BARBADOS NATIONAL PROGRESS REPORT

Ninth Session of the Intergovernmental Coordination Group for the Tsunamis and other Coastal Hazards Warning System for the Caribbean and Adjacent Regions (ICG/CARIBE EWS-IX)

May 13-15, 2014
St. Thomas, USA
BASIC INFORMATION

1. **ICG/CARIBE EWS Tsunami designated National Contact (TNC)**

   The person by a Member State to an Intergovernmental Coordination Group (ICG) to represent his/her country in the coordination of international tsunami warning and mitigation activities. The person is part of the main stakeholders of the national tsunami warning and mitigation system. The person may be the Tsunami Warning Focal Point, from the national disaster management organization, from a technical or scientific institution, or from another agency with tsunami warning and mitigation responsibilities.

   Name: Kerry Hinds
   Title: Department of Emergency Management (DEM)
   Postal Address: #30 Warrens Industrial Park, Warrens, St. Michael
   Email Address: Kerry.Hinds@barbados.gov.bb/ kerry.hinds@gmail.com
   Telephone Number: 1 246 438-7575
   Fax Number: 1 246 421-8612
   Cellular Number: 1 246 234-4835
   WEB Page: www.dem.gov.bb

2. **ICG/CARIBE EWS Tsunami Warning Focal Point (TWFP)**

   The 7x24 contact person, or other official point of contact or address, is available at the national level for rapidly receiving and issuing tsunami event information (such as warnings). The Tsunami Warning Focal Point either is the emergency authority (civil defense or other designated agency responsible for public safety), or has the responsibility of notifying the emergency authority of the event characteristics (earthquake and/or tsunami), in accordance with national standard operating procedures. The Tsunami Warning Focal Point receives international tsunami warnings from the PTWC, or other regional warning centres.

   Name: Mr. Hampden Lovell
   Title: Director
   **Responsible Organization:** Barbados Meteorological Services
   **Postal Address:** Grantley Adams International Airport (GAIA Inc.)
   **E-mail Address:**
   **Emergency Telephone Number:**
   **Emergency Fax Number:**
   **Emergency Cellular Telephone Number:**
WEB Page: www.barbadosweather.org

National Tsunami Warning Centre (if different from the above)
Same as above

3. Tsunami Advisor(s), if applicable
(Person, Committee or Agency Managing Tsunami Mitigation in country)

Name: Judy R. Thomas
Title: Director of Emergency Services
Responsible Organisation: Department of Emergency Management
Postal Address: #30 Warrens Industrial Complex, Warrens, St. Michael, Barbados
E-mail Address: judy.thomas@barbados.gov.bb
Emergency Telephone Number: (After hours) (246) 422-7725
Emergency Fax Number: (246) 421-8612
Emergency Cellular Telephone Number: (246) 230-2693

Name: Dr. Lorna Inniss
Title: Director (ag.)
Responsible Organisation: Coastal Zone Management Unit
Postal Address: Bay Street, St, Michael, Barbados
E-mail Address: linniss@coastal.gov.bb
Emergency Telephone Number: 1 246 427-1587 or 1 246 228-5950
Emergency Fax Number: 1 246 228-5956
Emergency Cellular Telephone Number: 1 246 256-3170

4. Tsunami Standard Operating Procedures (SOPs) for a Local Tsunami (when a local tsunami hazard exists)
For each situation, please provide the following:

• What organization identifies and characterizes tsunamigenic events?

Currently, the Pacific Tsunami Warning Centre (PTWC) is responsible for identifying and characterizing tsunamigenic events and disseminating warning information messages on threats to the Warning Focal Point which is the Barbados Meteorological Services who receives the message on the Global Telecommunications System (GTS), Emergency Managers Weather Information Network (EMWIN) and the listed SMS and email recipients.
• **What is the threshold or criteria for declaring a potential tsunami emergency?**

The Barbados Meteorological Service receives the information in the form of a Watch Message, analyses it and determines whether the system should be activated.

• **What organization acts on the information provided by the agency responsible for characterizing the potential tsunami threat?**

The Department of Emergency Management (DEM) from where the National Emergency Management System is activated. However DEM is not a 24-hour agency therefore if an occurrence happens outside of normal working hours 8:15am – 4:30 pm, the 24-hour agencies—Barbados Fire Service, Barbados Defence Force and Royal Barbados Police Force will act on the information.

• **How is the tsunami information (warning, public safety action, etc) disseminated within country? Who is it disseminated to?**

There is a Mass Alerting and Dissemination Tsunamis Warning Protocol (See Figure 1) specifically designed for Barbados using the Mass Media, Radio and Television. Both cellular Vendors also provide texting services to all cellular users. The message is also conveyed on the Emergency Telecommunication System: UHF Astro, VHF and the use of the emergency services mobile sirens may also be used.

The information is disseminated to the General Public, the Coastal Communities, Tourism and Private Sectors and also the Public Utility Sector.
Information passed to the Decision-makers.
• *How is the emergency situation terminated?*

After an “all Clear is issued by the Warning Focal Point that the threat has passed.
5. For Distant Tsunami Procedures:

Tsunami SOPs for a Distant Tsunami (when a distant tsunami hazard exists)

For each situation, please provide the following:

• What organization identifies and characterizes tsunamigenic events?

The Barbados Meteorological Services in collaboration with the Coastal Zone Management Unit

• What is the threshold or criteria for declaring a potential tsunami emergency?

The Barbados Meteorological Service receives the information in the form of a Watch Message, analyses it and determines based on (a) local and regional tsunami scenario an earthquake of magnitude 7.1- 7.5 in the Caribbean and less than 100km under the sea OR (b) on a distant tsunami scenario with a magnitude of more than 7.9 in the Atlantic and less than 100km under the sea, the level of activation for the national emergency management mechanism.

• What organization acts on the information provided by the agency responsible for characterizing the potential tsunami threat?

For a local event, the Barbados Meteorological Service is responsible for activating the National Emergency Management System. However, for regional and distant events, the Department of Emergency Management has responsibility for activating the National Emergency Management System. It has the mandate for informing the Political Directorate and Emergency Services using the mass notification system.

• How is the tsunami information (warning, public safety action, etc) disseminated within country? Who is it disseminated to?

There is a Mass Alerting and Dissemination Tsunamis Protocol specifically designed for Barbados using various modes of communication including the Mass Media, Radio and Television and the National Emergency Radio Network (UHF, VHF and HF Communications), the cellular vendors also provide texting services to their cellular users.

The information is disseminated to the Decision-makers, general public, the Coastal Communities, Tourism and Private Sectors and also the Public Utility Sector.
• **How is the emergency situation terminated?**

When the “All Clear” is issued by the Warning Focal Point indicating that the threat is over.

• **For Distant Tsunami Procedures:**

*What actions were taken in response to warnings issued by PTWC, WC/ATWC, and/or JMA NWPTAC during the inter-sessional period?*

No warning was issued in the period under review therefore no action was taken.
6. National Sea Level Network
Please include a table with positions and description of stations /sensors and a map.

<table>
<thead>
<tr>
<th>Station Name</th>
<th>Location</th>
<th>Latitude</th>
<th>Longitude</th>
<th>Sensors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proposed for Port St. Charles</td>
<td>St. Peter</td>
<td></td>
<td></td>
<td>Tide Gauge</td>
</tr>
<tr>
<td></td>
<td>North west Coast</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barbados Coast Guard</td>
<td>St. Michael</td>
<td></td>
<td></td>
<td>Tide Gauge</td>
</tr>
<tr>
<td>Bridgetown Port</td>
<td>St. Michael</td>
<td></td>
<td></td>
<td>Tide Gauge</td>
</tr>
</tbody>
</table>
7. **Information on Tsunami occurrences:**
   NONE

   *Please include sea level observations, pictures, wave arrival descriptions, public, media, or other responses to warnings, lessons learned, etc.*

8. **Web sites (URLs) of national tsunami-related web sites:**
   None. A page on existing websites is contemplated for the upcoming year and beyond.

   Information available on CDEMA Web Page [http://www.weready.org](http://www.weready.org)

9. **Summary plans of future tsunami warning and mitigation system improvements.**
   *This information will be used to aid the development of the CARIBE EWS Implementation Plan.*
   - Proposal has been developed and submitted for systems requirements of a National Alerting and Mass Notification System. Continue stakeholder engagement to ensure improvements to the EWS. It is expected that improvements to the system will continue throughout the coming period.
   - Continued implementation of the National 5-Year Coastal Hazards Public Awareness and Education Strategic Plan which has been adapted from the Regional Public Awareness and Education Strategy document.
   - There is continued thrust to encourage the inauguration of the National Mitigation Council which will provide administrative support to the National Tsunami and Coastal Hazards Programme.
   - Continued implementation of the Coastal Risk Assessment and Management Project providing the scientific basis for the completion of the Hazard and Vulnerability Maps and support the completion of the Coastal Evacuation Plan, Evacuation routes and the identification of Hazard and Safe Zones as well as the erection of evacuation signs in coastal communities.

   - The other activities in this project includes:
**Hazard Assessment**
- Diagnostic Studies
- Analyzing Tsunamis Risk
- Sources of Tsunamis, scenarios, and wave propagation
- Analysis of wave run-up and wave height
- Development of integrated coastal risks information platform with access by all stakeholders.

**Detection System:**
- Installation of new satellite sea level stations in the Southwest of Barbados.
- Working with communities (householders and businesses) to encourage increased levels of community preparedness.

- Coastal Community Vulnerability Assessments are being implemented to provide a profile of communities for inclusion in the National Vulnerability Grid.

- Training for Emergency Response personnel and Warning Centre personnel is also being targeted in an attempt to improve national systems capacity.

**NATIONAL PROGRAMMES AND ACTIVITIES INFORMATION**

**10. EXECUTIVE SUMMARY**

The Department of Emergency Management in conjunction with the Coastal Zone Management Unit continue to collaborate as chairs of the DEM Standing Committee on Coastal Hazards tasked with the responsibility for the development and implementation of the National Tsunami and Coastal Hazards Programme in Barbados. Emphasis is being placed on the public education and awareness programme regarding this particular hazard with focus on the involvement of coastal communities, the private sector and the youth population.

Attention is also being placed on the further enhancement of the Mass Notification and Alerting Mechanisms by improving the Emergency Telecommunication System. In addition, the scientific
information and data requirements necessary to influence and enhance the Programme are being pursued under a US$45million 5-year project

Innovations and Improvements to Warning Procedures and Operations

The Barbados National Standard Operating Procedures for Tsunami Warning was the subject of continued review and refinement during this period. This process was facilitated by the Technical Standing Committee on Coastal Hazards. The opportunity to validate the procedures arose in the just recently concluded Caribe Wave 2014 Communications Exercise. These procedures were used by the emergency response and warning focal point personnel to exercise and validate their responsibilities under the SOPs and to further refine their own internal agency procedures. The exercise also highlighted areas of deficiencies in the current communications system that would require improvement. During the exercise debriefing session, agency operatives used the forum to discuss the system’s strengths and shortcomings as well as to generate of a number of recommendations for implementation in the near future.

Discussions between key stakeholders in the National Emergency mechanism are ongoing. Additionally, there were discussions with manufacturers of various EWS with a view to expanding the modes of notification for the National Alert System.

Implementation of the Tsunami Public Awareness and Education Strategy for the Caribbean and Adjacent Region

During the period 2013-14, the Public Awareness and Education (PAE) sub-committee of the Technical Standing Committee on Coastal Hazards reviewed and adapted the Regional Tsunami Public Awareness and Education Strategy for the Caribbean and Adjacent Region and as a result have produced the Barbados Coastal Hazards Public Awareness and Education Strategic Plan 2013-2017. This document was endorsed during 2013 by the Technical Standing Committee on Coastal Hazards membership and has been utilized to guide the implementation of the National Tsunami and other coastal hazards Public Education and Awareness Programme.
Public Education and Awareness Programme

The Barbados population has been kept abreast of the Tsunami and other coastal hazards through public awareness and education activities targeting coastal communities, the Tourism Sector stakeholders, school population and the general public. The table below captures these public awareness and promotional activities geared at the various segments of the Barbadian population during the year May 2013- April 2014.

**National Tsunami Public Awareness Programme 2013-2014**

<table>
<thead>
<tr>
<th>Public Awareness Activities</th>
<th>Target Audience</th>
<th>Collaborating Agencies/ Entities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Television and Radio Public Service Announcements</td>
<td>General Public</td>
<td>Technical Standing Committee on Coastal Hazards, Media Houses</td>
</tr>
<tr>
<td>Press Releases and Informational Articles on Tsunami and Other Coastal Hazards</td>
<td>General Public</td>
<td>Government Information Service, Media Houses</td>
</tr>
<tr>
<td>Scientific Lectures</td>
<td>Technical Standing Committee on Coastal Hazards Members; Scientists, Academicians, Coastal Scientists, Engineers, Seismic Research Centre, DEM, CZMU, Technical Standing Committee on Coastal Hazards</td>
<td></td>
</tr>
<tr>
<td>Tsunami and Other Coastal Hazards Awareness Workshop Sessions</td>
<td>Primary School Population, Primary School Teachers</td>
<td>Seismic Research Centre, Ministry of Education, Department of Emergency Management, Technical Standing Committee on Coastal Hazards</td>
</tr>
<tr>
<td>Tsunami and Other Coastal Hazards Awareness Presentation</td>
<td>Barbados Girls’ Guide Association, District Emergency Organisations - Community Groups,</td>
<td>Department of Emergency Management,</td>
</tr>
<tr>
<td>Movie Nights</td>
<td>General Public</td>
<td>Government Information Service, Department of Emergency Management, Technical Standing Committee on Coastal Hazards</td>
</tr>
<tr>
<td>Public Lectures</td>
<td>General Public</td>
<td>Seismic Research Centre, DEM, CZMU, Technical Standing Committee on Coastal Hazards</td>
</tr>
<tr>
<td>Television and Radio Shows</td>
<td>General Public</td>
<td>Technical Standing Committee on Coastal Hazards, Media Houses- Caribbean Broadcasting Corporation, One Caribbean Media- Starcom Network, Seismic Research Centre, Government Information Service, Department of Emergency Management</td>
</tr>
<tr>
<td>TSCCH Committee Meetings</td>
<td>TSCCH Meetings</td>
<td>DEM and CZMU</td>
</tr>
</tbody>
</table>
### Stakeholder Meetings

<table>
<thead>
<tr>
<th>Emergency Response Agencies</th>
<th>1) Warning and Dissemination Sub Group of Technical Standing Committee on Coastal Hazards</th>
<th>2) Public Awareness Sub Group of Technical Standing Committee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telecommunications Service Providers</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Caribe Wave 2014

Barbados like many of the other countries and territories in the Caribbean and Adjacent Region participated in the Caribe Wave 2014 Exercise on March 26, 2014. This initiative was coordinated in-country by the Technical Standing Committee on Coastal Hazards. The exercise provided an opportunity for Barbados to exercise operational lines of communications, review tsunami response procedures, and promote tsunami preparedness. There was an extensive planning phase to facilitate the staging of the exercise as well as a public awareness campaign which complemented the Barbados 2014 CaribeWave Exercise and assisted in raising the level of individual, community, and national level awareness and preparedness.

The exercise took the form of:

1) a Communications Exercise where emergency response agencies were given the opportunity to review and test the Draft Barbados National Warning Communications Protocol and Standard Operating Procedures

2) A functional exercise in the parish of St. James located on the western side of the island. During this exercise the St. James Primary School was successfully evacuated.

### Barbados Participation in Caribbean Tsunami Information Centre Activities

Over the period November 18 – 29, 2013, the TSCCH participated in a number of events which were being executed by the Department of Emergency Management (DEM) in association with the Caribbean Tsunami Information Centre (CTIC). The Government Information Service coordinated the information and communication requirements for the tsunami preparedness programme of activities during the period. The specific activities were:
1. **November 18 -22, 2013:** Barbados along with other countries and territories within the Caribbean and Adjacent Region participated in a one week Regional Training Workshop on Strengthening Tsunami Warning and Emergency Response Standard Operating Procedures and the Development of the ICG/CARIBE-EWS Pacific Tsunami Warning Center (PTWC) New Enhanced Products. The Barbados contingent was comprised of members of the TSCCH including the Barbados Defence Force, Royal Barbados Police Force, Barbados Meteorological Service and the Department of Emergency Management were participants of the Regional Standard Operating Procedures workshop. Miss Kerry Hinds Department of Emergency Management was one of the trainers for the workshop.

2. **CTIC Launch Ceremony and Cocktail Reception - Hilton Barbados Resort, Barbados, November 22, 2013.** The Caribbean Tsunami Information Centre (CTIC) became operational on 2 September 2013 and has been established at the Department of Emergency Management under the aegis of the Ministry of Home Affairs. The overall goal of CTIC is to mitigate the effects of tsunamis within the Caribbean and adjacent regions through all aspects of tsunami warning and mitigation, including hazard assessment, warnings, preparedness and research. This CTIC contributes to the development of national tsunami and other coastal hazards warning systems. On November 22, the opportunity was taken to formally launch the CTIC. Participation in the CTIC Launch event comprised representatives of local community, national, regional and international agencies and entities contributing to the overall global tsunami preparedness programme. The event received political endorsement from the Government of Barbados with the Acting Minister responsible for Disaster Management The Honorable Michael Lashley MP, delivering the feature speech at the event.

3. **CTIC Board Meeting – Hilton Barbados Resort, Barbados, November 23, 2013**

   Dr. Lorna Inniss (CZMU) and Kerry Hinds (DEM) participated in the second board meeting of CTIC.

4. **November 18 – 29, 2013: Public Service Announcements (PSAs)**

   The Government Information Service coordinated the information and communication requirements for the tsunami preparedness programme of activities during the period. There
were a number of radio and television tsunami and earthquake related PSA(s) which sought to raise the level of awareness amongst residents and visitors alike.

**Barbados Participation in ICG Meetings**

- Eighth Session of the Intergovernmental Coordination Group for Tsunamis and other Coastal Hazards Warning System for the Caribbean and Adjacent Regions. Kerry Hinds(DEM), Hampden Lovell(Barbados Met Services), Renee Evelyn (Barbados Telecommunications Unit) attended during the period April 29-May 1, 2013 in Port of Spain, Trinidad.

- CARIBE-EWS WGIV CaribeWave 2014 Task Team. Kerry Hinds participated as a member of the CaribeWave 2014 Task Team throughout the year including attending the CaribeWave 2014 Meeting on November 12, 2013 in Mayaguez Puerto Rico.

- CARIBE-EWS WGIV Task Team on Performance Based Tsunami Recognition Programme. Kerry Hinds chaired Working Group IV Task Team on Performance Based Tsunami Recognition Programme meeting on November 13-14, 2013 in Mayaguez Puerto Rico.

- ICG CARIBE EWS Officers and Working Group Virtual Meeting. Miss Kerry Hinds participated in an ICG CARIBE EWS Officers and Working Group virtual meeting on December 9, 2013.
Date: April 13, 2014

Names: 
Miss Kerry Hinds
Deputy Director of Emergency Services
Department of Emergency Management

Mrs Sonia Nurse
Deputy Director, Barbados Meteorological Services

Mr. Renee Evelyn
Senior Telecommunications Officer
Telecommunications Unit

Mr. Kareem Sabir
Research Officer, Coastal Zone Management Unit

Mrs. Julia Rawlins-Bentham
Information Officer, Barbados Government Information Service