of the members of the World Forum of Catastrophe Programmes, I wish to extend warm regards to our colleagues with the Turkish Catastrophe Insurance Pool and their country as they recover from the earthquake that struck on October 23 – on the eve of this sixth meeting of the Forum. We express our condolences on the lives lost and wish the country the very best in its recovery efforts.

I once again thank you all for attending the meeting and hope you all had a pleasant stay in Jamaica! CCRIF looks forward to participating in the 7th meeting of the World Forum.

A handwritten signature in blue ink, appearing to read 'Milo Pearson'.

Introduction

The Caribbean Catastrophe Risk Insurance Facility (CCRIF) hosted the 6th meeting of the World Forum of Catastrophe Programmes in Montego Bay, Jamaica between 24th and 27th October 2011. The meeting is the Forum's annual gathering of representatives of catastrophe insurance programmes throughout the world to share experiences and ideas. CCRIF is one of twelve Forum members and is the only multiple-country programme and the only programme that focuses on developing countries. This was the first time the Forum was being hosted in the Caribbean.

Objectives of the Meeting

- To share experiences, observations and lessons learned from major catastrophes in 2010/2011
- To learn from members about new developments in their respective organisations' financing methodology, coverage innovations and claim/benefit response
- To learn from members about new methods, projects and initiatives whose implementation could be undertaken profitably by other WFCP member entities
- To share the hazard landscape of the Caribbean region and the initiatives being undertaken to reduce vulnerability of these small island and coastal states.

About the World Forum of Catastrophe Programmes



The World Forum of Catastrophe Programmes (WFCP) came into being in San Francisco in 2006 at the commemoration of the earthquake that struck that city in 1906. The WFCP is an informal platform created initially as a mechanism for the exchange of information and experiences among systems covering natural catastrophe insurance involving any form of public participation. Another aim of the WFCP is to make selected information and expertise available to bodies and institutions in other countries or other international agencies, as well as to private specialists and researchers interested in this category of insurance. The annual meeting

of members and the WFCP website are the two main mechanisms used for the sharing of information among members.

Membership in the Forum is open and free to all insurance systems (natural catastrophes and/or terrorism) in which there is public participation.

That first meeting of the WFCP was held in San Francisco in 2006 and was followed by conferences in Madrid (2007), Reykjavik (2008), Taipei (2009) and Bucharest (2010).

About the Host – Caribbean Catastrophe Risk Insurance Facility



The Caribbean Catastrophe Risk Insurance Facility (CCRIF) is the first multi-country risk pool in the world, and is also the first insurance instrument to successfully develop parametric policies backed by both traditional and capital markets.

CCRIF is a regional catastrophe fund for Caribbean governments designed to limit the financial impact of devastating hurricanes and earthquakes by quickly providing financial liquidity when a policy is triggered. 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.

Sixteen governments are members of the Facility: 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.

About this Report

This report provides an overview of the four days of the meeting, focusing on the technical presentations on Days 2 and 3, with a specific emphasis on lessons learned. Speeches, presentations and other information described in the report are linked to the actual item on the WFCP web page on the CCRIF website at <http://www.ccrif.org/content/6th-meeting-world-forum-catastrophe-programmes>. This web page is linked to the World Forum website at: <http://www.wfcatprogrammes.com/home>.

Agenda for the 6th Meeting



Day 1 - Monday 24th October, 2011

Cocktail and Dinner Reception / Opening Ceremony

6:00 pm – 9:00 pm

Day 2 - Tuesday 25th October, 2011

Registration

8:30 am – 9:00 am

Opening Session

9:00 am – 9:30 am

- Welcome – Mr. Milo Pearson, Executive Chairman, CCRIF
- Opening Remarks
- Objectives of the WFCP Meeting
- Introductions

Session 1 - Natural Catastrophes in 2010/11, Recovery Efforts, Lessons Learned

9:30 am – 10:30 am

- Earthquake and Tsunami in Japan - Update on Recovery Efforts and Lessons Learned
- Earthquakes in New Zealand - Update on Recovery Efforts and Lessons Learned
- Earthquake in Haiti - Update on Recovery Efforts and Lesson Learned – Mr. Ronald Jackson, Director General, Office of Disaster Preparedness and Emergency Management, Jamaica

Discussion

Coffee Break

10:30 am – 11:00 am

Session 2– Experiences and Lessons Learned from the Caribbean

11:00 am – 1:00 pm

- Caribbean CDM Strategy and its Role in Building Caribbean Resilience to Disasters – Mr. Jeremy Collymore, Executive Director, Caribbean Disaster Emergency Management Agency
- Lessons Learned from the Hazard Management Experience of Jamaica and Applicability to other Small Island States - Mr. Ronald Jackson
- GEM and the Seismic Research Centre in the Caribbean and their Role in Catastrophe Risk Reduction – Dr. Myron Chin, GEM Operational Manager, and Mr. Lloyd Lynch, Research Fellow, University of the West Indies Seismic Research Centre
- Economics of Climate Adaptation in the Caribbean – Ms Ekhosuehi Iyahen, Programme Manager, Caribbean Risk Managers, Facility Supervisor, CCRIF

Discussion

Lunch

1:00 pm – 2:00 pm

Session 3– New Initiatives

2:00 pm – 3:30 pm

- Exploring innovative climate risk management solutions in the Caribbean – Dr. Simon Young, CEO, Caribbean Risk Managers, Facility Supervisor, CCRIF
- New CEA Cat Bond and U.S. Federal Legislation – Mr. Daniel Marshall, General Counsel, and Mr. Joseph Zuber, Senior Counsel, California Earthquake Authority

Discussion

Coffee Break

3:30 pm – 4:00 pm

Session 4 - Closing

4:00 pm – 4:45 pm

- Recap of Day 2
- Recap of Lessons Learned and Best Practices
- Closing Remarks

Day 3 - Wednesday 26th October, 2011

Session 1 - Updates from Members

9:00 am – 10:30 am

Coffee Break

10:30 am – 11:00 am

Session 1 Continued - Updates from Members

11:00 am - 12:30 pm

Discussion

Lunch

12:30 pm – 1:30 pm

Session 2– WFCP Business Meeting

1:30 pm – 3:30 pm

- Discussion/Selection of new WFCP Chair
- Involvement of other insurance pools and organisations in the WFCP
- WFCP Database
- Date and Venue of next WFCP Meeting

Session 3 - Closing

3:30 pm - 4:30 pm

- Recap of days 2 and 3
- Any other Business
- Information on Field Trip
- Closing Remarks

Day 4 - Thursday 27th October, 2011

Field Trip - Appleton Estate Jamaica Rum Tours

Farewell Dinner

Half Moon



List of Participants

Country	Name	Position	Organisation
WFCP Members			
Caribbean	Milo Pearson	Executive Chairman	Caribbean Catastrophe Risk Insurance Facility (CCRIF)
		Chairman	6 th Meeting of the WFCP
France	Christiane de Bondy	Secretary General	Gestion de l'Assurance et de la Réassurance des Risques d'Attentats et Actes de Terrorisme (GAREAT)
France	Laurent Montador	Head of Catastrophe Insurance and Public Funds in France	Caisse Centrale de Réassurance (CCR)
France	Patrick Bidan	Senior Vice-President	Caisse Centrale de Réassurance (CCR)
Iceland	Hulda Árnadóttir	General Manager	Icelandic Catastrophe Insurance
Norway	Gunn Eide	Head of Section	Norwegian Agricultural Authority
Romania	Marius Bulugea	President	Romanian Natural Disaster Insurance Pool (PAID)
Romania	Radu Mircea Popescu	Counselor	Romanian Natural Disaster Insurance Pool (PAID)
Spain	Alfonso Nájera	Deputy Manager for Studies, Documentation and Communication	Consortio de Compensación de Seguros (CCS)
Switzerland	Peter Schneider	CEO	IRV Intercantonal Reinsurance
Taiwan	Sophia Hsu	Senior Manager, Business Dept	Taiwan Residential Earthquake Insurance Fund (TREIF)
Taiwan	Nora Chang	Senior Vice President, Business Dept	Taiwan Residential Earthquake Insurance Fund (TREIF)
USA	Daniel Marshall	General Counsel	California Earthquake Authority
USA	Joseph Zuber	Senior Counsel	California Earthquake Authority
Other Participants			
Caribbean	Myron Chin	GEM Operational Manager	UWI Seismic Research Centre (SRC)
Caribbean	Lloyd Lynch	Research Fellow	UWI Seismic Research Centre (SRC)

Country	Name	Position	Organisation
Barbados	Jeremy Collymore	Executive Director	Caribbean Disaster Emergency Management Agency (CDEMA)
Jamaica	Ronald Jackson	Director General	Office of Disaster Preparedness and Emergency Management (ODPEM)
Jamaica	Barbara Carby	Director	UWI Disaster Risk Reduction Centre (DRRC)
Jamaica	Hillary Alexander	Permanent Secretary	Ministry of Energy and Mining
Barbados	Desiree Cherebin	Board Member	CCRIF
Jamaica	Simon Young	CEO, CaribRM, Facility Supervisor	CCRIF
Barbados	Ekhosuehi Iyahun	Programme Manager, CaribRM	CCRIF
Jamaica	Elizabeth Emanuel	Sustainability Managers	CCRIF
USA	Gina Sanguinetti Phillips	Sustainability Managers	CCRIF
Cayman Islands	James Rawcliffe	Sagicor Insurance Managers	CCRIF
Other Participants at the Opening Ceremony			
Barbados	Warren Smith	President	Caribbean Development Bank (CDB)
Jamaica	Devon Rowe	Director General	Ministry of Finance
Jamaica	Marie Legault	Head, Development and Co-operation	Canadian International Development Agency (CIDA)
Jamaica	Giorgio Valentini	Country Representative	World Bank

Day 1

Opening Ceremony and Welcome Dinner

Agenda for the Opening Ceremony:

- Welcome and Opening Remarks – Mr. Milo Pearson, Chairman of 6th Meeting of the WFCP and Executive Chairman, CCRIF
- Welcome from the Government of Jamaica, Mr. Devon Rowe, Director General, Ministry of Finance, Jamaica
- Remarks from CCRIF – Mrs. Desirée Cherebin, Caribbean Development Bank-nominated board member
- Guest Speaker – Dr. Warren Smith, President, Caribbean Development Bank [\[Remarks\]](#)
- Closing Remarks – Dr. Simon Young, CEO, Caribbean Risk Managers, Facility Supervisor, CCRIF



At the Opening Ceremony (left to right) Mr. Devon Rowe, Director General, Ministry of Finance, Jamaica; Mrs. Desirée Cherebin, CCRIF Board Member; Dr. Warren Smith, President, Caribbean Development Bank and former board member of CCRIF; Mr. Milo Pearson, Chairman of 6th Meeting of the WFCP and Executive Chairman, CCRIF

Some of the Highlights of the Opening Ceremony and Welcome Dinner



Day 2

Natural Catastrophes, Comprehensive Disaster Management in the Caribbean and New Initiatives

Day 2 focused on:

- Discussion of recovery efforts and lessons learned from three major catastrophes in 2010 and 2011 – the earthquakes that occurred in Japan (March 2011 – and accompanying tsunami), New Zealand (February 2011) and Haiti (January 2010)
- Sharing the Caribbean experiences in comprehensive disaster management (CDM) and learning about the Caribbean hazard risk landscape
- Some new initiatives in disaster risk management

In order to facilitate the exchange of information among WFCP members and persons from the host region, representatives of Caribbean institutions responsible for aspects of disaster risk management participated in the discussions on Day 2. These representatives were:

- Mr. Ronald Jackson, Director General, Office of Disaster Preparedness and Emergency Management, Jamaica
- Mr. Jeremy Collymore, Executive Director, Caribbean Disaster Emergency Management Agency
- Dr. Myron Chin, Global Earthquake Model (GEM) Operational Manager and Mr. Lloyd Lynch, Research Fellow, University of the West Indies (UWI) Seismic Research Centre
- Mrs. Hillary Alexander, Permanent Secretary, Ministry of Energy and Mining, Jamaica
- Dr. Barbara Carby, Director, UWI Disaster Risk Reduction Centre

Session 1: Natural Catastrophes in 2010 & 2011, Recovery Efforts and Lessons Learned

Facilitated by Dr. Simon Young, CEO, Caribbean Risk Managers, Facility Supervisor, CCRIF

Presentation #1: Response to the Great East Japan Earthquake by General Insurance Industry

Presented by Ms Ekhosuehi Iyehen, Programme Manager, Caribbean Risk Managers on behalf of Mr. Tadashi Baba, Managing Director, Japan Earthquake Reinsurance
[\[Presentation\]](#)



This presentation focused on the earthquake that occurred in Japan on March 11, 2011. It began by providing a context of the hazard landscape in which Japan exists. Japan is exposed to many natural hazards ranging from typhoons and earthquakes to volcanic eruptions. These hazards, which occur frequently, have resulted in loss of lives and well as serious impacts to the country's economy. Structuring an earthquake insurance system in Japan has not proven to be an easy task and it took a number of years to develop into what it is today. Significant discussions were held prior to the formation of the insurance system from as far back as 1878. Following these discussions, earthquake insurance in Japan was officially launched in 1966; this was triggered by the 7.5 magnitude Nigata earthquake in 1964.

In order to ensure that this earthquake insurance system was sustainable, the Government provided financial support for insurance responsibility. Additionally, at the launch of the programme, the Government announced laws concerning earthquake insurance as well as enforcement orders and regulations for enforcing these orders. During this time, the Japan Earthquake Reinsurance Company (JERC) was established as a mediator between the Government and the non-life insurance companies under this system. The JERC provides coverage for residential buildings and household properties, with its scope of coverage being fires, burial or floods resulting from earthquakes, volcanic eruptions and tsunamis. The aggregate limit of indemnity is JPY 5.5 trillion (US\$ 58 billion) per any one occurrence. The primary role of the Japan Earthquake Reinsurance Company is to ensure that there is prompt and adequate payment to insurance companies after an event has occurred.

A probabilistic seismic hazard map was shown to give a sense of the areas of exposure in Japan. The map showed that there was significant exposure to the south east of the country in areas such as Tokyo. In terms of the March 2011 9.0 magnitude earthquake, the epicenter was located in the Pacific Coast off the northeastern part of the Japanese mainland, resulting in tsunamis measuring as high as 9.3 m. Approximately 15,000 people lost their lives, with 4,500 reported missing and over 5,700 treated for injuries. The economic damage to the country was estimated as of June 24 at JPY 16-25 trillion and it is expected that this figure would increase.

Lessons Learned

Some of the major lessons learned from this experience are:

- The importance of proper management of insurance claims, including honouring claims in a timely manner. This was highlighted by emphasising the role that the General Insurance Association of Japan and member companies played in ensuring that there were measurements for prompt payment of insurance claims. Prior to the occurrence of the earthquake, the General Insurance Association had developed an industry-wide master plan to better manage earthquake insurance claims. Several exercises were undertaken to determine how one would react when confronted with different scenarios. Following the March 2011 earthquake, an earthquake insurance central command was established, presided over by the Chairman of the General Insurance Association Insurance of Japan. Through this mechanism, claims were handled in a smooth manner. It is important to note that immediately following the March 11 event, the company commenced the liquidation of assets in order to make the necessary payments to the affected parties. These payments were made from estimations and by April 20, the sum of JPY 970 billion was paid. By September 28, payments to affected parties amounted to over JPY 1.1 trillion.
- Ensuring that thorough payments are made to all beneficiaries. This was ensured Japan in a number of ways – by visiting evacuation centers to deliver information and consulting services to encouraging affected beneficiaries to make insurance claims, and by actively providing information on the policy and advice to policyholders
- The need to provide assistance to consumers (policy holders) e.g. responding to enquiries about not only issues relating to earthquake policies, but also issues concerning other policies
- The importance of providing other assistance where it is possible, e.g. the Association donated 1 billion yen to the Japanese Red Cross Society

Areas for Change

Some of the areas of change that were highlighted from this event included:

- There is a need to revise the limit of total payments made by the agency. The current limit of total payment due to a single earthquake, volcanic eruption or tsunami is currently JPY 5.5 trillion. This limit was developed within the context of the Great Kanto Earthquake in 1923. Studies have indicated that the probability of another massive earthquake or earthquakes could occur.
- There is a need to revise the liability sharing between Government and non-life insurance companies. As a result of the March 11 event, insurance claims amounting to over JPY 1.1 trillion were paid out. However, a rough estimate of risk reserves by insurance companies reduced that amount to approximately JPY 7 billion. Due to this, the insurance companies requested of the Government that the liability sharing be revised. An agreement was reached and became effective on May 2, 2011.
- There is a need for a revision of the coverage in general. Some of the considerations under this challenge are: the need to increase the limit of amount insured, a revision of the premium rate structure, and an introduction of more attractive discounts for earthquake resistance construction.

This is taking place within a system that continuously evolves from its original structure in 1966.

Presentation #2: Planning for Disasters and Responding to Unforeseen Complexity: The First Large Test for the New Zealand Earthquake Commission

Presented by Dr. Simon Young, on behalf of Mr. Ian Simpson, Chief Executive, and Mr. Hugh Cowan, General Manager for Research & Education, Earthquake Commission, New Zealand [[Presentation](#)]



A brief overview was provided of the Earthquake Commission (EQC) which has been in existence since 1945. The Acts that control the Commission were reviewed in 1993 when it officially became the Earthquake Commission, a Crown Entity within New Zealand. The Commission covers residential properties but not commercial properties. It is a compulsory addition to household policies covering up to NZ \$100,000 per household for buildings and NZ \$20,000 for contents and also provides coverage for residential land. Interestingly, all disaster claims are settled in cash. This has been the tradition for previous claims from EQC.

Following the Canterbury Earthquake, the role of the EQC was amended as follows:

1. The EQC is now the Project Manager through a contract with Fletcher Construction for the physical repair of an estimated 100,000 houses.

2. They are designing and supervising NZ\$ 140 million of additional land remediation work in certain parts of Christchurch
3. They are providing key engineering advice on a broader policy basis for future planning in the Greater Christchurch area
4. They are providing social assistance through various means in association with the emergency response agencies in New Zealand

Overview of the 2010-2011 Earthquakes

The initial 7.0 magnitude earthquake occurred on September 4, 2010 in New Zealand, followed by a number of aftershocks. The second occurred on the February 22, 2011, measuring at 6.3. This earthquake was much closer to the Christchurch area and as such did more damage. It is important to note that the 2010-2011 earthquakes represent New Zealand's most severe losses since the 1920s-1940s. The Canterbury Earthquake series is five times bigger than the large-scale event for which the 2009 External Review recommended that the EQC plan. Following that major earthquake, over 400,000 claims were lodged, most of which were for houses. Total payments was approximately NZ\$1.4 billion.

Fletcher Construction Company was contracted by the insurance company to repair approximately 50,000 houses at an average of NZ\$25,000 per house. As Project Managers, Fletcher Construction Company utilised the services of local tradesmen and contractors to aid in the repair process. The National Disaster Fund provided an initial buffer as it was designed to do. Coupled with reinsurance, it has absorbed NZ\$10.8 billion dollars of an estimated NZ\$11.6 billion residential cost.

As an aside, Dr. Young stated that one lesson learned from the Chile earthquake in 2010 was the importance of having an individual who was trained in the native language to communicate effectively with the necessary individuals to aid in the recovery process.

New Zealand's early warning system, GEONET has since been scaled up to support national research and community monitoring of geographical hazards. It is a non-profit entity with all data being available to the public. There is an inclusion of:

- Mentoring and networking arrangements within GEONET
- Scholarships and training

This early warning system is built on four Rs:

- **Reduction** – through supporting high quality research among other things
- **Readiness** – through the development of new hazard detection
- **Response** – through the provision of a robust response mechanism

- **Recovery** – through the contribution of reliable information to assist damage assessment.

Presentation #3: 2010 Earthquake in Haiti – Update on Recovery Efforts and Lessons Learned Presented by Mr. Ronald Jackson, Director General of the Office of Disaster Preparedness and Emergency Management (ODPEM), Jamaica [[Presentation](#)]

The presentation provided a brief overview of the earthquake in Haiti and other major catastrophes in 2010. In this year, earthquakes accounted for 76% of all natural catastrophes. Approximately 220,000 persons lost their lives as a result of the earthquake in Haiti; over 300,000 were injured with 1.5 million now living in shelters and tents. The earthquake caused extensive damage to the infrastructure of the country, including court houses, schools and hospitals. Economic impact to the country was over 120% of the GDP with an estimated loss of US \$7.8b. Environmentally, the threat of cholera is a major cause for concern - over 500,000 persons contracted the disease, resulting in over 5,000 deaths. Water management issues and the need to use mass graves are also causes for concern. The distinction between recovery from the earthquake in Haiti and other global catastrophes, such as Katrina, is the state of the Haitian economy. The earthquake challenged that country's ability to recover and rebuild beyond their existing capacities. The earthquake caused further damage to an already weakened infrastructure. Following the earthquake, international agencies and NGOs arrived in Haiti providing support including search and rescue, medical care and security. CARICOM's presence was felt within the first 24-48 hours following the event, providing medical support among other services.



Some of the immediate disaster risk management activities which took place following the earthquake were:

- preparing for the 2010/2011 rainy season, given the massive displacement that occurred on the ground and the need to provide shelter for the individuals.
- identifying risk areas, such as large areas of land masses where rain could trigger slope failure
- ensuring that victims were secure
- strengthening the alert and evacuation system for the weather related events
- incorporating environmental aspects into the decision-making process

- building disaster risk management measurement into the reconstruction process. Aspects of the building code will be reviewed and incorporated into this process as well as infrastructural damage was disastrous for the country.

Focus areas during the recovery period going forward, include:

- Governance
- Regional development – looking at land tenure management and decentralization. Many persons were encouraged to relocate to other areas of the country that were not seriously affected. This also had its own challenges, as without the proper infrastructural support, people who were already vulnerable were moving into areas that were not readily able to support them
- Environment
- Social sectors
- Infrastructural rehabilitation
- Production sectors
- Cross-cutting sectors

Lessons Learned (Nationally)

- The civil protection entity needs to be strengthened to drive the process of risk and overall comprehensive disaster management
- Multi-hazard maps are needed and they must be used to guide development planning
- Building codes must be created, published and legislated and adopted where necessary
- Emergency communication is critical to the recovery process
- Search and rescue teams need to be established, equipped and trained
- Hazard resistance shelters need to be built throughout the country
- Risk communication, public awareness and education are critical components for all hazards, but in particular regarding the seismic risk since Haiti is vulnerable to seismic activity

Lessons Learned (Regionally)

- Regional response mechanisms must be strengthened
- Building capacity of response teams is necessary

Questions/Comments on Session 1

1. Daniel Marshall (California Earthquake Authority), in responding to earlier comments on comparing the New Zealand situation with other countries, stated that in Japan, 40%-50% of households have insurance coverage for earthquakes, in New Zealand 95% or better, and

in California, household coverage for earthquake is 10% or less. Mr. Marshall noted that the Earthquake Commission (EQC) in New Zealand is overwhelmed with the number of claims following all the earthquakes which have occurred in different areas of Canterbury. EQC has been able to go from paying individuals for earthquake damage to utilising the services of a construction company to rebuild homes. This is something that the Earthquake Authority in California is not able to do.

He further stated that New Zealand and Japan are known for social cohesion. However, in New Zealand there is reported to be growing controversy about the speed at which claims are being handled. In light of the fact that less than 10% of the population in California has earthquake insurance, a major catastrophe will require a large Government effort if more people are not insured, similar to the situation after Hurricane Katrina affected Louisiana.

2. Dr. Young noted that the penetration of commercial insurance in Chile was relatively high. However, unlike other vulnerable countries, the Government does not have a national programme. In terms of the economic projections of the impacts, it is clear that despite the fact that the process of settling claims has been slow, the private insurance markets have provided a huge buffer to reduce the national economic impact.
3. Ms Hulda Árnadóttir (Icelandic Catastrophe Insurance) spoke to the hubs mentioned by Dr. Young in his presentation on New Zealand. She stated that they are hubs for reconstruction work in Christchurch. The city is divided into 17 hubs, each of which has a specific sector for which they control the construction plans. She noted that as a result of her visit to New Zealand, Iceland has now changed their policies from planning for the expected events, to planning for the unexpected.
4. Mr. Laurent Mantador (Caisse Centrale de Réassurance, France) noted that the Government has taken measures to audit nuclear plants in all areas of France as a precautionary measure. Like other countries, France also faces complexities in insurance claims following catastrophic events.
5. Mr. Jeremy Collymore (Caribbean Disaster Emergency Management Agency) questioned how our preparation for these events would affect the way we do business.
6. Mr. Lloyd Lynch (UWI Seismic Research Centre) commented that the Japan and New Zealand events are examples of extreme events and protracted events and the effects on

disaster planning. It makes it clear for us in the Caribbean that we should rethink our method of planning for expected or unexpected events.

7. Dr. Barbara Carby (UWI Disaster Risk Reduction Centre) highlighted the fact that we are too dependent on our past experience to plan for the future, which has resulted in many problems not only for addressing geo-hazards but also for climate change. She suggested therefore that we should plan with the most current data or recognise the lack thereof.
8. Mrs. Hillary Alexander (Ministry of Energy and Mining, Jamaica) agreed that there is need to change the parameters of how disasters are viewed. She agreed that multi-hazard maps are needed, as mentioned in Ronald Jackson's presentation, and that they are an absolute necessity for planning especially for the Caribbean. She noted that one challenge to the resilience of some of these countries is the access to funding. The cost of resilience has increased, resulting in more persons avoiding the cost of that insurance, hoping that such an event will not affect them negatively. Therefore, as a next step, we should interpret the data that we have, setting it against some forward-thinking models and examining the risk and cost. This will help decision makers to determine the tradeoff of persons avoiding that resilience available to them, and what it would mean for Governments who are now vulnerable.

Session 2: Experiences and Lessons Learned from the Caribbean

Facilitated by Dr. Simon Young, CEO, Caribbean Risk Managers, Facility Supervisor, CCRIF

Presentation #4: A Decade of Comprehensive Disaster Management: Transforming DRM Policy and Practice

Presented by Mr. Jeremy Collymore, Executive Director, Caribbean Disaster Emergency Management Agency (CDEMA) [[Presentation](#)]



This presentation focused on a framework for managing risks in the Caribbean, the second most hazard-prone region in the world. The framework is based on an intergovernmental agreement incorporating a wide geographical area covering 18

small states. These include Belize in Central America, Bahamas in the Northwest, and Guyana and Suriname, among others. In the 1990s, there was a series of events which reinforced the fact that the Caribbean region was forced to deal with more than only the traditional hurricanes/cyclones.

- How do we deal with these events that have become a part of our landscape?

In the 1990s, the governments decided that the first intergovernmental agreement for cooperation in this area for disaster risk management was needed, requiring dialogue and engagement with our partners regarding protecting future generations. It was within that context that the issue of disaster management was seen as an area for discussion.

- How do we manage the diversity of threats? Who are the actors to be involved in this process?

Simple disaster response will not solve the problem of natural hazards; the Region must find comprehensive solutions, which may change the character of a culture. For the Caribbean, it represented a paradigm shift from what was essentially a reactive exercise, for example, focusing on an office/organization to something that was more anticipatory. In this proactive approach, the responsibility was to be shared among those who contribute to the risk and those who manage that risk. Therefore, how we measure achievement is critical: we need to address the sectors where the productive actors are engaged.

By referring to sustainable regional development, this agenda was teamed with the highest political discourse in the region. The Barbados Programme of Action spoke to the issue of sustainable development of small island developing states, including those in the Caribbean.

Because the problem is viewed as being political as well as developmental, the purpose was to build capacities across all levels, including the community level, for future threats associated with climate change, as well as the hydro-meteorological hazards.

The four outcomes of this new approach are:

- Building institutional capacity
- Empowerment through knowledge management and related tools and services
- Mainstreaming disaster management within sectors which are key drivers of development in the economy
- Strengthening traditional disaster management policies

Building capacity required generating the types of skills and programmes to achieve those goals. Strengthening institutions and policies is also critical. Standards, tools and models are the

common threads which hold these actors together. Also, while there is a need for Emergency Risk Managers, there is a greater need for leaders.

Institutional Strengthening

A system of annual dialogue has been established among all the partners which are involved in comprehensive disaster management. There is also a CDM council which brings together individuals from all sectors to discuss priority areas and ways in which the agenda can be coalesced around one common goal. CDEMA has undergone changes as well, ensuring that it possesses the requisite skills. This process is not yet complete.

Programmes have been initiated in some states and have been modeled in others for adaptation at the country level. Strategically, it is very important that donors and policy makers are updated frequently. There is inadequate structured research and teaching to support the demands of this new direction. One of the goals of CDEMA to address this gap is the development of a regional training centre. Key economic sectors are addressing disaster management and climate change. The Caribbean Tourism Organization is developing a risk management policy for this sector, which is very concerned about climate change. This has been accepted by the Board of CDEMA as well as by Ministers of Tourism and is now being revised to include issues on climate change. This sector recognizes the implications of risk management for its facilities. Similar efforts are taking place in the health sector, in which the lead partner is the Pan American Health Organization.

The agricultural sector has largely been neglected in the region. However, in recent years, an initiative by the President of Guyana, called the Jagdeo initiative, was established. CDEMA has made the risk management subcommittee of the CDM strategy a part of the Regional Agricultural Policy for the Caribbean.

The region is divided into four operational areas:

- The Northwest with Jamaica and Belize
- The Southern Region with Trinidad, Suriname and Grenada
- The Central Region with Antigua & Barbuda
- The Eastern Region with Barbados

There are operational plans/procedures and standby teams. A mechanism has also been established for deployment in providing support to member States. Given the magnitude and frequency of some events, CDEMA is under-resourced. Therefore, one strategy being implemented is building the organisation's capacity. CDEMA also recognises the need to have a sense of what is happening in each country and has developed audit standards to be used by partners for assessments, thereby ensuring that all members are measuring the same factors.

Disaster management is seen as the front runner of preparation for climate change adaptation. Therefore, CDEMA has started to make all programmes climate sensitive.

Looking forward – key issues

- Having a policy that is not driven by intuition, but by science. The CDEMA governance system has incorporated the Seismic Research Center, the Caribbean Community Climate Change Centre, the Caribbean Institute of Meteorology and Hydrology, the Regional Security System and the University of the West Indies as part of the technical discourse
- Providing a risk profiling platform to drive risk reduction and transfer development and investment planning to enhance response planning
- Addressing professionalization of practice
- Popularising risk information using social networks to get information out to stakeholders
- Deepening and accelerating ICT and geo-technology in DRM
- Strengthening private sector support/involvement
- Creating sustainable financing for DRM

The Caribbean has started on a journey to structure CDEMA to harmonise the dialogue and agenda for reducing risks. CDEMA welcomes the presence of diverse partners in risk transfer and risk management to fostering dialogue. Mr. Collymore encouraged the WFCP planners to invite risk managers to be part of this dialogue on some of the new issues. This was endorsed by Dr. Young, who stated that there needs to be more dialogue between the disaster management community and the risk transference/insurance community. He added that the climate change discussions mentioned by Mr. Collymore include interest in insurance mechanisms to help deal with climate change adaptation and that CCRIF is integrally involved in that process.

Presentation #5: Lessons Learned from the Hazard Management Experience of Jamaica and applicability to other Small Island Developing States (SIDS)

Presented by Mr. Ronald Jackson [[Presentation](#)]

In Jamaica, throughout the period, 1980 to 2008, there have been 27 major events resulting in a total of US \$2.599b in damages and causing 210 deaths. During these years, 52% of the deaths have been attributed to storms while 46% as a result of floods. Therefore, while we have the mammoth task of dealing with tropical cyclones and their impacts on communities, we are also faced with the task of dealing with periods of excessive rainfall, which lead to significant losses in the agricultural sector, damages to infrastructure and lost lives. Some of the challenges in addressing these natural events include:

- A high number of under-insured entities with some communities being uninsurable due to high risk
- Increasing frequency and magnitude of events over the last decade
- Limited land resources which need to be handled effectively

These all have an impact on sustained development, alleviation of poverty and achievement of the millennium development goals.

The development of hazard management in Jamaica is linked to a formal practice of dealing with risk in Jamaica stemming from the 1979 flood, resulting in 40 deaths and over JM \$27m in losses. This gave rise to an organisation that was charged in 1980 with providing two main services to the Jamaican public. These were:

- Coordinating emergency response; and
- Educating the public about risks and hazards and how they interact.

That was the beginning of what is now the Office of Disaster Preparedness and Emergency Management (ODPEM). The focus of this organisation is on reducing community vulnerability while ensuring that the capacities exist to respond to hazard events.

In 1981, the Pan-Caribbean Disaster Preparedness and Prevention Project was established with the mandate to spearhead regional efforts at improving disaster preparedness in the Caribbean. This eventually became the Caribbean Disaster Emergency Management Agency (CDEMA).

In terms of policy linkages, Vision 2030 Jamaica – Jamaica’s National Development Plan, developed approximately 5 years ago, provides a strategic approach at the national level, linking all agendas to one national roadmap for development. Disaster risk management and climate change adaptation played a significant role in this plan which seeks to link all policies to the national goal of achieving developed country status by 2030.

While ODPEM has improved disaster management in Jamaica, efforts are stymied by the failure to adequately enforce existing regulatory planning provisions, which leads to informal settlements being built, and to formal settlements being built in areas that are environmentally sensitive.

Lessons Learned – Success Factors

- Building trust and a reputation within the organization – done partly through the establishment by statute that the head of the organisation was not a political appointee

- Establishment of a legislative framework which focused on the future
- An organisational development and visioning process which ensured that the organisation would be a comprehensive disaster management agency looking at aspects such as preparedness and prevention
- Partnerships with key private sector partners
- Knowledge building and capacity strengthening
- Strengthening of credibility through communication
- Development of community-based DRM programmes
- Engagement of volunteers
- The process of recording losses, which led to further attention by the political directorate, policy level actors and private sector
- Integration of hazard information into development planning and the approval process
- Creation of an environment for technology integration
- Development of a National Development Road Map which will include DRM and climate change adaptation
- Establishing of a thematic working group for disaster risk reduction and climate change

Areas for further improvement

- Use of quantitative methods for promotion of risk reduction such as cost benefit analysis
- Development of country-specific indicators for vulnerability and risk
- Further integration of DRR into other sectors of the economy
- Further multi-hazard mapping
- Development of risk information and decision support systems
- Improvement of the central development and enforcement processes

The success is attributable to strong institutional and legal frameworks. Some of the areas for which challenges still exist include strengthening the legal frameworks of other entities, while improving on the ODPEM's own legal framework. Inadequate resources and inconsistencies in political commitments and weak enforcement regimes are also areas that pose a challenge for our goal of building national resilience.

Presentation #6: Global Earthquake Model (GEM) and the Seismic Research Centre (SRC) in the Caribbean - Their Role in Catastrophe Risk Reduction

Presented by Mr. Lloyd Lynch, Research Fellow, and Dr. Myron Chin, GEM Operational Manager, UWI Seismic Research Centre [[Presentation](#)]

The Caribbean is prone to natural and man-made disasters, and approximately US\$ 1.5 billion has been spent to recover from these disasters each year, for the past several years. Organizations such as ODPEM, CCRIF and CDEMA have been actively working on the ground, responding to needs of the citizens of the region immediately following these disasters. Today, the Global Earthquake Model (GEM) has joined that group. Most of the damage costs were attributed to issues relating to ineffective building systems and deficient quality control.

Lessons Learned

One of the main lessons learned is that early warning systems save lives. This is one of the messages being promoted by GEM. Areas such as Montego Bay and Kingston in Jamaica, San Fernando in Trinidad and Santiago de Cuba should accelerate their earthquake reduction/preparedness programmes because they are located near surface active faults that could generate strong ground motion. In comparison, countries such as New Zealand and Chile have witnessed shorter recovery times due to consistent investments in earthquake risk reduction activities such as emergency response systems.

Priority Actions for Earthquake Risk Reduction in Latin America and the Caribbean

- Establish sustained public awareness programmes focused on earthquake risk
- Strengthen institutional capacities to make important in development planning
- Eradicate or minimize corruption and malpractice
- Improve the safety of existing stock, giving preference to essential high risk facilities
- Set specific commitments

GEM was launched in May 2011 and is a collaborative model designed and launched by OECD's Global Science Forum. Its aim is to engage the "global community in the design, development and deployment of uniform open standards and tools for earthquake risk assessment worldwide." It is a public-private partnership of approximately 10 countries and 7 private organisations. GEM is a dynamic, comprehensive, state-of-the-art interactive model; it is community-based and open access, provides global coverage, and serves a multitude of users.

Based on funding of €40,000 received by the Seismic Research Center, Dr. Chin was employed as the Operational Manager for the Caribbean. The main objective of this appointment is to spearhead the implementation of the GEM initiative in the Caribbean and to ensure the effective functioning of the GEM Regional Programme for the Caribbean. A three-day workshop was held in Trinidad from May 2 to 4, 2011 to launch GEM's Regional Programme in the Insular

Caribbean. An outcome of this workshop was the formation of 7 working groups to look at the following topics related to earthquake risk reduction:

- Active faults
- Seismicity (instrumental and historical)
- Probabilistic seismic hazard assessment and ground motion prediction equations for the Caribbean and Central American region
- Site effects
- Exposure
- Vulnerability
- Socio-economic impact

Presentation #6: Economics of Climate Adaptation in the Caribbean

Presented by Ms Ekhosuehi Iyehen [[Presentation](#)]

CCRIF recently supported the first phase of a study of the economics of climate adaptation (ECA) for the Caribbean. This study quantified the impacts of climate change on risk, and identified ways to cost-effectively adapt to climate change at national and sectoral levels. The objective of the ECA study was to provide decision makers with facts and a common approach to assess and address any location's total climate risk in a cost effective manner.



The ECA programme was piloted in eight countries: the Cayman Islands, Jamaica, Bermuda, Anguilla, Antigua and Barbuda, Dominica, St. Lucia, and Barbados; and examined four factors: wind, coastal flooding/storm surge, inland flooding, and salinisation.

Results of the ECA study

- Climate change threatens Caribbean development
- Annual expected losses amount to up to 6% of GDP, could increase by a further 1-3% of GDP by 2030

Climate change can severely modify the risk profile of any country by impacting sea levels, hurricane intensity and temperature patterns. Small local changes may have large effects due

to the non-linear correlations between climate and hazards. Climate adaptation measures that can be implemented include:

- Risk mitigation focusing on measures aimed at reducing the damage; and
- Risk transfer focusing on limiting the financial impact for people affected by transferring part of the risk to a third party.

Next Steps

Each country should:

- understand its risk profile today and in the future
- specify its risk appetite in line with national development priorities
- calculate an adaptation business case including investment plan
- develop a roadmap including priority initiatives

Session 3: New Initiatives

Facilitated by Ms Ekhosuehi Iyehen, Programme Manager, Caribbean Risk Managers, Facility Supervisor, CCRIF

Presentation #7: Exploring innovative climate risk management solutions in the Caribbean

Presented by Dr. Simon Young [[Presentation](#)]

The Caribbean is highly climate-exposed and as such will serve as a good area for the testing and implementation of innovative climate risk management solutions. CCRIF and CaribRM are involved in two projects: MCII/BMU insurance/adaptation project, being funded by the German Government; and MiCRO, a new public-private partnership implementing innovative catastrophe microinsurance solutions.

CCRIF is a partner in the MCII project which focuses on the Caribbean and it is promoting a multi-sectoral approach to protect vulnerable livelihoods. The project was developed in response to various enquiries from groups to the UNFCCC regarding how insurance tools can be used to protect those most vulnerable to weather risks in the developing world.

The main aims of this project are to:

- Overcome barriers and facilitate safety nets for vulnerable individuals
- Link insurance solutions to disaster risk reduction

- Demonstrate the value of a regional facility for achieving these aims. This is the duty of CCRIF

It is being proposed that three possible viable products will be developed, tested and implemented, and may include:

- a pure weather hedge for small scale farmers and day labourers who are exposed to their income stream being impacted by a major weather catastrophe
- weather index insurance which specifically facilitates access to credit – aimed at multi-cropping small scale farmers who in the current situation have great difficulty in accessing credit
- a lender portfolio-level insurance product working with microfinance/agricultural banks and other financial institutions that cater to low-income groups.

A proposal is being put forward that one or more of the products is to be launched in five countries: Belize, Guyana, Jamaica, Grenada and Saint Lucia.

Additional aspects of this project include:

- Linking insurance products to disaster risk reduction which includes a link to early warning systems
- Acting as a lighthouse project to demonstrate use of insurance instruments at the micro-level, and linking to a regional risk pool within the UNFCCC process. There is a work stream within the project which is a link to the UNFCCC process, sharing the lessons learned from the project within the international discussions.

CaribRM is working on the second project, called MiCRO – the Micro Insurance Catastrophe Risk Organisation. It is a public/private partnership which started out delivering catastrophe microinsurance to Haiti's micro entrepreneurs. The project came into effect a few years ago after the 2008 flooding in Haiti. After the 2010 earthquake event, Haiti's leading micro financing institutions had to be recapitalised since all of its loan programmes (greater than 98% repayment rate) had a 60%/70% default rate for all loans that were outstanding at the time of the impact.

CaribRM was asked to look at ways through which the micro finance institutions could better manage their risk to loan defaults from natural catastrophes. Fonkoze was established right around the time of the earthquake and this provided new loans or erased loans after the earthquake as though an insurance policy had been in place. Donor funding was received to implement this project. Due to its success, interest was generated for other organisations to

join the project. It uses a hybrid risk transfer process to bring the efficiencies of parametric products and the basis risk coverage together.

All of Fonkoze's clients are now covered by this insurance programme. It is obligatory for the clients and protects them if their means of doing business is destroyed by a natural disaster. Clients submit their claims and the qualifying losses are reimbursed through the loan balance. They can then qualify for a new loan to capitalise their business as needed. As a result of extreme rainfall in southwestern Haiti, there was a US\$1.05 million parametric payout on behalf of Fonkoze. Additionally, approximately 3,900 Fonkoze clients received funds to recover their businesses, repair damaged houses and replace assets.

Presentation #8: New CEA (California Earthquake Authority), Cat bond and US Federal Legislation

Presented by Mr. Daniel Marshall, General Counsel, California Earthquake Authority
[\[Presentation\]](#)

The California Earthquake Authority (CEA) is a publicly managed, privately financed residential earthquake insurer. With more than 800,000 policies in force, the CEA is the largest residential earthquake provider in the United States. While California is very exposed to earthquakes, only 10% of the residents have earthquake insurance. The CEA is not supported by the Government. Forty percent (40%) of CEA policyholder premium goes to reinsurers.

The way forward for the CEA is to diversify capital sources with post-event, guaranteed debt to:

- Reduce policyholders costs
- Increase CEA's ability to offer more coverage options
- Improve long-term stability of the CEA
- Provide more households with earthquake insurance at less cost to federal/state treasuries
- Facilitate faster and more complete community economic recovery post-event

There is currently an Earthquake Insurance Affordability Act in both the United States Senate and the House of Representatives that would authorise US Treasury to create a committed federal guarantee for post event bonds issued by eligible state programmes, at a total guarantee commitment of US\$5 billion, allowing other states to create earthquake authorities.

Presentation #9: Diversifying Risk: Accessing Capital Markets through Transformer Reinsurance

Presented by Mr. Joseph Zuber, Senior Counsel, California Earthquake Authority
[\[Presentation\]](#)

The CEA is one of the largest purchasers of reinsurance in the world, averaging approximately US\$3 billion per year in recent years. There is a limited amount of reinsurance for California earthquakes available on the world market. Therefore, the CEA has continued to source risk transfer at the lowest possible cost. Accessing capital markets has been a major aim for the CEA which would diversify its pool of risk transfer counterparties and expand the available sources as well as its risk transfer capacity. The CEA Transformer Reinsurance Programme will seek to obtain risk transfer at a cost that is lower than traditional reinsurance pricing. It will make provisions for a repeatable reinsurance contract for the future, while securing a multi-year, fully collateralised risk-transfer source. The CEA worked with entities that formed a special purpose reinsurance vehicle in Bermuda that issued a reinsurance contract to the CEA. However, that contract would be fully funded through selling notes in the capital markets. The funds which were garnered through selling those notes would be placed into a trust account that would fund claims payments to the CEA in the full amount of the reinsurance limit. The benefits of this transaction are that:

- It is repeatable
- It is the same structure, something that can be done very quickly without extensive drafting of new contract documents. This will also make investors comfortable with the transaction.
- It is a full indemnity transaction. There are no parametric triggers
- It expands the available pool of risk transfer beyond the traditional reinsurance market
- It provides a diversification opportunity for insurance linked security investors

Questions/Comments on Session 3

1. Dr. Young Simon – What are the potential cost savings on modeling?

Ans. Modeling would be similar, the risks are the same, and the rating has not yet decided.

2. Mr. Milo Pearson – What are the odds of passage of federal legislation in California?

Ans. The possibility is very low, reflecting a 15-20% chance. However, support among states is being built.

3. Mr. Lloyd Lynch – Will the strategy of diversification reduce the incidence of insolvency after a large impact? Could savings be passed on to policy holders in such a way as to improve penetration?

Ans. Mr. Marshall stated that making the organisation more sustainable is key. There are a number of strategies, including that of diversification. Everything that is done by the CEA will either be geared towards the sustainability, capital preservation or it will be aimed at reducing the prices, making the products richer and making the share of the cost lower for the consumer.

4. Mr. Jeremy Collymore – What is the future of microinsurance? Is it large-scale/widespread risk transfer for some of the CARICOM members?

Ans. Dr. Young noted that the Caribbean is perhaps not the best place to test if it will have a widespread effect as micro finance as a broader group is not well developed. Credit unions are serving that purpose. The aim of the micro insurance is to bridge the gap between the traditional tools relating to catastrophe risk and bringing some amount of relief for the most vulnerable. As a public safety net, microinsurance brings more tools to the forefront to help participants to recognise the risk they face, and help them to reduce those risks as well as to provide them with tools that can help them recover. The potential is great for the future of microinsurance.

Session 4: Summary/Recap

Facilitated by Mr. Milo Pearson, Chairman

Mr. Pearson noted that the presentations from Japan and New Zealand were a good addition to the meeting, in the absence of the original presenters. He noted that a conscious effort was made to include a discussion on Haiti, as it is important for us as a region, but more importantly, it was a major catastrophe in 2010 and there are lessons to be learned as a result.

The earlier discussions on the activities being undertaken by some members were important, since, despite the fact that all are CAT risk pools, each operates differently. The issue of addressing nuclear plants was discussed. Mr. Pearson recalled the comment made by Ms Árnadóttir from Iceland: that Iceland now needs to look outside the country for help regarding how to address nuclear plants. Climate change has been studied extensively throughout the region with Phase two of the ECA project to be launched and funded by CCRIF. Additional funding to defray the cost is also being sought. Microinsurance, discussed by Dr. Young is an

important issue for our region and also has applicability for other developing nations around the world.

Lessons Learned

As a group, the WFCP must start focusing on post-disaster issues stemming, for example, from the issues in Japan and New Zealand. There is continued need for investments in risk mitigation to support risk transference instruments. Tools to understand underlying risks are important in decision making as it relates to risk management. There is a continuous need to improve on hazard mapping, data collection, early warning systems, effective development planning, which are all important within the context of climate change. Innovative initiatives such as the GEM project, MiCRO and economics of climate adaptation will provide valuable information and operationalise new approaches. They all have important elements that we can adopt and adapt for our own organisations.



Participants at the WFCP meeting: (from left to right) Sophia Hsu (TREIF, Taiwan), Nora Chang (TREIF, Taiwan), Patrick Bidan (CCR, France), Christiane de Bondy (GAREAT, France), Gunn Eide (NAA, Norway), Joe Zuber (CEA, USA), Peter Schneider (IRV, Switzerland)

Day 3



Participants at the WFCP meeting: (from left to right) Hulda Árnadóttir (ICI, Iceland), Marius Bulugea (PAID, Romania), Radu Popescu (PAID, Romania), Ekhosuehi Iyahen (CCRIF), Laurent Montador (CCR, France), Alfonso Nájera (CCS, Spain)

WFCP Member Updates and Business Meeting

Day 3 focused on updates by the members of the World Forum and also included the annual business meeting. The first session began with a presentation on terrorism insurance pools by Alfonso Nájera, Director of Spain's Consorcio de Compensación de Seguros (CCS). The remainder of this session consisted of member countries presenting their updates on activities over the past year.

Session 1: WFCP Member Updates

Facilitated by Mr. Milo Pearson, Chairman

Presentation #10: Terrorism insurance: a diversity of solutions

Mr. Alfonso Nájera, Director, Consorcio de Compensación de Seguros (CCS), Spain
[\[Presentation\]](#)

The presentation focused on ten terrorism coverage schemes and was accompanied by a [handout](#) with a table providing details about each scheme. The ten schemes were:

- Australia: ARPC
- Austria: OVDT
- Belgium: TRIP
- Denmark: TIPNLI
- France: GAREAT
- Germany: EXTREMUS
- Netherlands: NHT
- Spain: CCS
- United Kingdom: POOL RE
- United States of America: TRIP

Presentation #11: Terrorism Schemes in the World. France: GAREAT. Questions and Issues

Ms Christiane de Bondy, Secretary General, GAREAT [[Presentation](#)]

The presentation gave an introduction to terrorism insurance schemes, presented a number of schemes in the world and described GAREAT, France's scheme.

There is no common definition of terrorism. The UN has been attempting to find one. There has been a difference regarding these schemes since September 11, 2001. Nine schemes existed before 2001; twelve have been established since then.

In France, the coverage of terrorism by insurance companies cannot be excluded from policies, as mandated by French law. Each insurance company decides the terrorism price it will charge. GAREAT was set up in 2002 to provide coverage for property damage and consequential loss arising out of acts of terrorism occurring in the French territory or in the French Overseas Departments, even when the cause originates outside France. As a market solution, it is a partnership with all the actors of the French insurance market: foreign and French insurance companies, French insurance associations, international reinsurers, the French State.

Presentation #12: Iceland Cat Fund

Ms Hulda Árnadóttir, General Manager, Icelandic Catastrophe Insurance [[Presentation](#)]

This presentation provided an introduction about the ICF, a discussion on the recent natural hazards, and a description of the risk and vulnerability models. The ICF developed out of an Act of Parliament immediately following the 1973 volcanic activity in Vestman, in the south of the

country. There were over 400 houses under lava and ash. Citizens were forced to leave the community and move to Iceland. Because there was no established fund, the Government was forced to pay for the damages. Following this and other major catastrophes, it was decided in 1976 to set up an insurance fund. The first reinsurance claim was in 2008 after the major earthquake.

Lessons Learned

The 2010-2011 New Zealand earthquakes created an avenue through which important changes were made to the ICF. Some of the lessons learned include:

- Formalizing and documenting external and internal procedures. A computer database with all the assessment work carried out by the ICF has been created. Additionally, data is stored in two separate physical locations, so that in the event of a catastrophe, it can always be accessed from anywhere in the world.
- Two committees were appointed in 2010:
 - To evaluate all departments and agencies that could be affected by natural hazards in Iceland. This committee has been working on trying to pick out every party in Iceland who has something to do with hazards in Iceland.
 - To revise the legislation of the CAT Fund. This would include a revision of three areas: have the Fund operating as a private company, as desired by the Government (Ms Árnadóttir disagrees, stating that the structure should be kept as is); drawing a footprint/benchmark indicating the level at which claims will be accepted; reduce the claim deadline, since, to date, individuals have waited for up to 10 years to claim for insurance.

It should be stated in the law that persons collecting insurance for damages to their home should use that money for repairs to their home and not for another purpose.

On March 20, 2010, the first volcanic activity for many years occurred. The Eyjafjallajökull volcano erupted in Fimmvörðuháls after months of small earthquakes under the Eyjafjallajökull glacier. A larger eruption occurred in April 2010 on Eyjafjallajökull. It is now being feared that this volcano will result in a much bigger eruption near Katla. There was also a volcanic eruption in Grímsvötn in May 2011. This had disastrous effects for farmers as their lands were destroyed; there was a lot of ash in the south east part of Iceland.

Prior to this, in 1996, the same volcano erupted, resulting in flooding. In 2004, there was a small eruption; there were no ash or floods at this time. Between 2010 and 2011, losses from volcanic eruptions amounted to less than US \$6 million; the total loss in each event was less than 7% of the ICF's deductibles.

The risk model consists of three components: hazard, exposure and vulnerability.

The vulnerability model provides high quality exposure information that could be used regarding all insured buildings in Iceland. This information was provided by the Icelandic Registry Database which stores information on every house in Iceland. Items included in this database include, the year the house was built, the type of construction, and the size. All buildings in the Property Registry Database were divided into 19 classes. These included: 10 classes of residential buildings, dependent on the material and age of the building; summer houses; garages; farm buildings; industrial buildings and service buildings. These were chosen based on the assessment conducted by the ICF, which would provide information on how much damage was done to buildings. This model can also provide information on which buildings may be damaged in an upcoming earthquake.

Conclusion

- There is a hazard model which uses state-of-the-art techniques, and includes full integration of local scientific knowledge, peer reviewed by University of Iceland
- The vulnerability functions are based on recent experience and local engineering understanding and expertise
- There is a fully geo-coded and classified portfolio

The greatest benefit for the Icelandic Cat Fund is that there is now a unique model which provides accurate information, based on previous events, thus resulting in more reasonable premium on the cover for the highest risk factor, earthquakes. It also provides an opportunity for information to be provided to reinsurance companies regarding expected total cost in an earthquake event.

Presentation #13: The Norwegian National Fund for Natural Damage Assistance: Update

Ms Gunn Eide, Head of Section, Norwegian Agricultural Authority [[Presentation](#)]

On June 8 & 9, 2011, Norway celebrated fifty years of the Norwegian Catastrophe Reimbursement Law. This came into effect due to tsunamis in the 1900s and 1930s caused by rocks falling into lakes. Following this event, the Norwegian Government decided that there was a need for a programme dedicated to meeting the needs of its citizens after future events of a similar nature. In the beginning, it was a government programme; however, over the past few years, private insurance companies have become members of this group.

The Natural Damage Insurance Act is now responsible for damages to buildings. It covers private property not included in ordinary insurance arrangements. The municipalities in Norway

are responsible for land use and land use planning. In addition to this, the Norwegian Water Resources and Energy Directorate provides support for areas such as flooding and landslides.

In 2008, suggestions were presented for a new National Disaster Act; however, this is still being deliberated by the political directorate. One suggestion was that a fixed compensation scheme should be established to handle the impacts of natural disasters, which will increase the ability of the country to return to normalcy. A suggestion was also made for new administration of claims handling to accelerate the process.

Norway has a very long and steep coastline and as such is exposed to storms. The steep formation of the valleys and the mountains (most of which contain marine clay) makes Norway susceptible to flash floods, massive rock falls and landslides.

In the days that followed the 50th celebration of the Act, there was heavy rainfall resulting in flash floods and landslides, resulting in loss to property. Individuals were forced to evacuate their homes. The period June-September experienced a great amount of crop failure resulting from the flooding and landslides.

Presentation #14: Natural Disaster Insurance Pool – PAID – Review of the first year of activity

Mr. Marius Bulugea, President and Mr. Radu Popescu, Counselor, PAID, Romania
[\[Presentation\]](#)

Romania is a European country significantly exposed to natural disasters, especially earthquakes and floods, which cause loss of life and damages with major social and economic impact. PRAC (the Romanian programme for catastrophe insurance) was a project financed by the World Bank and resulted in a new law in the Romanian legislation (nr. 260/2008). The basis for this law was international experience in the field, as opposed to other pools which were created after a significant event (for example, Turkey).

The first mandatory Home Insurance Act was issued on July 15, 2010. This covered areas such as earthquakes, floods and landslides. Insurance in Romania is efficient, but not effective. Following discussions on the matter, significant changes were made to the Act. One such amendment reflected the fact that homeowners who have voluntary insurance would not be obligated to purchase a compulsory insurance policy. Consequently, between December 2010 and May 2011, the rate of sale for mandatory policies decreased dramatically. In July & August, 2011 the rate of sale for mandatory policy increased and reached a peak of 20,000 policies per day. The mandatory home insurance policy market overtook the voluntary home insurance market. The insurance fund currently manages a portfolio of 850,000 compulsory

home insurance policies, which reflects 10% of the total housing fund. In 2011, there were two minor earthquakes, one in May of magnitude 4, and another in the beginning of October of magnitude 4.8. These caused minor damage for which persons have been making claims.

Major problems

The current problems include the offering of voluntary products by the legislation and therefore, the compulsory policy cannot compete with the voluntary products. Additionally, there is poor financial education and a low level of insurance culture.

Achievements

PAID is creating a national database with Romanian homeowners. This database will include the name of the owner, the national identification number for the owner, the construction material, the address and the surface; this process is almost complete. Partnerships have been forged with local authorities. A national campaign is being undertaken to increase the awareness of compulsory home insurance.

Focus

Attention is now being placed on lobbies to change the legislation. The rate of coverage of the compulsory insurance product has increased in the total housing fund. A promotional campaign emphasising rural zones was launched.

Presentation #15: Lorca earthquake: A new challenge for the Consorcio de Compensación de Seguros

Mr. Alfonso Nájera, Director, CCS, Spain [[Presentation](#)]

The earthquake of May 11, 2011 proved to be disastrous for a country such as Spain that has little experience of how to cope with seismic events of such intensity. In fact, this was the most significant seismic activity since the 1800s. Nine people were killed, 324 were injured and the village suffered total losses in the amount of €1bn around, in accordance with some estimations. The insured losses might amount to €400 million at the end of the process, to be paid by the Consortium. Some buildings were not insured. For those that were insured, the Consortium ensured that payments would be made in a timely manner so that the process of recovery could begin as soon as possible. A temporary office was set up in the village to provide relevant information to affected people.

Presentation #16: Greetings from Switzerland

Peter W. Schneider, CEO, IRV Intercantonal Reinsurance [[Presentation](#)]

Of the 26 states in Switzerland, there are 19 insurance companies for buildings, known as PIBs. There is insurance coverage for an estimated 80% of buildings in the country, with a value of over US \$2.4 billion. The remaining states have similar companies that are not state-owned.

There are 3 key elements of success used by these 19 companies:

1. All buildings in Switzerland MUST be insured against fire and natural disasters
2. All homeowners MUST be insured with the local PIB
3. The PIBs are established as non-profit organisations. They are independent companies owned by the State.

The mission of these PIBs is to prevent and insure and reduce the effects from damages. The responsibility of the public insurance companies is to support and pay a large sum of money for the fire brigades. They are also responsible by law for the professional education for the members of the brigade. Therefore, if the insurance companies do a good job in fire prevention, then the number of incidents will be reduced, and if they do a good job in intervention, they will reduce the cost of these incidents. In the last 50 years, losses from fires have been decreasing at a slow rate. This could be attributed to the prevention and intervention programmes. However, natural disasters and their effects are increasing. There were exceptional disasters in 1999 and 2005.

Presentation #17: The Updates of TREIF

Ms Nora Chang, Senior Vice President, Business Dept., Taiwan Residential Earthquake Insurance Fund [[Presentation](#)]

The Taiwan Residential Earthquake Insurance Fund (TREIF) was established on April 1, 2002 and will be celebrating 10 years of existence in 2012. Some changes to be made at the start of the year will include: the maximum sum of insurance in Taiwan will be increased to NT\$1,500,000 (US\$50,000) from NT\$1,200,000 (US\$40,000) effective January 1, 2012; living expenses will be increased to NT\$200,000 (US\$6,700) from NT\$180,000 (US\$6,000). The disasters for which individuals are insured include: earthquake shocks, fire or explosion caused by earthquake, landslides, subsidence, earth movement, rupture caused by earthquake and tsunamis.

Following the earthquake in Japan which resulted in a tsunami, the Government of Taiwan decided to change the definition of “earthquake” from “... detected and recorded by Central Weather Bureau in Taiwan” to “... detected and recorded by national earthquake-related

authorities or Institutions in Taiwan or the other countries". This was altered to expand the peril insured to include tsunamis caused by overseas long-range earthquakes.

The purpose of developing the TREIF earthquake risk assessment model was to enhance the autonomy and the credibility of the earthquake risk assessment conducted by TREIF; and to facilitate the development of a risk spreading mechanism which takes into account the insured amount, premium rate, claim settlement criteria, and reinsurance placement for the scheme.

The activities held by TREIF to celebrate their 10-year milestone will include:

- Commemorative publication – Jan - Mar 2012
- Special public promotion and education activities – Apr - May 2012
- International conference / seminar – Sep - Oct 2012

Presentation #18: Reform of the French Nat-Cat system: What is the situation?

Mr. Patrick Bidan, Senior Vice-President, Caisse Centrale de Réassurance (CCR) [[Presentation](#)]

Aims of the reform of the French nat-cat system are to accelerate the compensation of the victims and to strengthen the transparency and the equity of the system; to encourage responsible behavior for hazard prevention; and to limit the risk of subsidence. The reform project was subjected to a public consultation in July 2011 and the results were universally positive. After some ultimate modifications, it should be examined by the French Parliament by the end of the year. But, even if the project is adopted by the Parliament, the reform will only be in force after the publication of the decrees (especially those concerning the objective and public criteria for each peril). Therefore, the whole process will not be completed in 2011.

Presentation #19: SOLVENCY 2 and reinsurance

Mr. Laurent Montador, Head of Catastrophe Insurance and Public Funds, CCR, France [[Presentation](#)]

The presentation described the impact of Solvency 2 on reinsurance and examined the main components of cat risk under Solvency 2.

Presentation #20: Update on the Caribbean Catastrophe Risk Insurance Facility

Mr. Milo Pearson, Executive Chairman, CCRIF [[Presentation](#)]

16 CARICOM (Caribbean Community) countries have 29 policies with CCRIF. In 2010, the policies were revised based on the second-generation (2G) model because it was decided that a model that represented best practice was needed. Characteristics of this new model (not included in the previous model) include:

- a representation of the levels of tropical cyclone and earthquake risks faced in the Caribbean region at higher resolution
- a full modeled-loss approach as opposed to the index-based approach
- a cyclone model that explicitly includes losses due to storm surge

Over the years, CCRIF has been increasing its call for real-time tropical cyclone impact information that can be used in advance of a hurricane. There are currently 167 persons from 15 countries who have access to the CCRIF Real-Time Forecasting System. In July 2011, CCRIF provided training in collaboration with CIMH and KAC where 78 persons from 18 countries were trained using CCRIF's new online training platform.

A launch is being planned for an Excess Rainfall Product. Swiss Re has been selected to develop this product based on available NASA-processed satellite rainfall data. It will become available to some members by the end of 2011. It will not be a flood policy. The current product is a rainfall hedge, and not meant to be an accurate loss parametric. The amount of rainfall over a specific period of time in a specific location will be measured, and that will determine how much will be paid to the policy-holding country who is impacted by the rainfall. Countries such as Haiti, Guyana and Jamaica have a great need for a product such as this. Work is continuing on the regional rainfall model.

A few years ago, a Technical Assistance Programme was developed with the following three components:

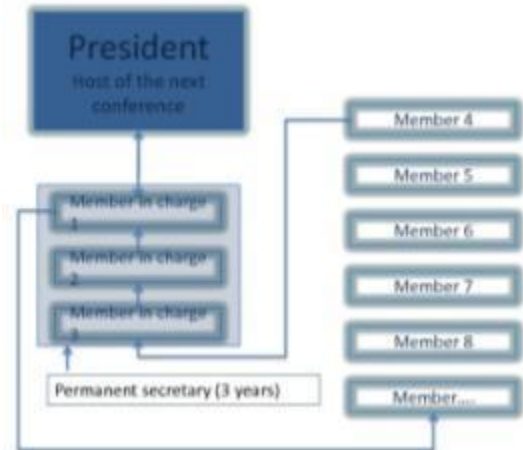
1. Scholarship / Professional Development Programme. Six scholarships have been offered to date for students attending the University of the West Indies, 3 undergraduate and 3 graduate. Other scholarships have been provided: one to a student at Reading University in the UK and two to staff of the Belize Meteorology Service to attend UWI. All scholarships are provided for study on areas related to disaster and/or risk management.
2. Regional Strategic Knowledge Building
3. Support for Local DRM Initiatives (not yet implemented)

Session 2: WFCP Business Meeting

Facilitated by Mr. Milo Pearson, Chairman

1. Discussion/Selection of new WFCP Chairperson and structure of WFCP

- Some of the primary concerns in determining the organizational structure included the need:
 - to ensure continuity among the leadership from year to year while continuing to involve new persons in leadership
 - to determine the purpose of the Forum – a concern was raised about the level of action/activity between Forum meetings and what the Forum should focus on. It was suggested that the annual meetings which report on updates were to be supplemented by more technical or research-oriented sessions.



- A number of governance/organization structures for WFCP were considered. A presentation on a particular structure was made by Hulda Árnadóttir and Alfonso Nájera (see figure at right). This structure rotated members of the WFCP serving on a 3-person committee. This committee would advise the President and would be supported by a Permanent Secretary – a permanent staff person, perhaps supported by membership fees. This suggestion was not widely accepted. Members preferred having the WFCP be a networking body – free to members – many of which have many other financial obligations.
- It was suggested that the chairperson of the World Forum be rotated every year. Therefore, it was decided that the chairperson of the next WFCP meeting would be the President for that year. Following on that suggestion, it was confirmed that the 2012 meeting will be held in Switzerland (based on an earlier offer prior to this meeting). As such, **Mr. Peter Schneider – CEO, IRV Intercantonal Reinsurance – was confirmed as the new President for 2011-2012.**
- It was decided that there would be a “Committee” – no exact name given – that would govern the WFCP. No decision was made on the name of this committee. However, membership would include: **the current President, immediate past President and the new president.** Therefore, it was necessary to determine the host of the 2013 meeting.
- Suggestions were made for the location for the 2013 WFCP meeting. Gunn Eide from the

Norwegian Agricultural Authority made an offer pending approval/confirmation. Approval from the Authority was later granted. **The Committee would therefore consist of: Milo Pearson – immediate past president, Peter Schneider – current president, and Øystein Haslum, Director of the Norwegian Agricultural Authority – next president.** CCR offered to host the meeting in Paris in 2014. It was noted by the Chairman that Turkey expressed an interest in hosting a future meeting. This would have to be after 2014, as the location for the meetings have been planned up to that year with Paris hosting 2014.

- The committee will meet before the next WFCP meeting to discuss the agenda for that meeting.

2. Involvement of other insurance pools and organisations in the WFCP

- There was discussion about the optimal size of the WFCP. The consensus was that there was no major benefit to increasing the size to a number that was too large. Mr. Pearson noted that while it may be good to include other insurance pools, the main aim of adding to the membership would be for the current members to learn something from those who would now be joining and vice versa. The first task would be to determine if there were other insurance pools that would be available. This would then be circulated to the members to determine which insurance pool(s) should be invited to become members. Recognising that GAREAT was a welcome member of the Forum, there was no consensus on whether other terrorism pools – or nuclear pools – should be added.
- It was suggested however, that an effort should be made to solicit membership from other natural catastrophe pools (e.g. Fonden in Mexico) as well as some of the terrorism pools. The list of suggested schemes would be circulated to members to decide who should be invited and then those organisations would make the decision on whether or not they would wish to become members of the WFCP. It was decided that this task will become that of the Committee, which may choose to delegate it to a “membership” sub-committee.

3. WFCP database

The planned presentation on the WFCP database was not made, because Mr. Bogdan Dumitrescu of BJD Reinsurance Consulting Co., was not able to attend the meeting. However, it was noted that this is a database of natural catastrophe, terrorism, and nuclear pools that Mr. Dumitrescu, is building and that it could help with the task in Item 2.

4. Date and Venue of next WFCP meeting

The next meeting of the World Forum of Catastrophe Programmes will be held in the last week in September 2012. Mr. Schneider commented that this meeting will be conducted using the same structure from the 2011 meeting.



Members of the World Forum of Catastrophe Programmes at the 6th annual meeting

Day 4

Field Trip - Appleton Estate Jamaica Rum Tours



Participants' Contact Information

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