



## **UNESCO INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION**

### **Intergovernmental Coordination Group for the Tsunami and Other Coastal Hazards Warning System for the Caribbean and Adjacent Regions (ICG CARIBE EWS)**

### **CARIBE WAVE 2011 Tsunami Exercise**

#### **Summary**

34 countries and territories\* participated in the first regional tsunami exercise, CARIBE WAVE 2011 which was held on March 23, 2011 jointly with LANTEX and was conducted under the framework of the UNESCO IOC Intergovernmental Coordination Group for the Tsunami and Other Coastal Hazards Warning System for the Caribbean and Adjacent Regions (ICG CARIBE EWS). This represents a participation rate of almost 90% of the nations in the region that have nominated Tsunami Warning Focal Points and National Contacts in the region and 75% of all the countries and territories in the region.

The scenario of the exercise was a magnitude 7.6 earthquake in the Virgin Island basin which generated a tsunami with runups of up to 10 meters. At 13:02 UTC the NOAA NWS Pacific Tsunami Warning Center (PTWC) and NOAA NWS West Coast and Alaska Tsunami Warning Center (WC/ATWC) issued a “Dummy” Message to all the officially designated Tsunami Warning Forecast Points (TWFP). The bulletins that would be issued for such an event by the PTWC and WC/ATWC which currently serve the Caribbean were included in the Exercise Manual which was distributed in December 2010 in French, Spanish and English. Nevertheless, for the first time for such an exercise, almost 300 public and private institutions signed up to receive all the exercise bulletins via email from the warning centers during the exercise.

All of the participants of CARIBE WAVE were able to test the communications systems between the warning centers and the officially designated TWFP. The participants received the messages by Fax, Email, EMWIN (Emergency Managers Weather Information Network) and/or the GTS (Global Telecommunication Systems). Sirens, text messages, emails, emergency alert systems, media outlets, NOAA weather radio and traditional telephone calls were then used by many TWFP to disseminate the messages to the government authorities and the public. Given the ample awareness campaigns that were conducted in preparation for the event, no false alarms were reported. In addition to the communication test, exercises were conducted at various additional levels of magnitudes and sophistication and included seminars, table top exercises and drills. Several countries used the opportunity to review their protocols for issuing “All Clear” messages after a Tsunami strike.

Planning for CARIBE WAVE took a full year and was coordinated by a task team led by the Caribbean Tsunami Warning Program and included the Tsunami Unit-IOC Secretariat, CARIBE EWS officers, PTWC, WCATWC, national and regional emergency management organizations, Tsunami National Contacts and Tsunami Warning Focal Points. To promote and discuss the exercise, dozens of talks, interviews and webinars were conducted by the stakeholders throughout the Caribbean. At least 5 special websites were established by organizations to share information on the event. The media also played a key role before, during and after the exercise in alerting the public and identifying strengths and gaps in the tsunami warning system.

An evaluation questionnaire was posted online so that each of the countries could provide feedback on the exercise. Thirty two of the thirty four (94%) participating countries submitted a questionnaire. The main observations and findings from this exercise that were the following:

- In addition to the National authorities, 60% of the nations also activated local organizations for the exercise
- 33% of the respondents indicated that schools also participated
- In 50% of the countries private institutions and organizations also participated, mainly from the tourism and port sectors
- 83% reported that they found the format of the exercise satisfactory
- 90% of the Tsunami Warning Focal Points received in a timely fashion the “dummy” message sent by the Tsunami Warning Centers kicking off the exercise.
- 90% of the participants also noted that they found the bulletins that were prepared for the exercise and would be issued for such an event to be clear, while 37% indicated that more content should be added.
- 87% of the countries signed up to receive emails with the actual TWC products during the event and almost all of these, 85% found them helpful.
- 40% of the participants indicated that in addition to the products of the TWC, they received special products from another agency, for example, Met Services, Seismic Networks and the Caribbean Disaster Emergency Management Agency.
- While 50% of the respondents indicated that they had a tsunami response plan and 70% that actions were laid out to respond to a tsunami, only 47% indicated that it was adequate to address a tsunami threat.
- 60% of the countries received feedback from the public directly or through different media outlets.
- Although only 40% of the countries reported to have participated in the webinars, 100% of all who responded indicated that they were useful, highlighting this mechanism as an important one for training and coordination in the region.

As 100% of the countries and territories indicated thru the survey, despite gaps in communications and actions, the exercise was helpful in validating or highlighting the need for tsunami planning. There is an absolute need to reinforce preparedness, evacuation plans and involvement of private sector in tsunami readiness. The fact that the population and press has a high interest and awareness on these matters is important.

The CARIBE EWS in light of CARIBE WAVE 2011 can consider if and when another such tsunami exercise and integrating the lessons learned, as well as consider different scenarios.

\* Aruba, Antigua and Barbuda, Bahamas, Barbados, Belize, Bolivarian Republic of Venezuela, Colombia, Dominica, Dominican Republic, France (Martinique, Guadeloupe, St Martin), Grenada, Guatemala, Haiti, Honduras, Jamaica, Mexico, Netherlands (Curacao, Sint Maarten and Sint Eustatius), Nicaragua, Panama, Peru, Saint Lucia, Saint Vincent and the Grenadines, Trinidad and Tobago, United Kingdom (Anguilla, British Virgin Islands, Bermuda, Cayman Islands, Turks and Caicos), United States (Puerto Rico and the US Virgin Islands).

Submitted by:

Christa G. von Hillebrandt-Andrade  
CARIBE EWS Task Team Leader CARIBE WAVE 2011  
NOAA NWS Caribbean Tsunami Warning Program  
Mayaguez, Puerto Rico  
April 21, 2011