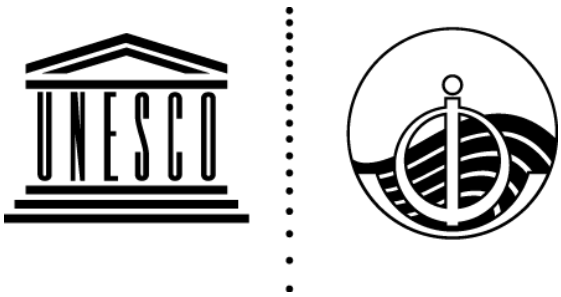
Intergovernmental Oceanographic Commission
technical series

109



EXERCISE CARIBE WAVE/LANTEX 14

A Caribbean and Northwestern Atlantic Tsunami Warning Exercise

Portugal Scenario

26 March 2014

Volume 2 Evaluation Report

UNESCO

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109

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IOC Technical Series, 109 (volume 2)
Paris, March 2015
English

NOTE: The contents of this handbook are patterned after the Exercise Caribe Wave 11 and Exercise Caribe Wave/Lantex 13 (*Exercise Caribe Wave 11: A Caribbean tsunami warning exercise, 23 March 2011*. IOC Technical Series, 93. Paris, UNESCO, 2011 [IOC/2010/TS/93 Rev.] [English/French/Spanish]; and *Exercise Caribe Wave/Lantex 13: A Caribbean tsunami warning exercise, 20 March 2013; Volume 1: Participant handbook*. IOC Technical Series, 101, Paris, UNESCO, 2012 [IOC/2012/TS/101 VOL.1]). These Caribe Wave handbooks followed the Exercise Pacific Wave 08 manual published by the Intergovernmental Oceanographic Commission (*Exercise Pacific Wave 08: A Pacific-wide Tsunami Warning and Communication Exercise, 28−30 October 2008*. IOC Technical Series, 82, Paris, UNESCO, 2008 [IOC/2008/TS/82.]). Another important reference is the document *How to plan, conduct and evaluate UNESCO/IOC tsunami wave exercises*. IOC Manuals and Guides, 58 rev., Paris: UNESCO, 2013 [IOC/2012/MG/58 Rev] (English, Spanish).

For bibliographic purposes, this document should be cited as follows:

Intergovernmental Oceanographic Commission. 2015. *Exercise Caribe Wave/Lantex 14. A Caribbean and Northwestern Atlantic Tsunami Warning Exercise, 26 March 2014. Volume 2:Evaluation Report.* IOC Technical Series, 109 vol.2. Paris: UNESCO. (English)

Report prepared by: Intergovernmental Coordination Group for the Tsunami and other Coastal Hazards Warning System for the Caribbean and Adjacent Regions (ICG/CARIBE-EWS)
US National Tsunami Hazard Mitigation Program (NTHMP)
Warning Coordination Subcommittee

Published in 2015
by United Nations Educational, Scientific
and Cultural Organization
7, Place de Fontenoy, 75352 Paris 07 SP

(IOC/2015/TS/109Vol.2)

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SUMMARY

Almost 200,000 people across 31 Caribbean nations and 16 territories took part in the third regional tsunami exercise Caribe Wave/Lantex 14 held on 26 March 2014. This represents a participation rate of 98% of Member States of the Intergovernmental Coordination Group for the Tsunami and other Coastal Hazards Warning System for the Caribbean and Adjacent Regions (ICG/CARIBE-EWS) of the Intergovernmental Oceanographic Commission (IOC) of United Nations Educational, Scientific and Cultural Organization (UNESCO), an increase from 75% in 2011 and 94% in 2013. The high level of participation reflects improved level of understanding of the tsunami threat and commitment of the countries to get ready. Given the transatlantic nature of the scenario, it also marked the first time for coordination between two tsunami warning systems, the Tsunami and other Coastal Hazards Warning System for the Caribbean and Adjacent Regions (CARIBE-EWS) with the Tsunami Early Warning and Mitigation System in the North-Eastern Atlantic, the Mediterranean and Connected Seas (NEAMTWS).

According to the registrations, 191,973 people signed up throughout the Caribbean and Adjacent Regions (150,000 more than in 2013). Participants included over 1,400 organizations and families (up from 481 in 2013, and 300 in 2011). During the exercise, the Pacific Tsunami Warning Center (PTWC), the US National Tsunami Warning Center (US NTWC), and the Puerto Rico Seismic Network (PRSN) sent out over 31,500 emails to 2,000 subscribers to the special CARIBE WAVE/LANTEX 14 notification service. The Instituto Português do Mar e Atmosfera (IPMA) also made available the type of bulletins it would be issuing for the NEAMTWS during such an event.

All of the officially designated UNESCO/IOC CARIBE-EWS Tsunami Warning Focal Points (TWFPs)/National Contacts (TNCs) participated in the exercise. In addition, other local tsunami warning focal points, international, state, territorial and local emergency management organizations, academic institutions, governmental agencies, businesses, health facilities, media, individuals and families also took part. Besides the emails, websites, social media and text messages, sirens and emergency alert radios were also used to disseminate information. Drills, tabletop exercises, seminars, meetings and video/web, among other activities were also held as part of the Exercise Caribe Wave/Lantex 14.

For this year's exercise, two scenarios were developed. The first scenario simulated a tsunami generated by a M 8.5 earthquake originating 270 km in the SW of Portugal in the Atlantic Ocean, while the second one simulated a tsunami generated by a M 6.6 earthquake which triggered a submarine landslide originating in the North end of the Mississippi Canyon in the Gulf of Mexico. The Portugal event is modelled off the 1 November 1755 earthquake and tsunami which killed up to 100,000 people. The tsunami generated by this earthquake affected the coasts of Portugal, Spain, North Africa, and the Caribbean. While the first tsunami waves reached Lisbon in about 20 minutes, it was observed in the Caribbean 9 hours after the earthquake. Waves with estimated runup heights of 7 metres were observed at Saba, Netherlands Antilles. In the case of the submarine landslide in the Gulf of Mexico, several studies have also been conducted evaluating this potential source.

The start of exercise messages was issued by the PTWC and US NTWC at 10h05 UTC for the Portugal scenario, and 14h02 for Gulf of Mexico scenario. To test communication, these were disseminated over all standard TWC broadcast channels (Global Telecommunications Satellite [GTS], Weather Wire, Advanced Weather Interactive Processing System [AWIPS], Aeronautical Information System Replacement [AISR], Emergency Managers Weather Information Network [EMWIN], email, fax) to all official stakeholders and TWFPs.

Thru the exercise it has been possible to:

- Validate the **issuance** of tsunami products from the PTWC and US NTWC which currently serve the tsunami service providers for the region.

- Validate the **receipt and dissemination** of tsunami products by TWFP's. Most TWP's continue to be strongly dependant on fax and email, with a few indicating receipt of messages thru EMWIN, GTS and AISR. Email and fax were also used predominantly to disseminate information to the Disaster Management Organizations (DMOs). In 38% of the Member States (MS) and Territories[1], messages were also disseminated to the public, the principal mechanism for this dissemination was radio, TV, and police.

- Continue with the **exposure to proposed enhanced PTWC products,** which include graphics. The Member States continue to support these products.

- **Validate the readiness of the CARIBE-EWS countries** to respond to a distant tsunami. Most countries also indicated that they had emergency response plans for distant tsunamis, as well as local and regional events. Nevertheless, most countries indicated that they do not have tsunami inundation, nor evacuation maps or mass evacuation plans.

Planning for Caribe Wave/Lantex took over a year and was coordinated by a Task Team (TT) led by the U.S. National Weather Service (NWS) Caribbean Tsunami Warning Program (CTWP), and included the Caribbean Tsunami Information Center (CTIC), CARIBE-EWS officers, PTWC, National Tsunami Warning Centre (NTWC), the PRSN, the International Tsunami Information Center (ITIC), regional Emergency Management Organizations (EMOs), Tsunami National Contacts (TNCs), and TWFPs.

The Participant Handbook (IOC/2013/TS/109VOL.1), which was distributed in January 2014, and other information and supporting documents for the exercise will remain posted on different websites including the CTWP (http://caribewave.info) and the PRSN (http://redsismica.uprm.edu). Feedback on the exercise was received from 47 of the 48 Member States and Territories thru an online questionnaire.

Caribe Wave/Lantex 14 was conducted under the framework of the IOC/UNESCO CARIBE-EWS and the US National Tsunami Hazard Mitigation Program (NTHMP). The fourth tsunami exercise Caribe Wave/Lantex is already being planned for March 2015.

1. BACKGROUND

At the Eighth Session of the Intergovernmental Coordination Group for the Tsunami and other Coastal Hazards Warning System for the Caribbean and Adjacent Regions (ICG/CARIBE-EWS-VIII) it was decided to hold a third tsunami exercise, Caribe Wave/Lantex 14, on 26 March 2014. There were proposed two scenarios, the first based on

[1] Antigua and Barbuda, Aruba, Bahamas, Barbados, Belize, Brazil (Observer), Colombia, Costa Rica, Curaçao, Dominica, Dominican Republic, France (Martinique, Guadeloupe, French Guyana, Saint Barthelemy, St Martin), Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Netherlands (Bonaire, Saba and Sint Eustatius), Nicaragua, Panama, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Sint Maarten, Suriname, Trinidad and Tobago, United Kingdom of Great Britain and Northern Ireland (Anguilla, British Virgin Islands, Bermuda, Cayman Islands, Montserrat and Turks and Caicos), United States of America (Puerto Rico and the US Virgin Islands) and Venezuela (Bolivarian Republic of).

the 1755 Portugal event, and the second on the Gulf of Mexico. This tsunami warning exercise was patterned after the very successful Exercise Caribe Wave 11 (IOC/2010/TS/93 Rev), and Exercise Caribe Wave/Lantex 13 (IOC/2012/TS/101 VOL.1), as well as the annual LANTEX Atlantic and US Caribbean (as of 2009) Exercises of the National Tsunami Hazard Mitigation Program, NOAA, and the exercises held in the Pacific. This tsunami exercise was conducted to assist tsunami preparedness in the Caribbean and to validate the understanding and use of the new PTWC Enhanced Products (IOC/2013/TS/105 REV.3).

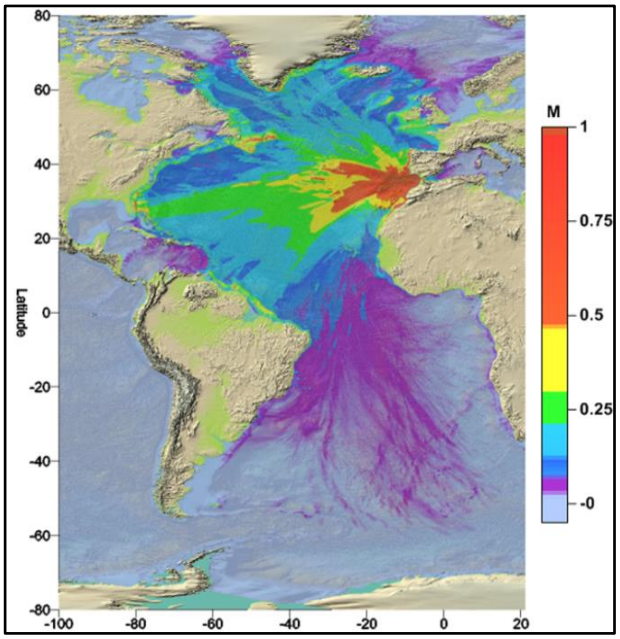
Historical tsunami records from sources such as the US National Oceanic and Atmospheric Administration's (NOAA) National Geophysical Data Center (NGDC) show that almost 100 tsunamis have been observed in the Caribbean. Potential sources for tsunamis in the region include the faults in the Caribbean, sub-aerial and submarine volcanoes, the region East of the Azores Islands, and portions of the continental slope off the US and Canadian coast due to sub-sea landslides.

Recognizing the need for an early warning system specially after the lessons learned from the 2004 Indian Ocean tsunami, the Intergovernmental Coordination Group for the Tsunami and other Coastal Hazards Warning System for the Caribbean and Adjacent Regions (ICG/CARIBE EWS) was established in 2005 as a subsidiary body of the IOC/UNESCO with the purpose of providing assistance to all Member States of the region to establish their own regional early warning system. The main objective of the CARIBE-EWS is to identify and mitigate the hazards posed by local, regional and distant tsunamis. The goal is to create a fully integrated end-to-end warning system comprising four key components: Hazard monitoring and detection; hazard assessment; warning dissemination; and community preparedness and response.

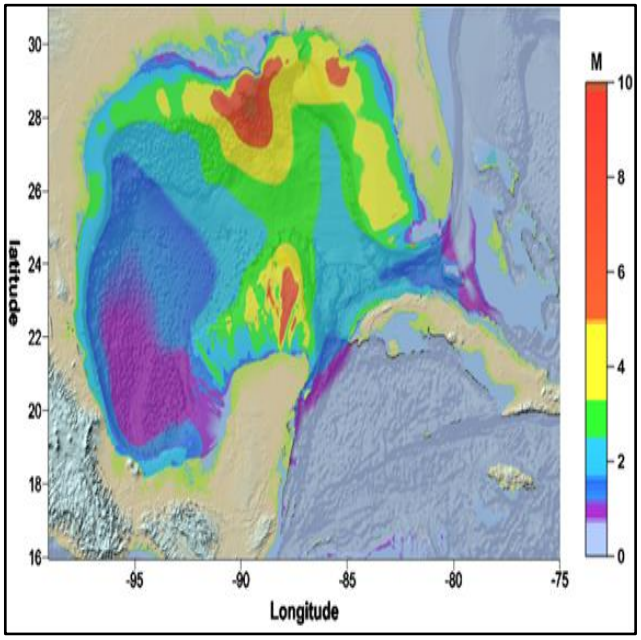
The Pacific Tsunami Warning Centre (PTWC) in Hawaii, United States of America, is the interim tsunami warning service provider for the Caribbean. The US National Tsunami Warning Centre (NTWC) is currently providing tsunami warning service for the USA territories in the Caribbean region.

At the national level, each Member State is responsible for issuing warnings to its own citizens. These warnings are based either on the TWFP's own analysis of the situation, on the messages and graphical products received from PTWC and NTWC (and some other sources), or on a combination of both.

This exercise provided simulated tsunami messages from the PTWC and NTWC triggered by a hypothetical earthquake located offshore Portugal (Figure 1 and Figure 3) and a submarine landslide within the Gulf of Mexico (Figure 2 and Figure 4). The Portugal event was modelled off the 1 November 1755 earthquake and tsunami. In the case of the submarine landslide in the Gulf, several studies have also been conducted evaluating this potential source (Knight, 2006; Horillo et al, 2010; and ten Brink, et al 2008, 2009).



Figure–1. Energy map
for Portugal source scenario.



Figure–2. Energy Map
for Gulf of Mexico source scenario

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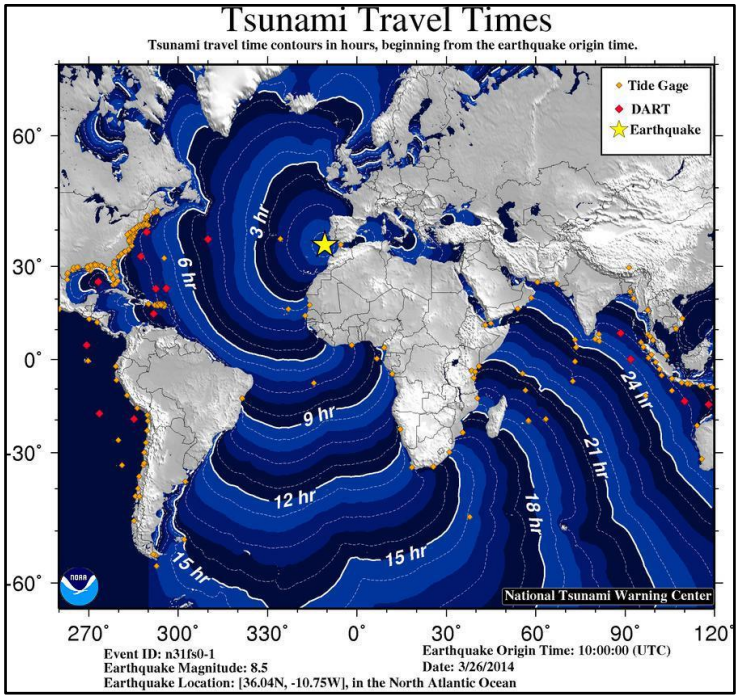
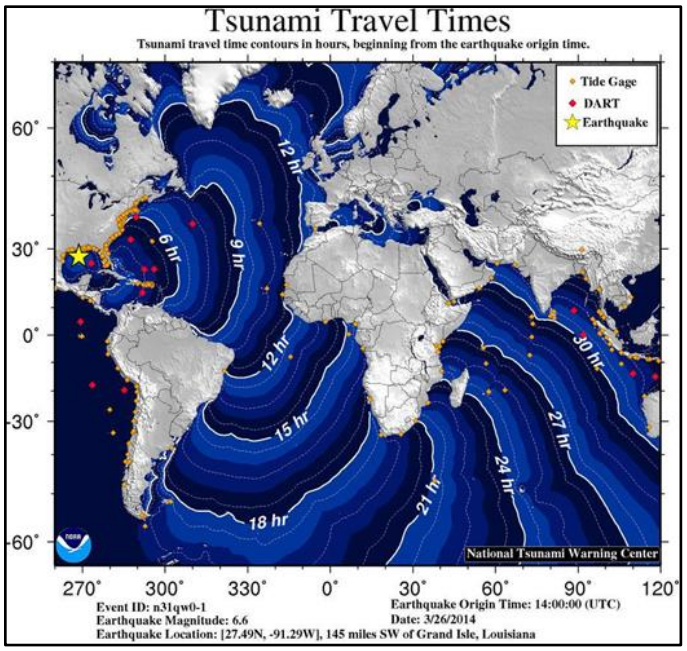


Figure–3. Travel times for Portugal source scenario



Figure–4. Travel times for Gulf of Mexico source scenario

2. EXERCISE CONCEPT

2.1 PURPOSE

The purpose of the exercise was to improve Tsunami Warning System effectiveness along the Caribbean coasts. The exercise provided an opportunity for Emergency Management Organizations throughout the Caribbean to exercise their operational lines of communications, review their tsunami response procedures, and promote tsunami preparedness. Regular exercising of response plans is critical to maintain readiness for an emergency. This is particularly true for tsunamis, which are infrequent but high impact events. Every Caribbean Emergency Management Organization (EMO) was encouraged to participate.

2.2 OBJECTIVES

Each organization was asked to develop their objectives for the exercise depending on their level of involvement in the scenario. The following were the exercise's overarching objectives.

1. To exercise and evaluate operations of the current Tsunami Warning System and in particular, the CARIBE-EWS:

    a. Validate the **issuance** of tsunami products from the PTWC and NTWC;

    b. Validate the **receipt and dissemination** of tsunami products by CARIBE-EWS Tsunami Warning Focal Points (TWFPs).

2. To begin a process of exposure to an initial test version of PTWC experimental (enhanced) products:

    a. Review and evaluate PTWC experimental products that will be available in parallel with existing PTWC products;

    b. Provide feedback on the staging, format, and content of the experimental products.

3. To validate the readiness to respond to a local/regional source tsunami**:**

   a. Validate the operational readiness of the Tsunami Warning Focal Point (TWFP, or like function) and/or the National Disaster Management Office (NDMO).

   b. To improve operational readiness. Before the exercise, ensure appropriate tools and response plan(s) have been developed, including public education materials

   c. Validate that the dissemination of warnings and information/advice by Tsunami Warning Focal Points to relevant in-country agencies and the public is accurate and timely.

   d. Validate the organisational decision-making process (tsunami response plans) about public warnings and evacuations.

   e. Validate that the methods used to notify and instruct the public are accurate and timely.

2.3 TYPES OF EXERCISE

The exercise was carried out such that communications and decision making at various organizational levels were exercised and conducted without disrupting or alarming the general public. Individual localities, however, elected to extend the exercise down to the level of testing local notification systems such as the Emergency Alert System (EAS), sirens and loudspeakers.

According to the registrations, 191,973 people were going to participate in the event throughout the Caribbean and Adjacent Regions; of these, 182,204 are from Puerto Rico where it was the 5th Commonwealth wide tsunami exercise. Registered participants included all officially designated CARIBE-EWS Tsunami Warming Focal Points (TWFPs), Brazil and Montserrat as observers, international, state, territorial and local Emergency Management Organizations, schools and universities, Governmental agencies, private organizations, health facilities, members of the media and individuals and families.

Exercises were conducted at various scales of magnitude and sophistication. Exercises simulated the development, training, testing, and evaluation of Disaster Plans and Standard Operating Procedures (SOPs). The following types of exercises were reported to have been conducted:

- Orientation Exercise (Seminar): An Orientation Exercise lays the groundwork for a comprehensive exercise program. It is a planned event, developed to bring together individuals and officials with a role or interest in multi-hazard response planning, problem solving, development of standard operational procedures (SOPs), and resource integration and coordination. An Orientation Exercise had a specific goal and written objectives and result in an agreed upon Plan of Action.

- Drill: The Drill is a planned activity that tests, develops, and/or maintains skills in a single or limited emergency response procedure. Drills generally involve operational response of single departments or agencies and can involve internal notifications and/or field activities.

Image–1. Drill in Gregorio Luperón School in Dominican Republic as part of the exercise Caribe Wave/Lantex 14

- Tabletop Exercise: The Tabletop Exercise is a planned activity in which local officials, key staff, and organizations with disaster management responsibilities are presented with simulated emergency situations. It is usually informal, in a conference room environment, and is designed to elicit constructive discussion from the participants. Participants will examine and attempt to resolve problems, based on plans and procedures, if they exist. Individuals are encouraged to discuss decisions in depth with emphasis on slow-paced problem solving, rather than rapid, real time decision-making.

Image–2. Tabletop exercise in Haiti

Image–3. Tabletop exercise in Dominican Republic

3. EXERCISE OUTLINE

3.1 GENERAL

Tsunami messages for this exercise are issued by the US NTWC and PTWC based on a hypothetical earthquake with the following hypocentre parameters:

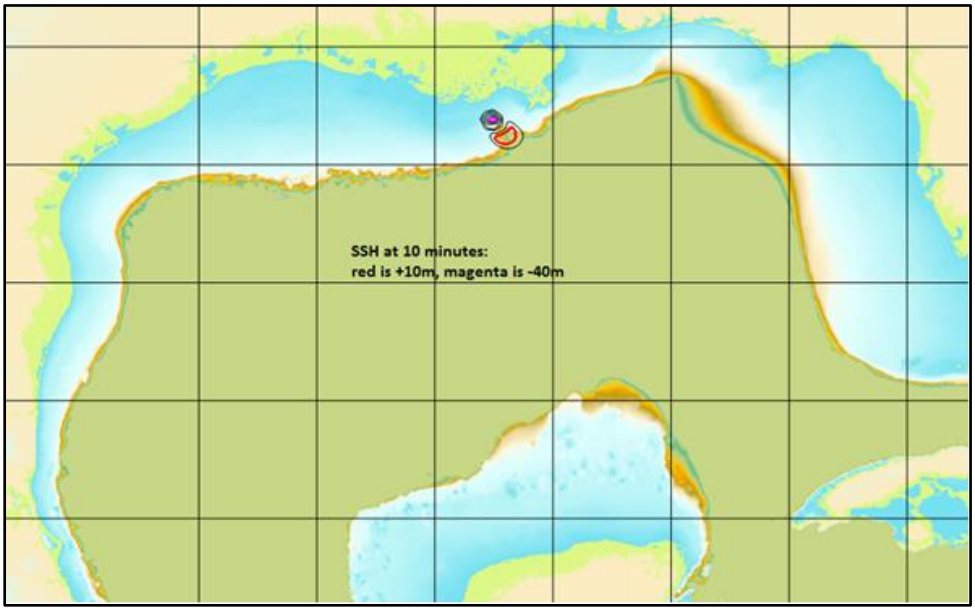
Portugal Scenario:

- Origin Time 10:00:00 UTC March 26, 2014
- Latitude 36.04oN
- Longitude 10.75oW
- Magnitude 8.5 – Mw
- Depth 5 km

Figure–5. CaribeWave/Lantex 14 event location in SW Portugal at 36.04N 10.75W

Gulf of Mexico Scenario:

- Origin Time 14:00:00 UTC March 26, 2014
- Latitude 27.49oN
- Longitude 91.29oW
- Magnitude 6.6 – Mw
- Depth 5 km



Figure–6. CaribeWave/Lantex 14 event location
in the Gulf of Mexico at 27.49N 91.29W

For the Portugal Scenario, Bulletin#1 was issued with a magnitude 8.0. For very large earthquakes, the initial magnitude determination at the TWCs is commonly low. Expected impact for this event is determined from tsunami forecast models.

In the case of the Gulf of Mexico Scenario, the earthquake was assumed to trigger a large sub-sea landslide, which in turn generated a large tsunami. Expected impact for the landslide generated tsunami is determined from the Alaska Tsunami Forecast Model (ATFMv2). ATFMv2 indicates a tsunami amplitude generally between one and five metres along the Gulf of Mexico coastline, with a maximum amplitude of near 11 metres at Pilot Station E off the Louisiana coast. Based on the models, the exercise alert areas were limited to the Gulf of Mexico and SE Florida.

Various levels of alert were issued by the TWCs throughout the event. Definitions of the products that were issued by the TWCs during this exercise are provided below (*Note that PTWC products differ from US NTWC products due to requirements set forth by the ICG/CARIBE-EWS*).

US National Tsunami Warning Center (US NTWC)

Tsunami Warning

A tsunami warning is issued when a tsunami with the potential to generate widespread inundation is imminent, expected, or occurring. Warnings alert the public that dangerous coastal flooding accompanied by powerful currents is possible and may continue for several

hours after initial arrival. Warnings alert emergency management officials to take action for the entire tsunami hazard zone. Appropriate actions to be taken by local officials may include the evacuation of low-lying coastal areas, and the repositioning of ships to deep waters when there is time to safely do so. Warnings may be updated, adjusted geographically, downgraded, or cancelled. To provide the earliest possible alert, initial warnings are normally based only on seismic information.

Tsunami Advisory

A tsunami advisory is issued due to the threat of a potential tsunami which may produce strong currents or waves dangerous to those in or near the water. Coastal regions historically prone to damage due to strong currents induced by tsunamis are at the greatest risk. The threat may continue for several hours after the arrival of the initial wave, but significant widespread inundation is not expected for areas under an advisory. Appropriate actions to be taken by local officials may include closing beaches, evacuating harbours and marinas, and the repositioning of ships to deep waters when there is time to safely do so. Advisories are normally updated to continue the advisory, expand/contract affected areas, upgrade to a warning, or cancel the advisory.

Tsunami Watch

A tsunami watch is issued to alert emergency management officials and the public of an event which may later impact the watch area. The watch area may be upgraded to a warning or advisory – or cancelled – based on updated information and analysis. Therefore, emergency management officials and the public should prepare to take action. Watches are normally issued based on seismic information without confirmation that a destructive tsunami is underway.

Tsunami Information Statement (TIS)

A tsunami information statement is issued to inform emergency management officials and the public that an earthquake has occurred, or that a tsunami warning, watch or advisory has been issued for another section of the ocean. In most cases, information statements are issued to indicate there is no threat of a destructive basin wide tsunami and to prevent unnecessary evacuations as the earthquake may have been felt in coastal areas. An information statement may, in appropriate situations, caution about the possibility of destructive local tsunamis. Information statements may be re-issued with additional information, though normally these messages are not updated. However, a watch, advisory or warning may be issued for the area, if necessary, after analysis and/or updated information becomes available.

Pacific Tsunami Warning Center (PTWC)

Tsunami Watch

A Tsunami Watch is issued by PTWC following a large earthquake to inform that there is the potential for a destructive tsunami to impact the region declared under a watch, or to inform regarding a confirmed tsunami with the potential to cause damage to the region declared under a watch. It is the highest level of alert issued by PTWC for the Caribbean region. It is issued by PTWC solely as advice to local governments that have the responsibility and authority to issue tsunami warnings for the areas under their jurisdiction or otherwise alert and instruct the public regarding appropriate response actions. Such actions may include the evacuation of low-lying areas and the repositioning of ships and boats to deep water. Tsunami Watch messages will be issued approximately every hour with updated information

including any measurements of tsunami waves and any appropriate expansion or reduction of the region under a watch until the watch is cancelled.

Tsunami Information Bulletin (TIB)

Tsunami Information, issued by PTWC in a Tsunami Information Statement, is to inform about the occurrence of a large earthquake with little or no tsunami generating potential, either because the earthquake has insufficient size, is located too far inland to disturb the sea, is too deep within the earth to significantly displace the seafloor, or some combination of the above. In rare cases, an earthquake in this category can be accompanied by a locally destructive tsunami due to a collateral tsunamigenic phenomenon such as a landslide into the sea or an undersea slump. This product is issued solely as advice to local governments that have the responsibility and authority to alert and instruct the public regarding appropriate response actions. Supplemental tsunami information may be issued if a tsunami signal is detected on nearby gauges or if there is a significant change to the preliminary earthquake parameters.

The TWCs did not issue live messages over broadcast dissemination channels other than to issue an initial dummy message to start the exercise at 10h05 UTC (Portugal) and 14h02 UTC (Gulf of Mexico) on March 26, 2014. However, **over 30,000 messages were emailed** from the TWCs and the Puerto Rico Seismic Network to specific recipients who registered to receive live dissemination throughout the event (http://www.prsn.uprm.edu/caribewave-lantex2014/registro). The content of the dummy messages and the alert products is given in the participant handbook (IOC/2013/TS/109VOL.1).

In addition, CARIBE-EWS Member States had an opportunity to view and exercise with the PTWC proposed CARIBE-EWS enhanced products if they choose to do so. They were made available along with a more detailed description of their content and the accompanying text products and are included in ANNEX III for reference and at http://www.caribewave.info

3.2 MASTER SCHEDULE (EXERCISE SCRIPT)

Tables 1, 2 and 3 contain the scenario timeline for the exercises of Portugal and Gulf of Mexico, as well as the product types in Table 4 that were disseminated for this exercise by the Tsunami Warning Centres.

Tsunami generated by a magnitude 8.5 earthquake with epicentre at 36.04ºN, 10.75ºW occurring on 26 March 2014 at 1000 UTC.

Date (UTC)	Time (UTC)	US NTWC Message				PTWC Message			
		#	Type	Dummy	Email	#	Type	Dummy	Email
03/26/2014	1000		------Earthquake Occurs------						
03/26/2014	1005		Dummy	Yes	Yes		Dummy	Yes	Yes
03/26/2014	1005	01	TIS #1 Watch?	No	Yes	01	Watch	No	Yes
03/26/2014	1103	02	Watch	No	Yes	02	Watch	No	Yes
03/26/2014	1204	03	Watch	No	Yes	03	Watch	No	Yes
03/26/2014	1300	04	Watch	No	Yes	04	Watch	No	Yes
03/26/2014	1400	05	Adv/Warn	No	Yes	05	Watch	No	Yes
03/26/2014	1500	06	Adv/Warn	No	Yes	06	Watch	No	Yes
03/26/2014	1602	07	Adv/Warn	No	Yes	07	Watch	No	Yes
03/26/2014	1703	08	Adv/Warn	No	Yes	08	Watch	No	Yes
03/26/2014	1805	09	Adv/Warn	No	Yes	09	Watch	No	Yes
03/26/2014	1905	10	Adv/Warn	No	Yes	10	Watch	No	Yes
03/26/2014	2002	11	Adv	No	Yes	11	Watch	No	Yes
03/27/2014	2101	12	Adv	No	Yes	12	Watch	No	Yes
03/27/2014	2201	13	Adv	No	Yes	13	Watch	No	Yes
03/27/2014	2255	14	Can	No	Yes				Yes
03/26/2014	2300	14				14	Watch	No	Yes
03/26/2014	2355	15				15	Can	No	Yes

Table–1. Portugal Scenario Timeline.
NTWC and PTWC Messages.

NTWC Scenario Timeline for Tsunami generated by a magnitude 6.6 earthquake with epicentre at 27.5ºN, 91.3ºW occurring on 26 March 2014 at 1400 UTC.

Date (UTC)	Time (UTC)	NTWC Message			
		#	Type	Dummy	Email
03/26/2014	1400		***Earthquake Occurs***		
03/26/2014	1402	01	Warn	Yes	Yes
03/26/2014	1431	02	Warn	No	Yes
03/26/2014	1502	03	Adv/Warn	No	Yes
03/26/2014	1601	04	Adv/Warn	No	Yes
03/26/2014	1703	05	Adv/Warn	No	Yes
03/26/2014	1801	06	Adv/Warn	No	Yes
03/26/2014	1902	07	Adv/Warn	No	Yes
03/26/2014	2001	08	Adv/Warn	No	Yes
03/26/2014	2100	09	Adv	No	Yes
03/26/2014	2200	10	Adv	No	Yes
03/26/2014	2302	11	Can	No	Yes

Table–2. Gulf of Mexico Scenario Timeline.
NTWC Messages.

PTWC Scenario Timeline for tsunami generated by a magnitude 6.6 earthquake with epicentre at 27.5ºN, 91.3ºW occurring on 26 March 2014 at 1400 UTC.

Date (UTC)	Time (UTC)	PTWC Message			
		#	Type	Dummy	Email
03/26/2014	1400		***Earthquake Occurs***		
03/26/2014	1403		Dummy	Yes	Yes
03/26/2014	1403	01	Information	Yes	Yes*
03/26/2014	1502	02	Watch	No	Yes*
03/26/2014	1602	03	Watch	No	Yes*
03/26/2014	1702	04	Watch	No	Yes*
03/26/2014	1802	05	Watch	No	Yes*
03/26/2014	1902	06	Watch	No	Yes*
03/26/2014	2002	07	Watch	No	Yes*
03/26/2014	2102	08	Watch	No	Yes*
03/26/2014	2202	09	Watch	No	Yes*
03/26/2014	2302	10	Can	No	Yes*

Table–3. Gulf of Mexico Scenario Timeline.
PTWC Messages.

The initial Dummy messages were disseminated over all standard TWC broadcast channels as listed in Table 4. This was issued to test communications with EMOs and Tsunami Warning Focal Points, and to start the exercise. US NTWC Dummy messages were issued with the WMO ID WEXX30 PAAQ and AWIPS ID TSUATE, and the PTWC Dummy messages with the WMO ID WECA41 PHEB, and AWIPS ID TSUCAX. The TWFP reported using a variety of methods to receive the Dummy messages, with fax and email being the most common (Figure 7).

A real tsunami warning/watch/advisory issued for an event as described would likely last many hours longer than this exercise. The exercise was tailored to complete within a compressed time frame.

TWC Message Types

TIS	Tsunami Information Statement
Warn	Tsunami Warning
Watch	Tsunami Watch
Adv	Tsunami Advisory
Can	Cancellation

Dummy

Yes	Dummy Issued
No	Dummy Not Issued

Email

Yes	Message disseminated via special email list
No	Message not disseminated via special email list

Product Types

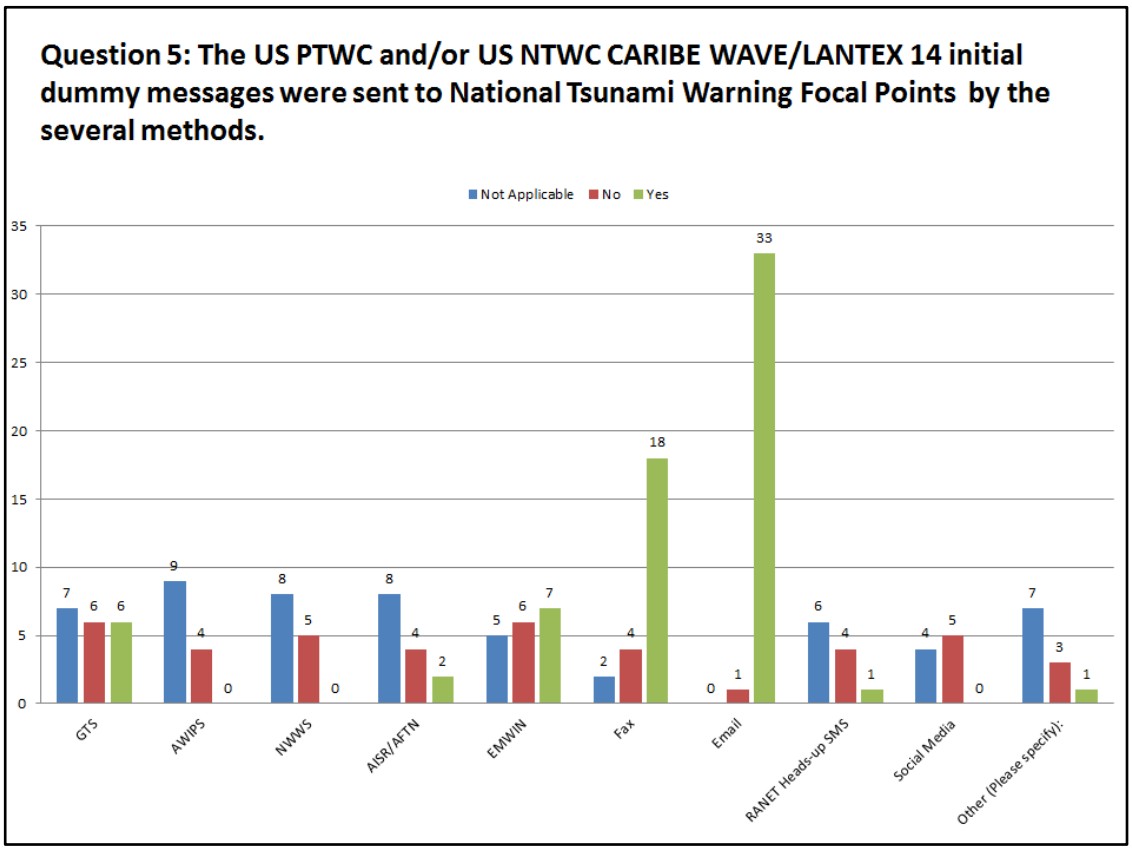
Product Types Issued for Dummy Message with Transmission Methods

Centre	WMO ID	AWIPS ID	NWWS	GTS	EMWIN	AISR	Fax	Email
NTWC	WEXX30 PAAQ	TSUATE	Yes	Yes	Yes	Yes	Yes	Yes
PTWC	WECA41 PHEB	TSUCAX	Yes	Yes	Yes	Yes	Yes	Yes

Table–4. Product Types

Methods

Methods used to receive Dummy messages.



Figure–7. Methods that CARIBE-EWS TWFP used to receive the Dummy message sent by the US TWC during Caribe Wave/Lantex 14.

3.3 ACTIONS IN CASE OF A REAL EVENT

In the case of a real event occurring during the exercise, the TWCs were to issue their normal messages for the event, unless the real event was of significance that the exercise would interfere. **No significant real events occurred during the exercise.**

3.4 PROCEDURE FOR FALSE ALARM

Any time disaster response exercises are conducted, the potential exists for the public or media to interpret the event as real. All participating entities were encouraged to have procedures to address public or media concerns involving this exercise in case of misinterpretation by media or the public. There were **no significant false alarms reported by the MS and Territories**. There were some inquiries reported from Bahamas and Barbados, but all were handled.

3.5 REGISTRATIONS PROCEDURE

The registration for the Caribe Wave/Lantex 14 was facilitated by the Puerto Rico Seismic Network thru an online process. The form (Figure 8) contained 9 fields to complete the registration which included: Name, email, country, town (if it was applicable), phone, mobile service provider, kind of participant, agency, and number of participants. Tables 5 and 6 contain a summary by participants and countries, making a total of 191,973 registrations for the Caribe Wave/Lantex 14 exercise.

Registration procedure

PARTICIPANT TYPE	NUMBER OF PERSONS	NUMBER OF REGISTRATIONS
Tsunami Warning Points (includes national and local)	8205	98
Tsunami National Contact	4635	19
State Agencies	35935	318
National Agencies	1427	23
International Agencies	1242	42
Private Companies	1496	35
Educational Entities	130849	432
Media	125	15
Health Facilities	5157	68
Community	1424	28
Individual/Familiar	1478	332
Total:	191973	1410

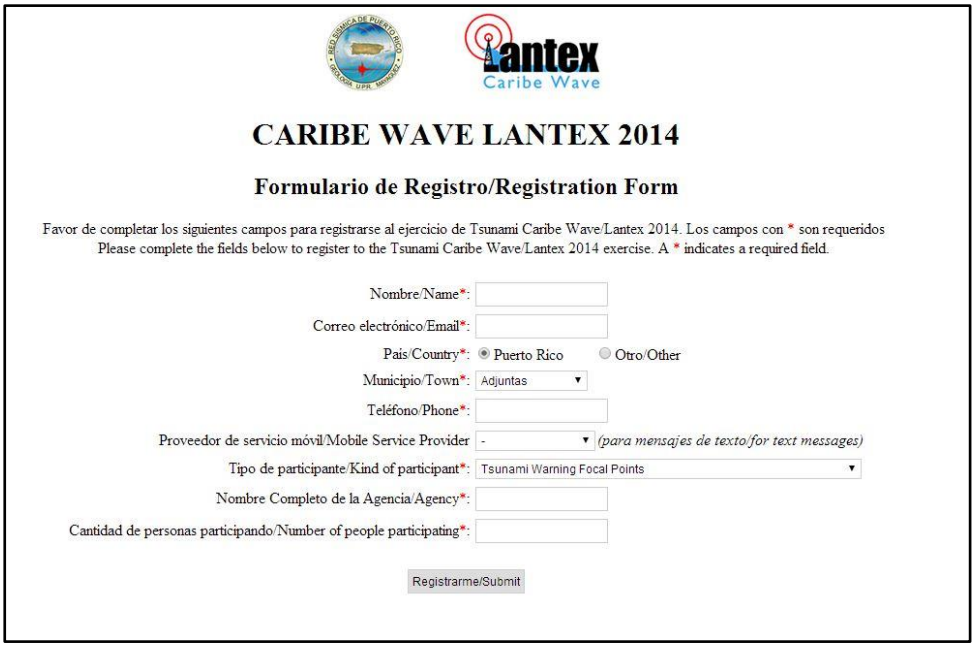
Table–5. Participants for the CARIBEWAVE/LANTEX 2014 Tsunami exercise (Source: Puerto Rico Seismic Network 2014).

Numbers by Country/Territory

COUNTRY	NUMBER OF PERSONS	NUMBER OF REGISTRATIONS
Anguilla	66	3
Antigua & Barbuda	69	2
Aruba	10	2
Barbados	61	9
Belize	11	1
Bermuda	9	3
Brazil	10	1
British Virgin Islands	2881	18
Cayman Islands	27	2
Central America	2	1
Colombia	12	5
Costa Rica	10	1
Curaçao, Bonaire, St Eustatius, Saba	15	1
Dominica	6	1
France	2	2
Grenada	500	1
Guadeloupe, France	6	1
Guatemala	12	1
Guyana	4	2

COUNTRY	NUMBER OF PERSONS	NUMBER OF REGISTRATIONS
Guyane, France	6	1
Haiti	365	10
Honduras	5	1
Jamaica	15	3
Martinique, France	20	5
Mexico	32	3
Montserrat	2	1
Nicaragua	79	2
Panama	16	5
Puerto Rico	182204	1296
Dominican Republic	79	13
Saint Lucia	2841	57
Saint Maarten	4	1
St. Kitts-Nevis	2000	1
St. Vincent and the Grenadines	30	1
Suriname	3	1
The Bahamas	25	2
Trinidad & Tobago	46	3
Turks & Caicos Islands	2316	6
U.S. Virgin Islands	192	10
United States	75	12
Venezuela	305	8

Table–6. Numbers by countries for the Caribe Wave/Lantex 14 Tsunami exercise (Source: Puerto Rico Seismic Network 2014).



CARIBE WAVE LANTEX 2014

Formulario de Registro/Registration Form

Favor de completar los siguientes campos para registrarse al ejercicio de Tsunami Caribe Wave/Lantex 2014. Los campos con * son requeridos
Please complete the fields below to register to the Tsunami Caribe Wave/Lantex 2014 exercise. A * indicates a required field.

Nombre/Name*:
Correo electrónico/Email*:
País/Country*: Puerto Rico Otro/Other
Municipio/Town*: Adjuntas
Teléfono/Phone*:
Proveedor de servicio móvil/Mobile Service Provider - *(para mensajes de texto/for text messages)*
Tipo de participante/Kind of participant*: Tsunami Warning Focal Points
Nombre Completo de la Agencia/Agency*:
Cantidad de personas participando/Number of people participating*:

Registrarme/Submit

Figure–8. Registration Form for the Caribe Wave/Lantex 14
(Source: Puerto Rico Seismic Network 2014).

3.6 SEA LEVEL STATION STATUS DURING EXERCISE

As part of the Exercise Caribe Wave/Lantex 14, a complete analysis of the sea level was conducted by the CTWP. This analysis was made with the purpose of monitoring the sea level along the Caribbean Sea and the Atlantic Ocean. This analysis permits the system to evaluate what sea level data could be available in case of a real event. Of the 29 stations for which the NTWC provided wave heights, 19 (66%) were reporting to the IOC Sea Level facility during the exercise times. In the case of PTWC, the messages contained wave height for 128 stations, of these 61 (48%) were reporting to the IOC Sea Level monitoring facility during the exercise times and 70 (58%) had data available thru TideTool. Refer to ANNEX II for more information on sea level stations. In the case of IPMA, the 20 stations they included in their products there were data available for 13 (65%) stations at IOC Sea Level Monitoring Facility. Many of the stations used by the TWC are not available thru the IOC. Of the stations which have **data streaming into IOC, the data availability was 76% for NTWC, 71% for PTWC, and 100% for IPMA**. Also, Annex II includes a table with the wave heights forecasted by PTWC, NTWC and IPMA for the Portugal event.

3.7 RESOURCES

Although EMOs had advance notice of the exercise and some elected to stand up a special dedicated shift to allow normal core business to continue uninterrupted, it was requested that realistic resource levels be deployed in order to reflect some of the issues that are likely to be faced in a real event. Table 7 contains a list of resources that helped in the planning and conduct of the exercise and were available to the countries.

PERSON	TELEPHONE #	EMAIL
Christa von Hillerbrandt-Andrade, CARIBE EWS and CARIBE WAVE 14 Chair; NWS CTWP Manager	787-249-8307	christa.vohn@noaa.gov
Victor Hugo Cano, Vice Chair	58-212-2575153	cano.victor.hugo@gmail.com
Dawn French, Vice Chair	758-452-3802	director@nemo.gov.lc
Phillipe Sarron		philippe.sarron@martinique.pref.gouv.fr
Jean Marie Saurel, Chair WG1	596-596-784146	saurel@ipgp.fr
Narcisse Zahibo, Chair WG2	590-590-615590	narcisse.zahibo@univ-ag.fr
Kerry Hinds, Chair WG4	246-438-7575	cero@caribsurf.com
Alison Brome, Director of Caribbean Tsunami Information Center	-246-438-7575	a.brome@unesco.org
Charles McCreery , PTWC Director	808-689-8207	charles.mccreery@noaa.gov
Gerard Fryer, PTWC Rep.	808-689-8207	gerard.fryer@noaa.gov
Paul Whitmore, NTWC Director	907-745-4212	paul.whitmore@noaa.gov
James Waddell, NTWC Rep.	907-745-4212	james.waddell@noaa.gov
Ronald Jackson, Director of CDEMA	246-425-0386	ronald.jackson@cedema.org
Roy Barboza, Executive Secretary of CEPREDENAC	502-2390-0200	rbarboza@sica.int
Wilfried Strauch of CEPREDENAC	502-2390-0200	wstrauch@sica.int
Bernardo Aliaga, Technical Secretary ICG CARIBE EWS	33-1-45683980	b.aliaga@unesco.org
Melinda Bailey, NWS Southern Region	817-978-1100 ext107	melinda.bailey@noaa.gov
Wilfredo Ramos, PRSEMA	787-724-0124 ext20036	wramos@prema.pr.gov
Victor Huérfano, Puerto Rico Seismic Network	787-833-8433	victor@prsn.uprm.edu
Fernando Carrilho, Instituto Portugues do Mar e da Atmósfera	+351 218 447 000	fernando.carrilho@ipma.pt

#Table–7.Contacts for organization and conduct of Caribe Wave/Lantex 14.

3.8 MEDIA ARRANGEMENTS

One advantage in conducting exercises is that it provides a venue to promote awareness of the exercise topic. Many residents along the Caribbean and Northwestern Atlantic coasts may not realize that a tsunami warning system exists for their region, let alone the proper response. **Fifty-four percent (54%) of the CARIBE-EWS Member States and Territories**

indicated that the news media participated and covered the exercise (copies of the press releases and media outputs are available upon request).

Figure–9. Press conference at Puerto Rico State Emergency and Management Agency announcing Caribe Wave/Lantex 14.

4. POST-EXERCISE EVALUATION

All participating agencies were requested to provide feedback on the exercise. This feedback assists the ICG/CARIBE-EWS, NTHMP, and NOAA in the evaluation of the exercise Caribe Wave/Lantex 14, and the development of subsequent exercises. It also helps response agencies document lessons learned. The survey was conducted by the IOC/UNESCO using Survey Monkey. It contained 80 questions. **Thirty six Tsunami National Contacts representing 47 of the 48 Member States and Territories of CARIBE-EWS (98%) answered the online survey**. The questions as well as the answers and comments are contained in ANNEX I. This questionnaire has a wealth of information that is important for the evaluation and planning of tsunami exercises but reflects the level of tsunami preparedness in the region.

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ANNEX I

SURVEY RESULTS

Caribe Wave/Lantex 14 Survey Report from TNCs

The Member States and territories that participated in the survey were:

1. Aruba
2. Antigua and Barbuda
3. Bahamas
4. Barbados
5. Belize
6. Brazil*
7. Colombia
8. Costa Rica
9. Curaçao (answers also included for Netherlands)
10. Dominica
11. Dominican Republic
12. France (Martinique, Guadaloupe, St. Martin, Guyane, Saint Bartholomey)
13. Grenada
14. Guatemala
15. Guyana
16. Haiti
17. Honduras
18. Jamaica
19. Mexico
20. Netherlands (Bonaire, Saba, Sint Eustatius-answered by Curaçao)
21. Nicaragua
22. Panama
23. Saint Kitts and Nevis
24. Saint Lucia
25. Saint Vincent and the Grenadines
26. Sint Maarten
27. Suriname
28. Trinidad and Tobago
29. United Kingdom of Great Britain and Northern Ireland (Anguilla, Bermuda, British Virgin Islands, Cayman Islands, Montserrat*, and Turks and Caicos)
30. United States of America(Puerto Rico and US Virgin Islands)
31. Venezuela (Bolivarian Republic of)

*Participated as an Observer, no TWFP had been designated at the time of the exercise.

Question 1 Contact Information		
Answer Options	**Response Percent**	**Response Count**
Agency/Organization	100.0%	36
Member State/Territory	100.0%	36
Name (First, Last)	100.0%	36
Your position or job title	100.0%	36
Telephone	100.0%	36
Mobile	91.7%	33
Email address	100.0%	36
	answered question	**36**
	skipped question	**0**

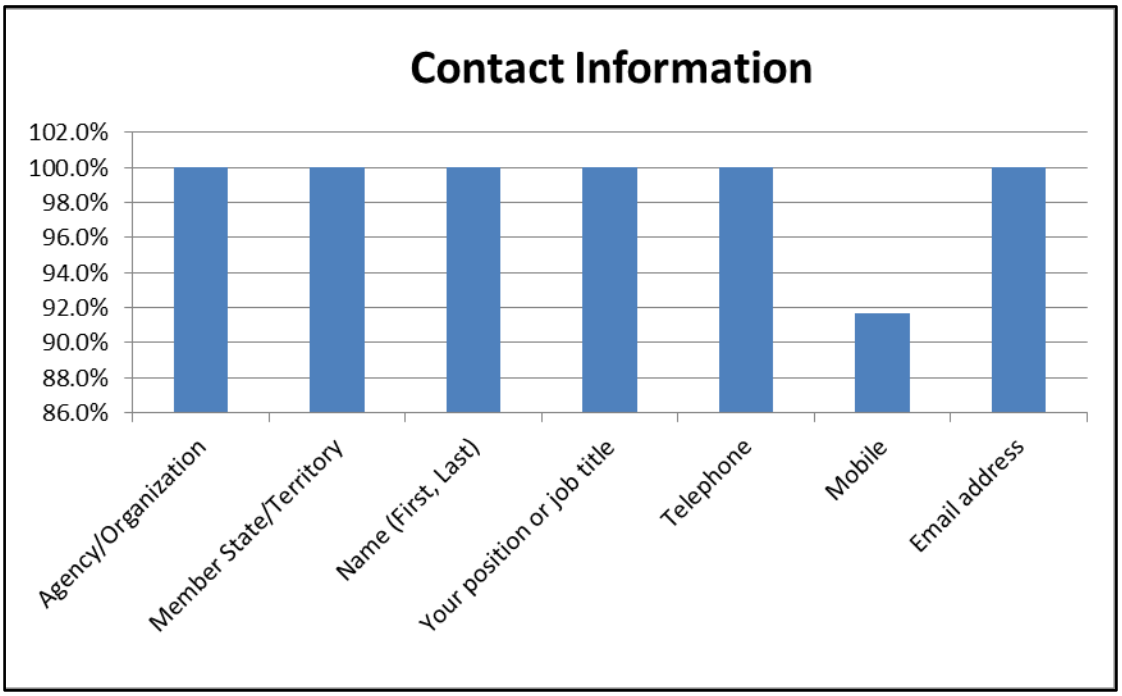

Figure I–1. Contact Information for Exercise Caribe Wave/Lantex 14

Question 2 Did your Member State/Territory participate in CARIBE WAVE/LANTEX 14?		
Answer Options	**Response Percent**	**Response Count**
Yes	100.0%	36
No	0.0%	0
Comments:		3
	answered question	**36**
	skipped question	**0**

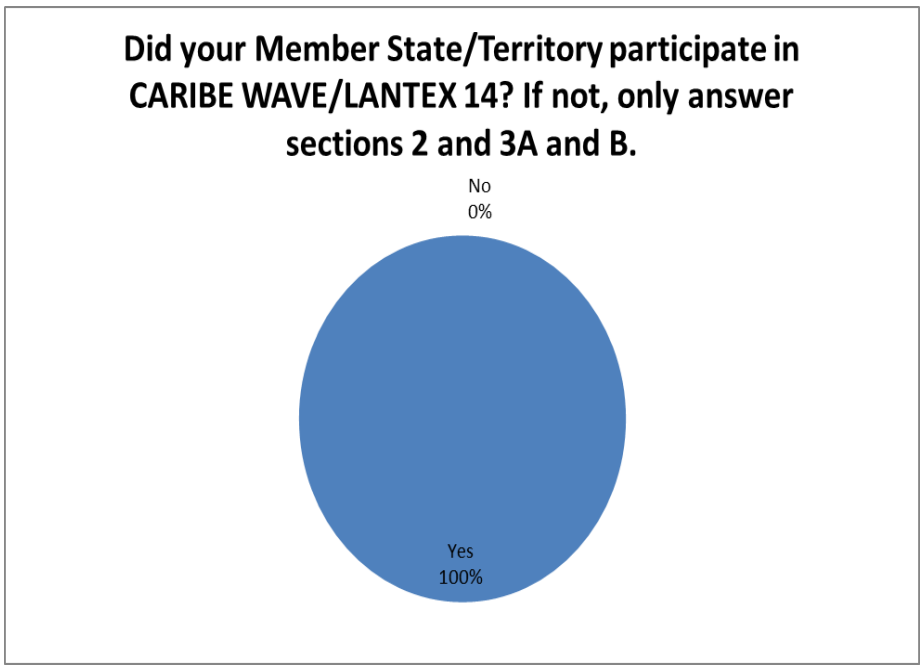

Figure I–2. Member States and Territories participating in the Exercise Caribe Wave/Lantex 14

All countries participated in the Exercise Caribe Wave/Lantex 14.

The comments received form the participants Tsunami National Contact (TNC) were:

- Dominica: Had a good experience.
- Nicaragua: Participación en el ejercicio de gabinete del Sistema Nacional para la Atención y Prevención de Desastres SINAPRED, se formó una comisión especial para la preparación, ejecución y evaluación del ejercicio con las siguientes Instituciones, miembro del SINAPRED: Secretaria Ejecutiva SINAPRED, Instituto Nicaragüense de Estudios Territoriales INETER, Defensa Civil, Ejército de Nicaragua, Ministerio de Salud (MINSA con sus delegaciones en el territorio), Ministerio de Educación con sus delegaciones en el territorio) y Empresa Portuaria Nacional (EPN con sus delegaciones).
- Jamaica: Discussion forms are National Tsunami Protocol & Response.

Question 3:

Are you filling out this evaluation as the Tsunami National Contact or Designated Authority (eg. Tsunami Warning Focal Point)?

Answer Options	Response Percent	Response Count
Yes	100.0%	36
No	0.0%	0
Comments:		13
	answered question	**36**
	skipped question	**0**

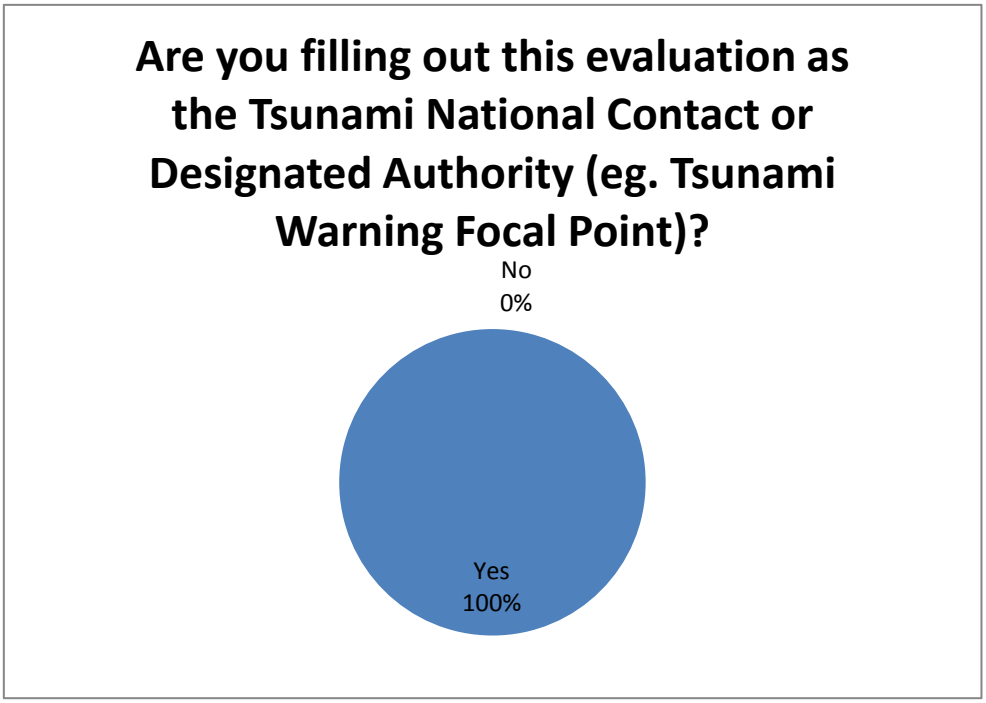

Figure I–3. Evaluation form
filled by the TNC or Designed Authority

All countries answer: **YES**.

The comments received form the participants Tsunami National Contact (TNC) were:

- Suriname: Form filled out by Christa von Hillebrandt based on conversation with Director and Dulci Duurham.
- Guyana: Filled out by Christa von Hillebrandt based on data provided by Mr. McPherson
- Montserrat: Not officially designated as of yet.
- Honduras: Jefe de Alerta Temprana y Punto Focal.
- Sint Maarten: TNC
- Saint Vincent and the Grenadines: TNC

- Turks and Caicos: The DDME is the Tsunami National Contact and Designated Authority for the Turks and Caicos Islands.

- Dominica: as TNC.

- Nicaragua: La evaluación se realizó en pleno con los técnicos que prepararon y ejecutaron el plan de realización del ejercicio, aprobado por las máximas autoridades nacionales en la temática.

- Saint Kitts and Nevis**:** TNC.

- Mexico: TSUNAMI WARNING FOCAL POINT

- Costa Rica: Alternin TNC and TWFP.

- Jamaica: Not Focal Point, but as part of the National Disaster Office.

Question 4

The information issued by the US Tsunami Warning Centres was according to the CARIBE WAVE/LANTEX 2014 Participant Handbook.

Answer Options	Response Percent	Response Count
Yes	100.0%	35
No	0.0%	0
Comments:		3
answered question		**35**
skipped question		**1**

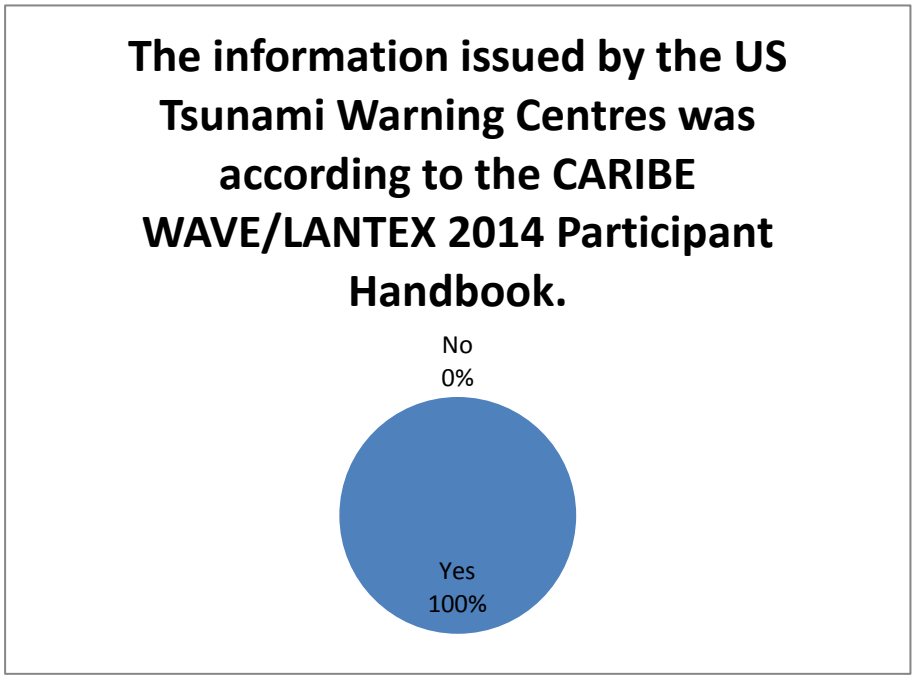

Figure I–4. Information issued by US TWCs
in accordance with the Caribe Wave/Lantex 14 participant handbook

All countries answer: **YES.**

The comments received form the participants Tsunami National Contact (TNC) were:

- Honduras: Sugiero que predomine el idioma Español para Latinoamérica
- Sint Marteen: We only received the starting message.
- Saint Lucia: I did not register as I was a player and did want advance notice.

Question 5

The US PTWC and/or US NTWC CARIBE WAVE/LANTEX 14 initial dummy messages were sent to National Tsunami Warning Focal Points by the several methods.

Answer Options	Yes	No	Not Applicable	Response Count
GTS	6	6	7	19
AWIPS	0	4	9	13
NWWS	0	5	8	13
AISR/AFTN	2	4	8	14
EMWIN	7	6	5	18
Fax	18	4	2	24
Email	33	1	0	34
RANET Heads-up SMS	1	4	6	11
Social Media	0	5	4	9
Other (Please specify):	1	3	7	11
Comments:				7
			answered question	**34**
			skipped question	**2**

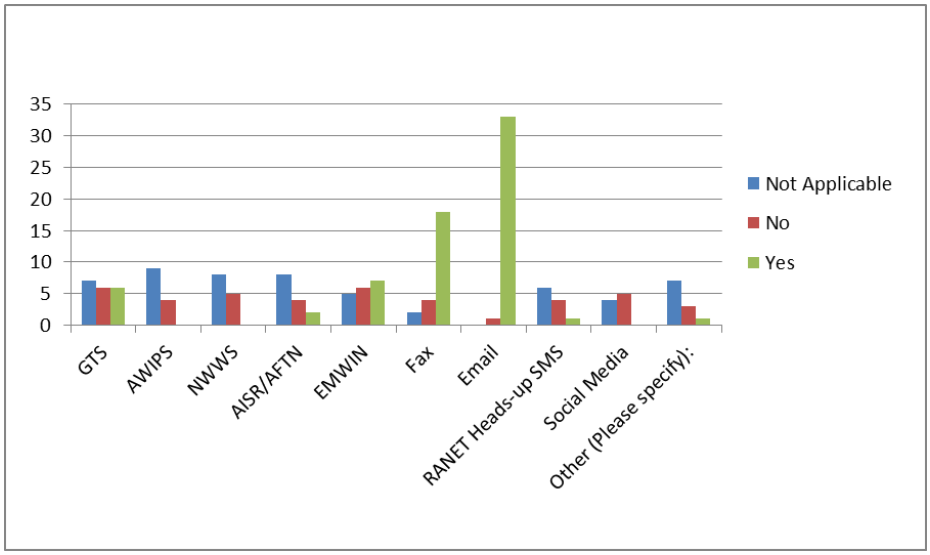

Figure I–5. Methods used by the US PTWC and/or US NTWC
To send initial Dummy messages during the Exercise Caribe Wave/Lantex 14

The countries who answered **YES** to the above question were:

- GTS: Antigua and Barbuda, Aruba, Barbados, Belize, Curaçao, and French West Indies.
- AWIPS: N/A.
- NWWS: N/A.
- AISR/AFTN: Bermuda, and Dominican Republic.
- EMWIN: Anguilla, Aruba, Belize, British Virgin Islands, Curaçao, Haiti, and The Bahamas.

- Fax: Antigua and Barbuda, Aruba, Belize, Bermuda, British Virgin Islands, Colombia, Dominica, Curaçao, Dominican Republic, Guatemala, Honduras, Nicaragua, Sint Maarten, Saint Kitts and Nevis, Trinidad and Tobago, Turks and Caicos, US Virgin Islands, and Venezuela.
- Email: Anguilla, Antigua and Barbuda, Aruba, Barbados, Belize, Bermuda, Brazil, British Virgin Islands, Cayman Islands, Colombia, Dominica, Costa Rica, Curaçao, Dominican Republic, French West Indies, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Montserrat, Nicaragua, Saint Vincent and The Grenadines, Sint Maarten, Saint Kitts and Nevis, Suriname, The Bahamas, Trinidad and Tobago, Turks and Caicos, US Virgin Islands, and Venezuela.
- RANET Heads-up SMS: Honduras.
- Social Media: N/A.
- Other (Please specify): Honduras.

The countries who answered **NO** to the above question were:

- GTS: Brazil, British Virgin Islands, Colombia, Guyana, Haiti, and Nicaragua.
- AWIPS: British Virgin Islands, Colombia, Haiti, and Nicaragua.
- NWWS: British Virgin Islands, Colombia, Dominican Republic, Haiti, and Nicaragua.
- AISR/AFTN: British Virgin Islands, Colombia, Haiti, and Nicaragua.
- EMWIN: Colombia, Dominican Republic, Nicaragua, Puerto Rico, Suriname, and Turks and Caicos.
- Fax: Guyana, Haiti, Puerto Rico, and Suriname.
- Email: Puerto Rico.
- RANET Heads-up SMS: British Virgin Islands, Colombia, Haiti, and Nicaragua.
- Social Media: British Virgin Islands, Colombia, Dominican Republic, Haiti, and Nicaragua.
- Other (Please specify): British Virgin Islands, Haiti, and Nicaragua.

The countries who answered **NOT APPLICABLE** to the above question were:

- GTS: Costa Rica, Dominican Republic, Honduras, Puerto Rico, Saint Vincent and The Grenadines, Sint Maarten and Turks and Caicos.
- AWIPS: Costa Rica, Curazao, Dominican Republic, French West Indies, Honduras, Puerto Rico, Saint Vincent and The Grenadines, Sint Maarten and Turks and Caicos.
- NWWS: Costa Rica, Curaçao, French West Indies, Honduras, Puerto Rico, Saint Vincent and The Grenadines, Sint Maarten and Turks and Caicos.
- AISR/AFTN: Costa Rica, Curazao, French West Indies, Honduras, Puerto Rico, Saint Vincent and The Grenadines, Sint Maarten and Turks and Caicos.
- EMWIN: Costa Rica, French West Indies, Honduras, Saint Vincent and The Grenadines, and Sint Maarten.
- Fax: Costa Rica, and French West Indies.
- Email: N/A.
- RANET Heads-up SMS: Costa Rica, Dominican Republic, French West Indies, Puerto Rico, Sint Maarten, and Turks and Caicos.

- Social Media: Costa Rica, French West Indies, Sint Maarten, and Turks and Caicos.
- Other (Please specify): Colombia, Costa Rica, Dominican Republic, French West Indies, Puerto Rico, Sint Maarten, and Turks and Caicos.

Question 6

Did the Tsunami Warning Focal Point receive any message from an organization other than the PTWC and/or US NTWC?

Answer Options	Response Percent	Response Count
Yes	30.3%	10
No	69.7%	23
Comments:		11
answered question		**33**
skipped question		**3**

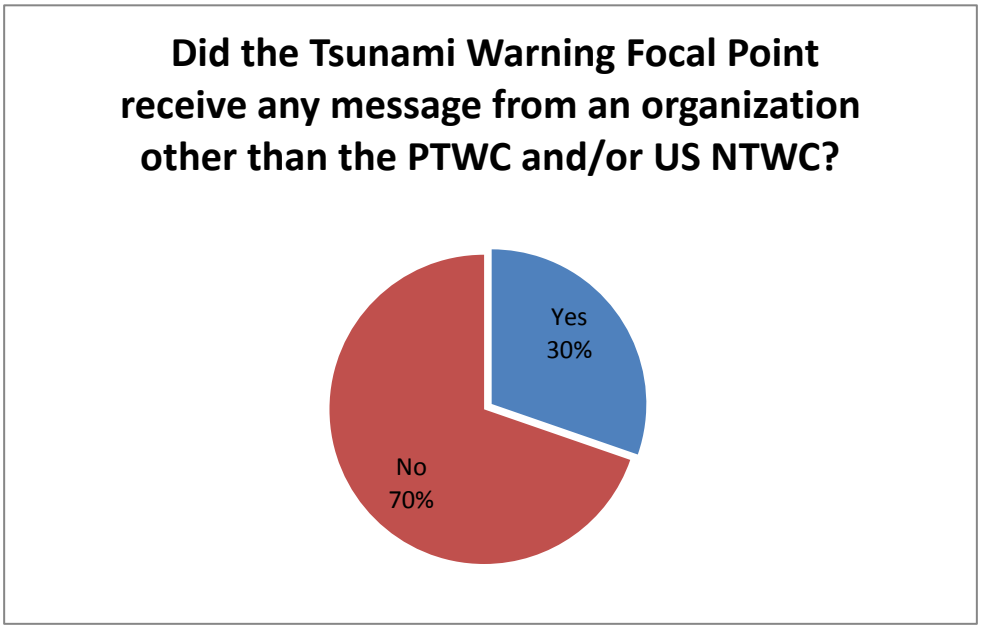

Figure I–6. Percentage of messages received by the TWFP that were sent from an organization other than the PTWC and/or US NTWC

The countries who answered **YES** to the above question were: Antigua and Barbuda, Barbados, Colombia, Dominican Republic, Haiti, Nicaragua, Puerto Rico, Turks and Caicos, US Virgin Islands, and Venezuela.

The countries who answered **NO** to the above question were: Honduras, Saint Vincent and the Grenadines, Sint Marteen, Bermuda, Bahamas, Belize, Guatemala, Dominica, Anguilla, Aruba, Brazil, British Virgin Islands, Cayman Islands, Costa Rica, Curazao, French West Indies, Grenada, Guatemala, Guyana, Jamaica, Mexico, Montserrat, and Saint Kitts and Nevis.

The comments received from the participant Tsunami National Contacts (TNC) were:

- Honduras: Los canales oficiales para Honduras son el PTWC- NTWC.
- Haiti: PRSN.
- Venezuela: FUNVISIS.

- Turks and Caicos: The TWFP also received messages from the DDME (the Tsunami Warning Contact/Designated Authority) as the DDME is on the PTWC mailing list.

- Nicaragua: Solamente el INETER recibió los mensajes del ejercicio, no así el resto de participantes inscritos a través del correo egew2014@gf.ineter.gob.ni, los cuales recibirían los mensajes desde el Centro de Alerta de Tsunami de Hawaii.

- Dominican Republic: RSPR

- Colombia: IOC Public_List: tsunami-information-ioc@lists.unesco.org

- Antigua and Barbuda: Red Sísmica de Puerto Rico <rsismica@prsn.uprm.edu>

- Saint Lucia: Don't know.

- Puerto Rico: Puerto Rico Seismic Network.

- Barbados: Exercise Director for National Communications Exercise Barbados.

Question 7

The US PTWC and/or US NTWC CARIBE WAVE/LANTEX 14 scenario initial dummy message was received by your country Tsunami Warning Focal Point.

Answer Options	Response Percent	Response Count
Yes	93.9%	31
No	3.0%	1
Not Applicable	3.0%	1
Comments:		5
	answered question	**33**
	skipped question	**3**

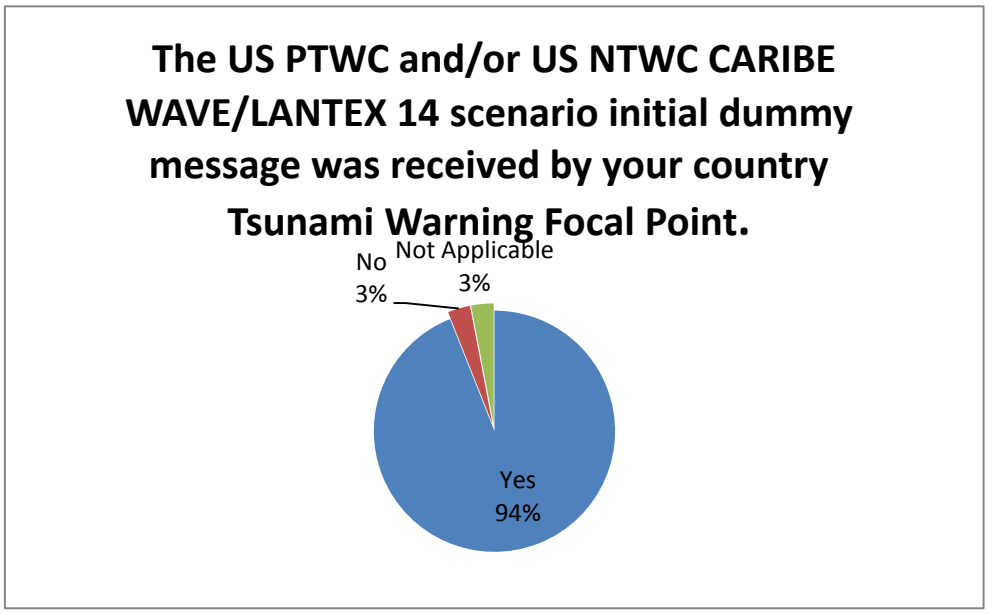

Figure I–7. Percentage of initial Dummy message received by the country TWFP

The countries who answered **YES** to the above question were: Anguilla, Antigua and Barbuda, Aruba, Barbados, Belize, Bermuda, Brazil. British Virgin Islands, Cayman Islands, Colombia, Dominica, Costa Rica, Domincan Republic, French West Indies, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Monserrat, Nicaragua, Saint Lucia, Saint Vincent and The Grenadines, Sint Maarten, Saint Kitts and Nevis, Suriname, Bahamas, US Virgin Islands, and Venezuela.

The countries who answered **NO** to the above question were: Puerto Rico.

The countries who answered **NOT APPLICABLE** to the above question were: Turks and Caicos.

The comments received from the participant Tsunami National Contacts (TNC) were:

- Honduras: Fueron recibidos en tiempo y forma los 14 avisos.
- Bermuda: Yes and received in a timely manner.
- Turks and Caicos: Messages were received via email and fax only. The TWFP in the TCI is 911 and does not have access to equipment such as EMWIN.
- Saint Lucia: Focal Point called Contact Point based on the dummy message.
- Puerto Rico: National Tsunami Warning Center did not have the correct information.

Question 8

What time was the US PTWC and/or US NTWC CARIBE WAVE/LANTEX 14 initial dummy message received by your TWFP? Please indicate the time from each TWC. Please note time using 24 hour clock and UTC, e.g., 14:35 UTC - US PTWC - US NTWC

Answer Options	Response Count
	33
answered question	33
skipped question	3

The comments received from the participant Tsunami National Contacts (TNC) were:

- Cayman Islands: US PTWC - 1004 UTC (5:04 a.m.).
- Suriname: from PTWC at 10:06 UTC and 14:07 UTC.
- Guyana: 10:08 UTC.
- Montserrat: 10:06 UTC 14:02 UTC.
- US Virgin Islands:10:06 UTC.
- Grenada:10:06 UTC.
- Honduras: El primer mensaje fue recibido a la 10:30 am y uno cada hora de los 13 restantes.
- Bermuda: 10:04 UTC - US PTWC.
- Sint Marteen: 6:05 AST.
- Saint Vincent and the Grenadines: 1006.
- Brazil: 14:06 UTC.
- Haiti: US PTWC 10:05 UTC.
- Bahamas: US PTWC - 10:05 UTC PORTUGAL 14:02 UTC GULF.
- Belize: 1402UTC.
- British Virgin Islands: US PTWC 06:06 Nothing was received by US NTWC.
- Venezuela: PTWC 10:06 UTC NTWC 10:06 UTC.
- Guatemala: 14:02 hora utc 08:02 hora local.
- Turks and Caicos: Received at 5:05am (09:05UTC).
- Dominica: 1005 UTC.
- Nicaragua: US PTWC 14:02 UTC (RECIBIDO EN INETER).

- Saint Kitts and Nevis: 08:20.
- Dominican Republic: US-PTWC 10:07UTC (6:07, Hora local). Received by Fax, E-Mail and AISR-AILA-JFPG.
- Anguilla: 10:05 UTC.
- Colombia: US PTWC: 15:05 US NTWC: 15:06.
- Antigua and Barbuda: US PTWC 1006 UTC, 1103, 1204,1300,1400 UTC.
- Mexico: MESSAGE US PTWC NTWC NTWC SPANISH 1 14:02 14:05 2 15:02 14:29 14:30 3 16:02 15:03 15:04 4 17:02 16:00 16:01 5 18:02 17:01 17:02 6 19:02 18:00 18:01 7 20:02 19:01 19:02 8 21:02 20:00 20:01 9 22:02 21:00 21:00 10 23:02 22:00 22:01 11 23:03 23:03.
- French West Indies: US PTWC at 10:06 UTC.
- Saint Lucia: 06:07.
- Puerto Rico: Not Received National Tsunami Warning Center did not have the correct information.
- Costa Rica: 10:04UTC.
- Barbados: 10:12 UTC.
- Jamaica: 9:02 10:02 11:02 12:02 13:02 14:02 15:02 16:02 17:02 18:02.
- Aruba: US PTWC 10:04 UTC.

Question 9

Were there any problems with the receipt of US PTWC and/or US NTWC Exercise CARIBE WAVE/LANTEX 14 initial dummy message(s)?

Answer Options	Response Percent	Response Count
Yes	19.4%	6
No	77.4%	24
Not Applicable	3.2%	1
Comments:		10
	answered question	**31**
	skipped question	**5**

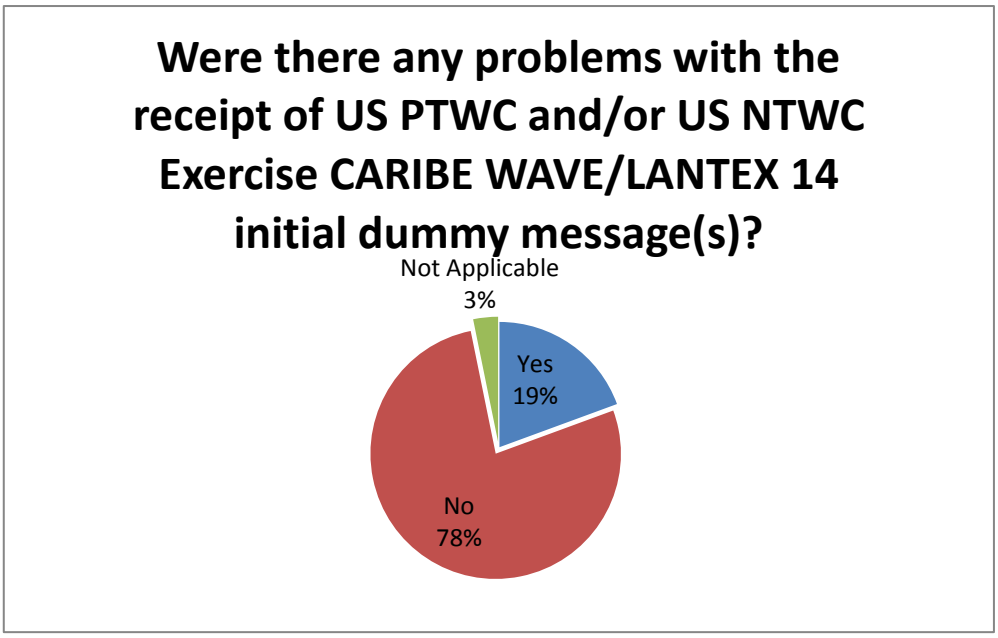

Figure I–8. Percentage of problems found in receiving the initial Dummy message(s)

The countries who answered **YES** to the above question were: Barbados, Brazil, Dominican Republic, Guyana, Puerto Rico, and Suriname.

The countries who answered **NO** to the above question were: Anguilla, Antigua and Barbuda, Barbados, Belize, Bermuda, British Virgin Islands, Cayman Islands, Colombia, Dominica, French West Indies, Grenada, Guatemala, Haiti, Honduras, Jamaica, Mexico, Monserrat, Nicaragua, Saint Vincent and The Grenadines, Sint Maarten, The Bahamas, Turks and Caicos, US Virgin Islands, and Venezuela.

The countries who answered **NOT APPLICABLE** to the above question were: Saint Lucia.

The comments received from the participant Tsunami National Contacts (TNC) were:

- Suriname: Only email, no fax. A phone call was receive but it gave a fax tone suggesting that PTWC tried to send a fax. Upon verification the Tel is listed also as the Fax number, the correct fax number is 011-597-474320.

- Guyana: Fax was not working, did not receive on GTS, although GTS is available.

- Honduras: Quizás se debe de buscar un día en que tengamos el tiempo adecuado para el ejercicio.

- Brazil: Nothing over GTS.

- Turks and Caicos: There were no problems with the receipt of the messages. However, the debriefing after the exercise revealed that before the TWFP/TNC disseminates messages to the public, messages need to be tailored to the TCI context. The entire message as it comes from the PTWC should not be disseminated to the public, but instead a summary should be provided as it can be to technical and lengthy to read for the general public.

- Nicaragua: SE-SINAPRED, Defensa Civil, MINSA, MINED, EPN, no recibieron los boletines por medio de PTWC.

- Saint Kitts and Nevis: Only 2 messages were received by the TWFP are were via fax.

- Dominican Republic: Only received the first newsletter by EE.UU. PTWC.

- Puerto Rico: National Tsunami Warning Center did not have the correct information.

- Barbados: Initial message received at 10:12UTC via email at TWFP the message was received via GTS at 10:16UTC. We noted a 4 minute delay via GTS as opposed to email.

Question 10

If the national public-safety, decision-making and dissemination point is different to the country/national TWFP, did you receive the information of the national public-safety, decision-making and dissemination point?

Answer Options	Response Percent	Response Count
Yes	40.0%	12
No	13.3%	4
Not Applicable	46.7%	14
Comments:		8
answered question		**30**
skipped question		**6**

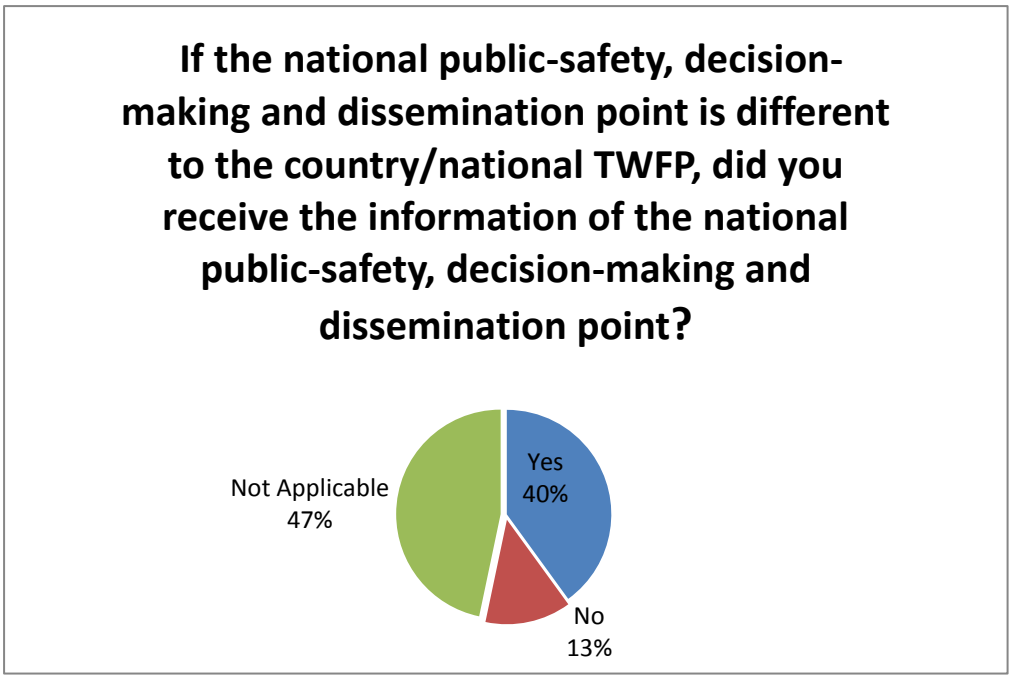

Figure I–9. Dissemination point of the information

The countries who answered **YES** to the above question were: Anguilla, Belize, British Virgin Islands, Dominican Republic, French West Indies, Guatemala, Honduras, Jamaica, Nicaragua, Saint Lucia, The Bahamas, and Venezuela.

The countries who answered **NO** to the above question were: Mexico, Puerto Rico, Suriname, and US Virgin Islands.

The countries who answered **NOT APPLICABLE** to the above question were: Aruba, Barbados, Bermuda, Brazil, Cayman Islands, Colombia, Dominica, Costa Rica, Haiti, Montserrat, Saint Vincent and The Grenadines, Sint Maarten, Saint Kitts and Nevis, and Turks and Caicos.

The comments received from the participant Tsunami National Contacts (TNC) were:

- Honduras: Se realizó la simulación de envío de la información.
- Bahamas: The decision makers are the Bahamas National Emergency Management Agency (NEMA).
- Turks and Caicos: The DDME is responsible for ensuring nation public safety, decision making and dissemination of information. Information is disseminated via the DDME's Public Information and Education Officer through the Government Press Office.
- Nicaragua: Aunque se recibió en tiempo y forma los boletines hacia las instituciones de enlace hubieron problemas (banda ancha e internet) desde las instituciones presente el code hacia sus delegaciones territoriales en el Caribe.
- Dominican Republic: ONAMET sending newsletters to their Emergency Operations Center, and they to the public especially to the province of Puerto Plata where a drill was conducted in a public school.
- Antigua and Barbuda: TNC is different to TWFP. We are TWFP.
- Saint Lucia: I am responsible to send it out.
- Jamaica: For the purpose of our exercise, all parties were in a central location, so all received the message.

Question 11

Did your TWFP/TNC sign up to receive via email the tsunami messages from the US PTWC/NTWC.

Answer Options	Response Percent	Response Count
Yes	93.8%	30
No	6.3%	2
Don't Know	0.0%	0
Comments:		4
answered question		**32**
skipped question		**4**

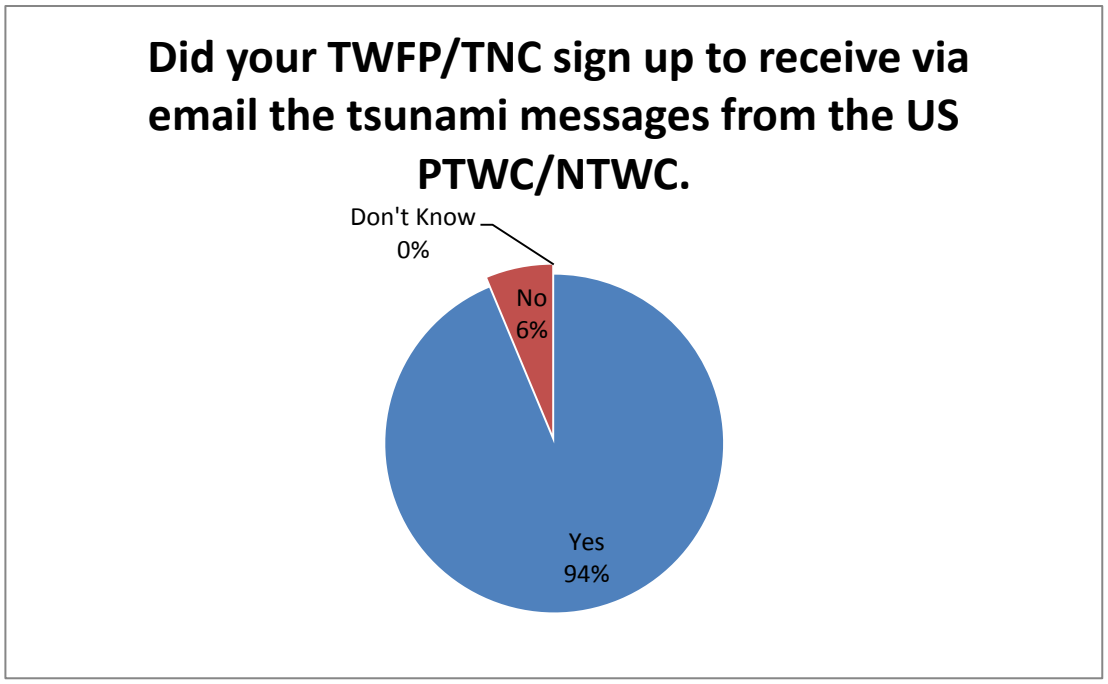

Figure I–10. Percentage of TWFP/TNC that received tsunami messages via email

The countries who answered **YES** to the above question were: Anguilla, Antigua and Barbuda, Aruba, Barbados, Belize, Bermuda, Brazil, British Virgin Islands, Cayman Islands, Colombia, Dominica, Costa Rica, Dominican Republic, French West Indies, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Montserrat, Nicaragua, Saint Vincent and The Grenadines, Sint Maarten, Saint Kitts and Nevis, Suriname, The Bahamas, Turks and Caicos, US Virgin Islands, and Venezuela.

The countries who answered **NO** to the above question were: Puerto Rico and Saint Lucia.

The countries who answered **NOT APPLICABLE** to the above question were: N/A

The comments received from the participant Tsunami National Contacts (TNC) were:

- Honduras: martincito1968@yahoo.com
- Nicaragua: Si se registraron pero solamente el punto focal recibió los mensajes. Los usuarios de la lista egcw2014@gf.ineter.gob.ni , no recibieron los mensajes del PTWC.
- Saint Kitts and Nevis: TNC
- Puerto Rico: National Tsunami Warning Center did not have the correct information.

Question 12 Did your TWFP/TNC receive the email messages at the times specified in the Exercise Manual.		
Answer Options	**Response Percent**	**Response Count**
Yes	77.4%	24
No	19.4%	6
Not Applicable	3.2%	1
Comments:		8
	answered question	**31**
	skipped question	**5**

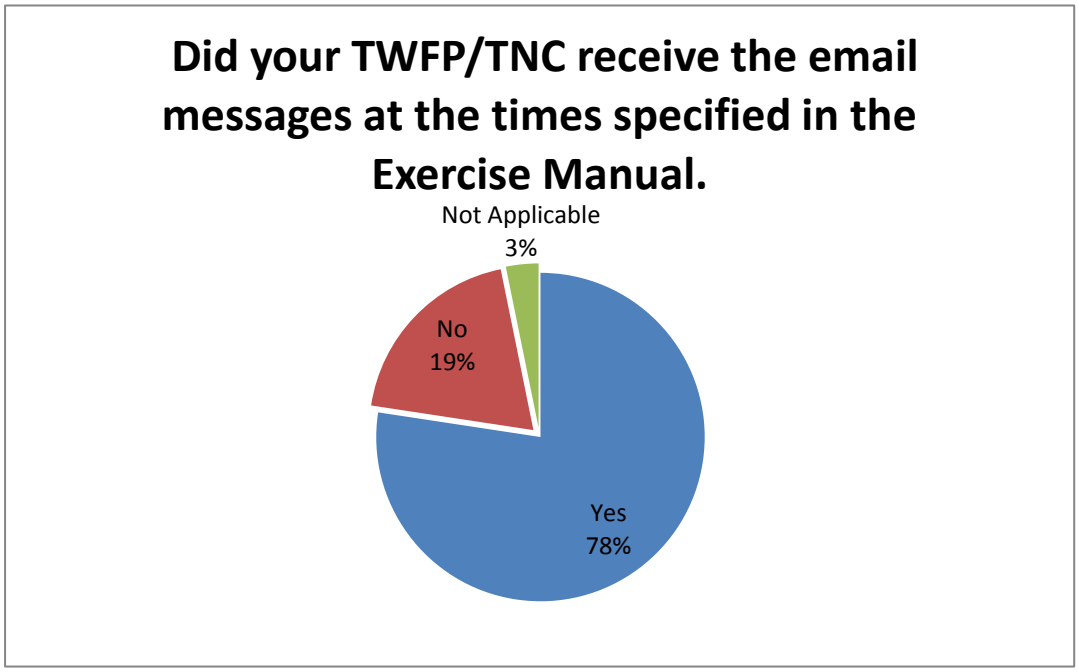

Figure I–11. Email messages received at the times specified at the Exercise Manual by the TWFP/TNC

The countries who answered **YES** to the above question were: Anguilla, Antigua and Barbuda, Aruba, Belize, Bermuda, Brazil, Cayman Islands, Colombia, Costa Rica, Dominican Republic, French West Indies, Guatemala, Guyana, Haiti, Honduras, Jamaica, Montserrat, Nicaragua, Saint Vincent and The Grenadines, Saint Kitts and Nevis, Suriname, The Bahamas, Turks and Caicos, and US Virgin Islands.

The countries who answered **NO** to the above question were: Barbados, British Virgin Islands, Dominica, Mexico, Sint Maarten, and Venezuela.

The countries who answered **NOT APPLICABLE** to the above question were: Puerto Rico.

The comments received from the participant Tsunami National Contacts (TNC) were:

- Honduras: Trabajamos con el envío de información vía internet y revisamos el manual y se aplicaron los tiempos.

- Bermuda: Our Marine Operations Centre (MAROPS) signed up to the exercise emails also, as they are another 24/7 agency on Island, with some similar responsibilities to Bermuda Weather Service (BWS) – they are in fact a sort of back-up communication hub for us. However, not all the exercise emails were received, some going into a spam folder.

- Saint Marteen: Something went wrong during the sign-up process, so no messages were received at all, besides the initial dummy message.

- Venezuela: 01 minute later.

- Dominica: Not precisely.

- Mexico: A few minutes delay.

- Saint Lucia: TWFP got it TNC did not get it.

- Puerto Rico: National Tsunami Warning Center did not have the correct information.

Question 13

Is the national public-safety, decision-making and dissemination point different to the national tsunami warning focal point?

Answer Options	Response Percent	Response Count
Yes	62.5%	20
No	25.0%	8
Not Applicable	12.5%	4
Comments:		5
answered question		**32**
skipped question		**4**

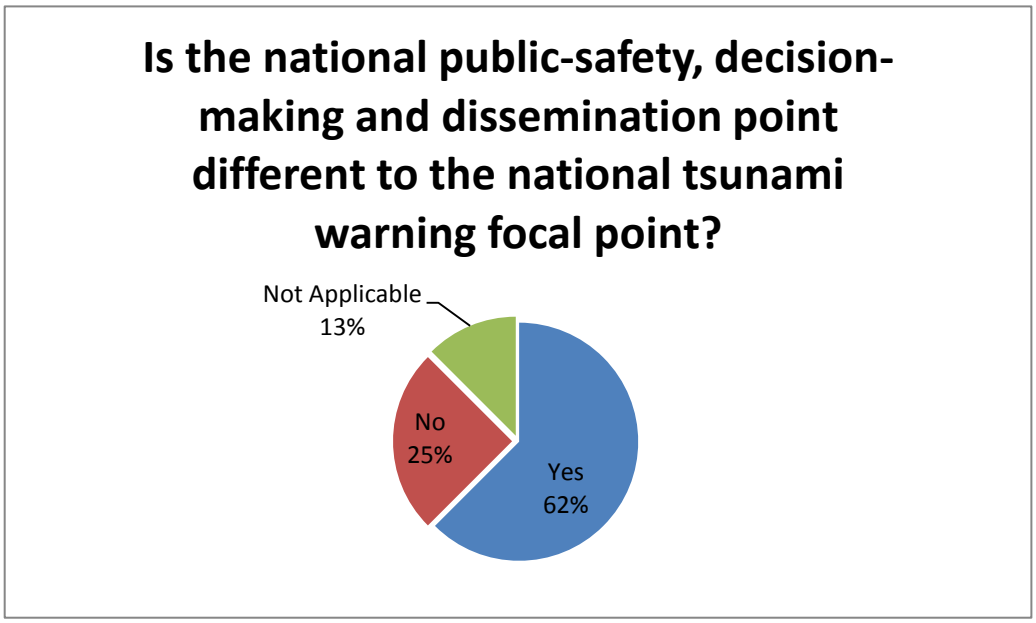

Figure I–12. Dissemination point different from the National TWFP

The countries who answered **YES** to the above question were: Anguilla, Antigua and Barbuda, Barbados, Belize, Bermuda, British Virgin Islands, Colombia, Dominican Republic, French West Indies, Grenada, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Saint Lucia, Saint Kitts and Nevis, The Bahamas, Turks and Caicos, and Venezuela.

The countries who answered **NO** to the above question were: Cayman Islands, Dominica, Costa Rica, Guatemala, Saint Vincent and The Grenadines, Sint Maarten, Suriname, and US Virgin Islands.

The countries who answered **NOT APPLICABLE** to the above question were: Aruba, Brazil, Montserrat, and Puerto Rico.

The comments received from the participant Tsunami National Contacts (TNC) were:

- Honduras: COPECO es la única institución pública autorizada por ley en difundir la alerta por tsunamis.

- Bermuda: Bermuda Weather Service, as the TWFP, issues the watches & warnings. It is the responsibility of the Emergency Measure Organization (EMO) & police to

direct the public. This chain of command is what is trying to be established by this exercise.

- Turks and Caicos: NTWFP is 911 TWC is the DDME which is responsible for the above mentioned.

- French West Indies: We have a zonal public-safety, decision-making and dissemination point (EMIZA) for all the French territories, and a local public-safety, decision-making and dissemination point (SIDPC) for each French island (Martinique, Guadeloupe, St Martin & St Barth) or territory (French Guyana).

- Jamaica: The National Disaster Office (ODPEM) is the coordinating body while the National Meteorological Service is the Tsunami Focal Point.

Question 14

Information provided in the relevant international warning centre messages was understood by the Tsunami Warning Focal Point.

Answer Options	Response Percent	Response Count
Yes	86.2%	25
No	0.0%	0
Not Applicable	13.8%	4
Comments:		3
	answered question	**29**
	skipped question	**7**

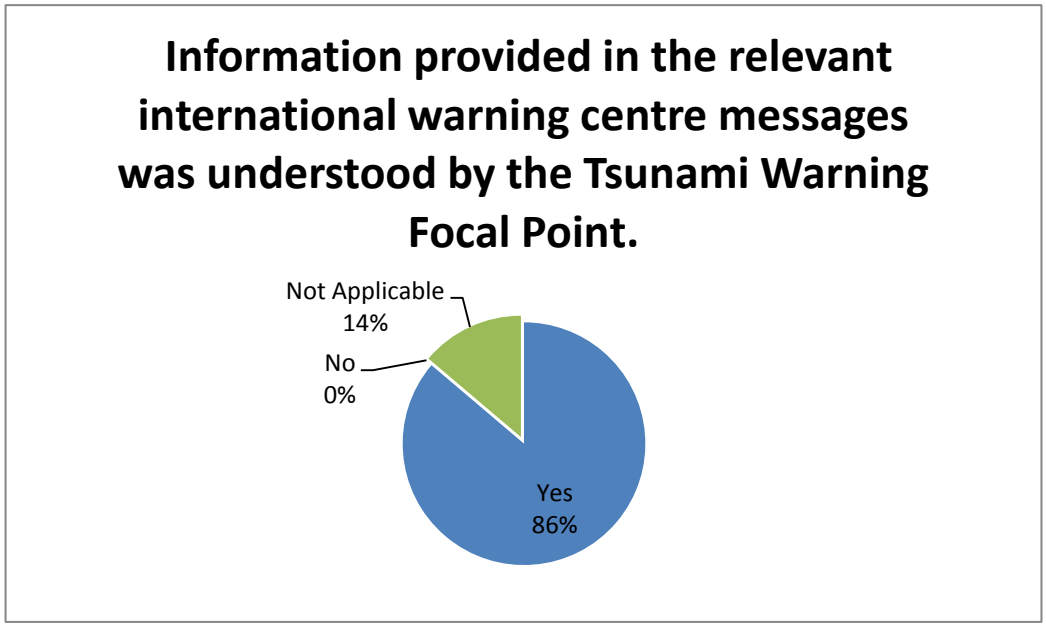

Figure I–13. Information provided understood by the TWFP

The countries who answered **YES** to the above question were: Antigua and Barbuda, Aruba, Barbados, Belize, Bermuda, British Virgin Islands, Cayman Islands, Colombia, Dominica, Costa Rica, Dominican Republic, French West Indies, Guatemala, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Puerto Rico, Saint Vincent and The Grenadines, Saint Kitts and Nevis, The Bahamas, Turks and Caicos, US Virgin Islands, and Venezuela.

The countries who answered **NO** to the above question were: N/A

The countries who answered **NOT APPLICABLE** to the above question were: Brazil, Montserrat, Saint Lucia, and Sint Maarten.

The comments received from the participant Tsunami National Contacts (TNC) were:

- Honduras: nos mantuvimos en línea con todos los países participantes
- French West Indies: Yes, except the WECA41 message (14:05 UTC) for Gulf of Mexico scenario was assimilated to message for the Portugal scenario and not disseminated.
- Puerto Rico: We use the messages from the CARIBE WAVE/ LANTEX 14 Handbook.

Question 15

The information provided in the relevant international warning centre messages assisted with decision making, e.g., warning levels, earthquake parameters, estimated arrival times, forecast wave heights, etc.

Answer Options	Response Percent	Response Count
Yes	80.0%	24
No	3.3%	1
Not Applicable	16.7%	5
Comments:		5
	answered question	**30**
	skipped question	**6**

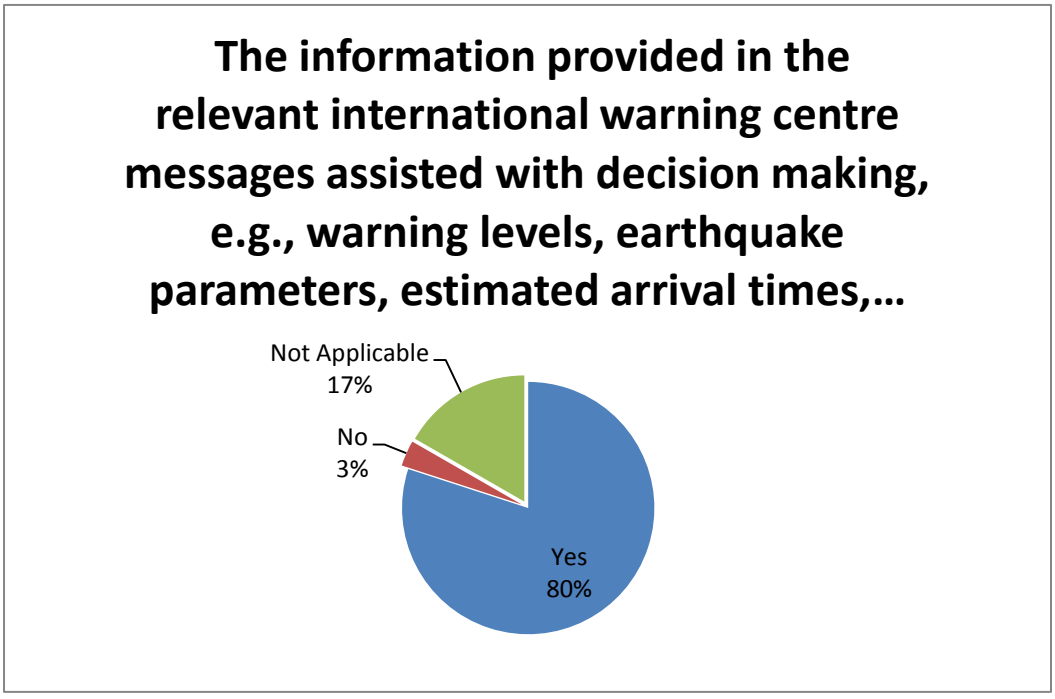

Figure I–14. Percentage of the information provided in the International warning centres assisted with decision making

The countries who answered **YES** to the above question were: Anguilla, Antigua and Barbuda, Aruba, Barbados, Bermuda, British Virgin Islands, Cayman Islands, Colombia, Dominica, Costa Rica, Dominican Republic, French West Indies, Guatemala, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Puerto Rico, Saint Vincent and The Grenadines, The Bahamas, Turks and Caicos, US Virgin Islands, and Venezuela.

The countries who answered **NO** to the above question were: Saint Lucia.

The countries who answered **NOT APPLICABLE** to the above question were: Belize, Brazil, Montserrat, Sint Maarten, and Saint Kitts and Nevis.

The comments received from the participant Tsunami National Contacts (TNC) were:

- Honduras: Muy buena información.
- Bermuda: To some extent - arrival time was useful, but it would have been nice to have had at least an estimate of the wave amplitude for Bermuda. One of our meteorologists (with some oceanography experience) used a rule of thumb technique to estimate of a 5-7ft wave which was near perfect (in reality 6ft for Bermuda).
- Puerto Rico: Focus was on the communications process.
- Puerto Rico: We use the messages from the Participant Manual.
- Jamaica: Greater details could however be carried in each ensuing message.

Question 16 The information provided was fully utilised by TWFP.		
Answer Options	**Response Percent**	**Response Count**
Yes	82.8%	24
No	3.4%	1
Not Applicable	13.8%	4
Comments:		3
	answered question	**29**
	skipped question	**7**

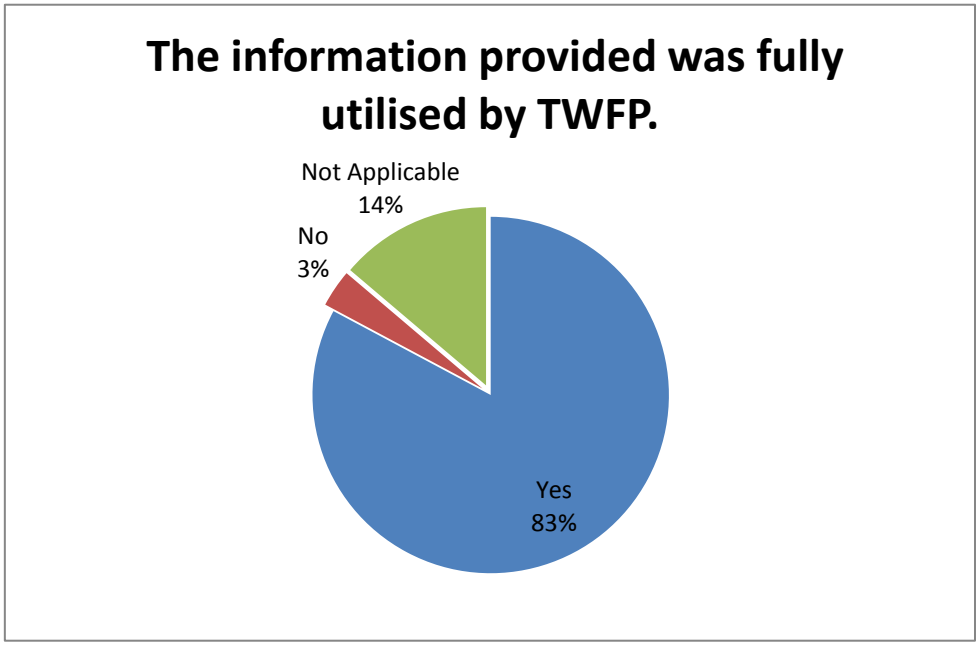

Figure I–15. Percentage of information used by TWFP

The countries who answered **YES** to the above question were: Antigua and Barbuda, Aruba, Barbados, Bermuda, Cayman Islands, Colombia, Dominica, Costa Rica, Dominican Republic, French West Indies, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Puerto Rico, Saint Lucia, Saint Vincent and The Grenadines, The Bahamas, Turks and Caicos, US Virgin Islands, and Venezuela.

The countries who answered **NO** to the above question were: Belize.

The countries who answered **NOT APPLICABLE** to the above question were: Brazil, Montserrat, Sint Maarten, Saint Kitts and Nevis.

The comments received from the participant Tsunami National Contacts (TNC) were:

- Saint Kitts and Nevis: Focus was on the communications process
- French West Indies: However, only messages sent by usual way (i.e. not by email) were transmitted by the TWFP.
- Puerto Rico: We use the messages from the CARIBE WAVE/ LANTEX 14 Handbook.

Question 17

Existing in-country hazard information/local data was utilised.

Answer Options	Response Percent	Response Count
Yes	64.5%	20
No	9.7%	3
Not Applicable	25.8%	8
Comments:		7
answered question		**31**
skipped question		**5**

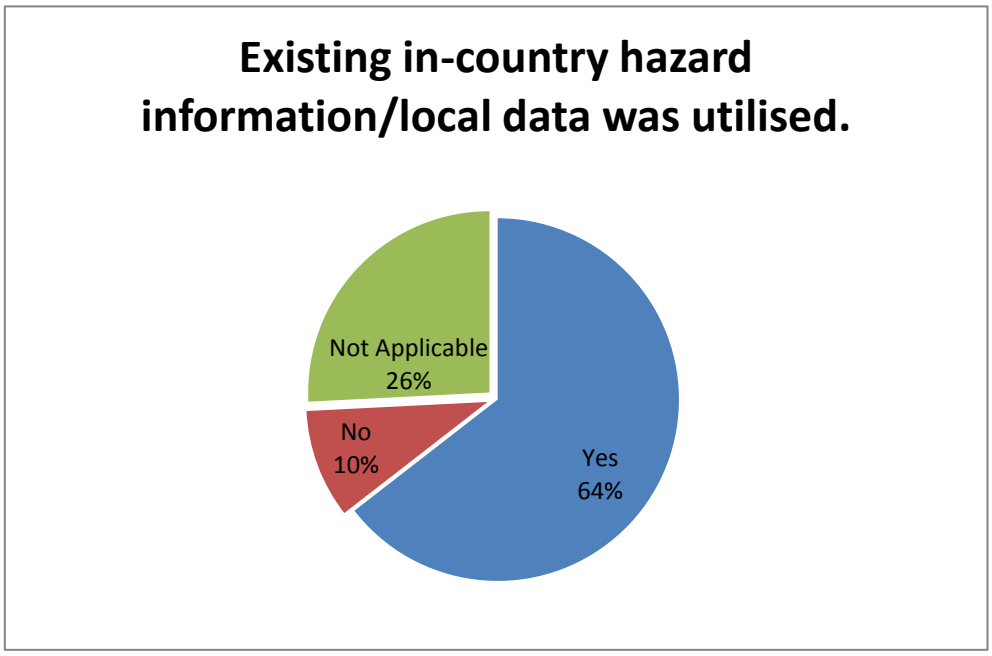

Figure I–16. Percentage of in-house existing hazard information used

The countries who answered **YES** to the above question were: Anguilla, Antigua and Barbuda, Bermuda, British Virgin Islands, Colombia, Costa Rica, Dominican Republic, French West Indies, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Puerto Rico, Saint Lucia, Saint Vincent and The Grenadines, The Bahamas, Turks and Caicos, US Virgin Islands, and Venezuela.

The countries who answered **NO** to the above question were: Belize, Dominica, and Suriname.

The countries who answered **NOT APPLICABLE** to the above question were: Aruba, Barbados, Brazil, Cayman Islands, Guatemala, Montserrat, Sint Maarten, and Saint Kitts and Nevis.

The comments received from the participant Tsunami National Contacts (TNC) were:

- Cayman Islands: No existing in-country hazard information/local data was utilized.
- Honduras: Basados en estudios existentes.

- Bermuda: Some headway has been made in this area, but there is still plenty of scope for improvement in order to work out evacuation zones/safe heights etc...

- Guatemala: Ejercicio solo de escritorio.

- Turks and Caicos: Evacuation maps based on the ejected direction of the tsunami, vulnerable areas (i.e. near to coastlines, creeks etc.), along with the use of flood prone maps and elevation maps.

- Dominica: Not all data was utilized.

- Dominican Republic: Gage data specifically for issuing tsunami warning. Hazard bulletins issued, despite not being in the protocol, but seeing that is applicable for manual upgrade procedure.

Question 18 Additional in-country local/regional expert advice was utilized.		
Answer Options	**Response Percent**	**Response Count**
Yes	54.8%	17
No	25.8%	8
Not Applicable	19.4%	6
Comments:		9
	answered question	**31**
	skipped question	**5**

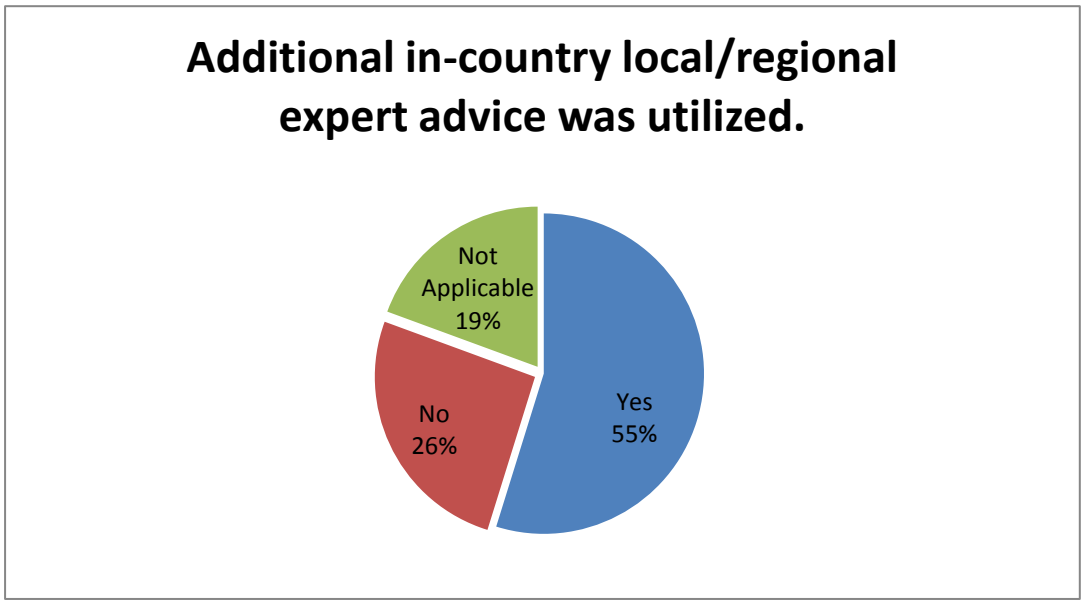

Figure I–17. Percentage of additional in-country local/regional expert advice used

The countries who answered **YES** to the above question were: Anguilla, Antigua and Barbuda, Barbados, Bermuda, British Virgin Islands, Colombia, Costa Rica, French West Indies, Haiti, Mexico, Nicaragua, Puerto Rico, Saint Lucia, The Bahamas, Turks and Caicos, US Virgin Islands, and Venezuela.

The countries who answered **NO** to the above question were: Belize, Dominica, Dominican Republic, Guatemala, Honduras, Jamaica, Saint Vincent and The Grenadines, and Suriname.

The countries who answered **NOT APPLICABLE** to the above question were: Aruba, Brazil, Cayman Islands, Montserrat, Sint Maarten, and Saint Kitts and Nevis.

The comments received from the participant Tsunami National Contacts (TNC) were:

- Cayman Islands: No in-country local/regional expert exists.
- US Virgin Islands: Roy Watlngton, Retired UVI.
- Honduras: Tratamos de ser autónomos.

- Bermuda: Through Dr Mark Guishard (BIOS) who has had some interaction with overseas Tsunami modellers etc... I have also attended two Wave Workshops 2007 and 2011, where I have had interaction with some experts.

- Turks and Caicos: Three stakeholder meetings were held during the planning stage leading up to the event to gain guidance in order to effectively carry out the exercise. Surveys and Mapping Department of TCIG was utilized to produce evacuation route maps.

- Dominica: Exercise kept to a minimum.

- Nicaragua: Se contó con el apoyo de los organizadores del evento, del equipo de trabajo especial, nacional para tal fin que diseño el plan de preparación nacional para este ejercicio, así como también de la participación de los centros internacionales de alerta de tsunami.

- French West Indies: OVSM expertise was utilized in Martinique.

- Jamaica: The nature of our exercise focus did not warrant this.

Question 19

The information contained in the enhanced products is understandable.

Answer Options	Response Percent	Response Count
Yes	82.8%	24
No	0.0%	0
Not Applicable	17.2%	5
Comments:		1
	answered question	**29**
	skipped question	**7**

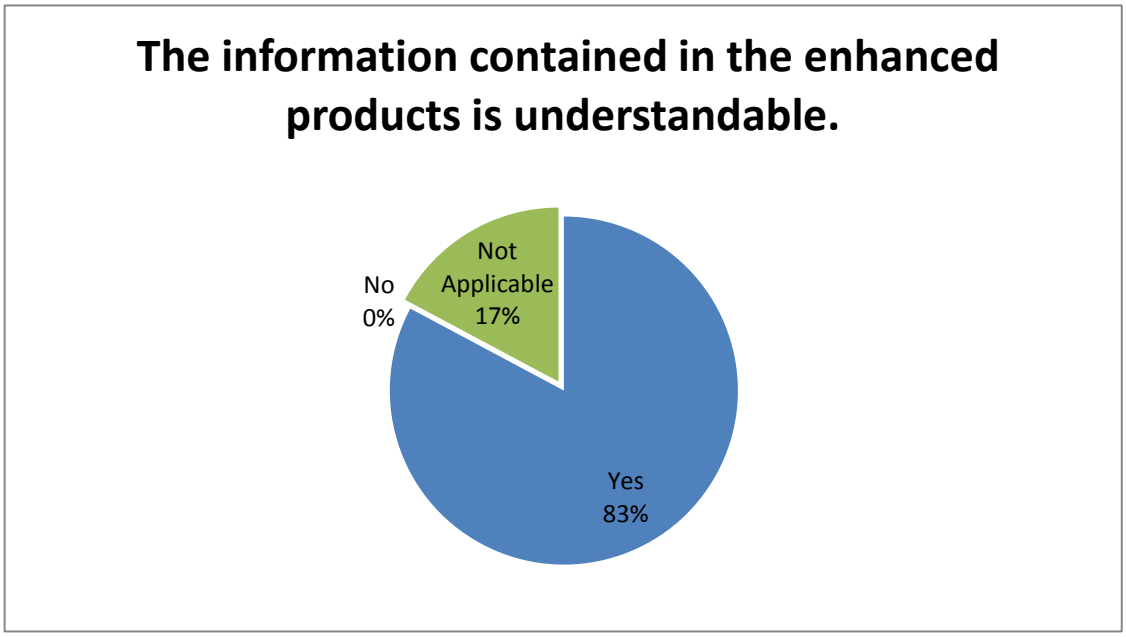

Figure I–18. Comprehensibility of the information contained in the Enhanced products

The countries who answered **YES** to the above question were: Anguilla, Antigua and Barbuda, Aruba, Barbados, Belize, Bermuda, Cayman Islands, Colombia, Dominica, Costa Rica, French West Indies, Guatemala, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Puerto Rico, Saint Vincent and The Grenadines, Saint Kitts and Nevis, The Bahamas, Turks and Caicos, US Virgin Islands, and Venezuela.

The countries who answered **NO** to the above question were: N/A

The countries who answered **NOT APPLICABLE** to the above question were: Brazil, British Virgin Islands, Dominican Republic, Saint Lucia, and Sint Maarten.

The comments received from the participant Tsunami National Contacts (TNC) were:

- Saint Kitts and Nevis: In general.

Question 20

The information contained in the enhanced products helps with your decision-making.

Answer Options	Response Percent	Response Count
Yes	76.7%	23
No	0.0%	0
Not Applicable	23.3%	7
Comments:		4
	answered question	**30**
	skipped question	**6**

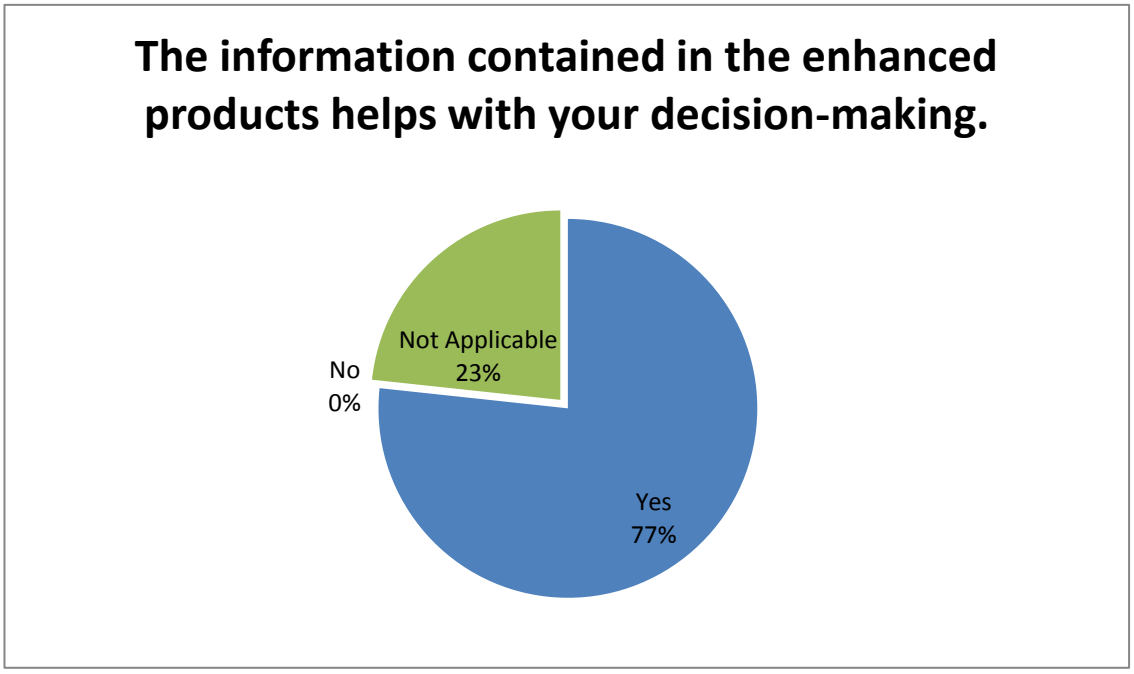

Figure I–19.Usefullness of the information
contained in the Enhanced products to help with decision-making

The countries who answered **YES** to the above question were: Anguilla, Antigua and Barbuda, Aruba, Belize, Bermuda, Cayman Islands, Colombia, Dominica, Costa Rica, French West Indies, Guatemala, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Puerto Rico, Saint Vincent and The Grenadines, Suriname, The Bahamas, Turks and Caicos, US Virgin Islands, and Venezuela.

The countries who answered **NO** to the above question were: N/A

The countries who answered **NOT APPLICABLE** to the above question were: Barbados, Brazil, British Virgin Islands, Dominican Republic, Saint Lucia, Sint Maarten, and Saint Kitts and Nevis.

The comments received from the participant Tsunami National Contacts (TNC) were:

- Bermuda: Especially forecast maximum wave heights.
- Turk and Caicos: It provided more information as it relates to TCI that the participants handbook.
- French West Indies: The enhanced products (especially wave height estimations) enable a better evaluation of the tsunami effects and TTT a better scheduling of the security response.
- Barbados: Not used in the exercise.

Question 21

Staging: Should forecast threat levels be included in the initial first product, knowing that forecasts are likely to change over the first hour as seismic data and sea level data are received and analyzed?

Answer Options	Response Percent	Response Count
Yes	71.4%	20
No	17.9%	5
Not Applicable	10.7%	3
Comments:		10
answered question		**28**
skipped question		**8**

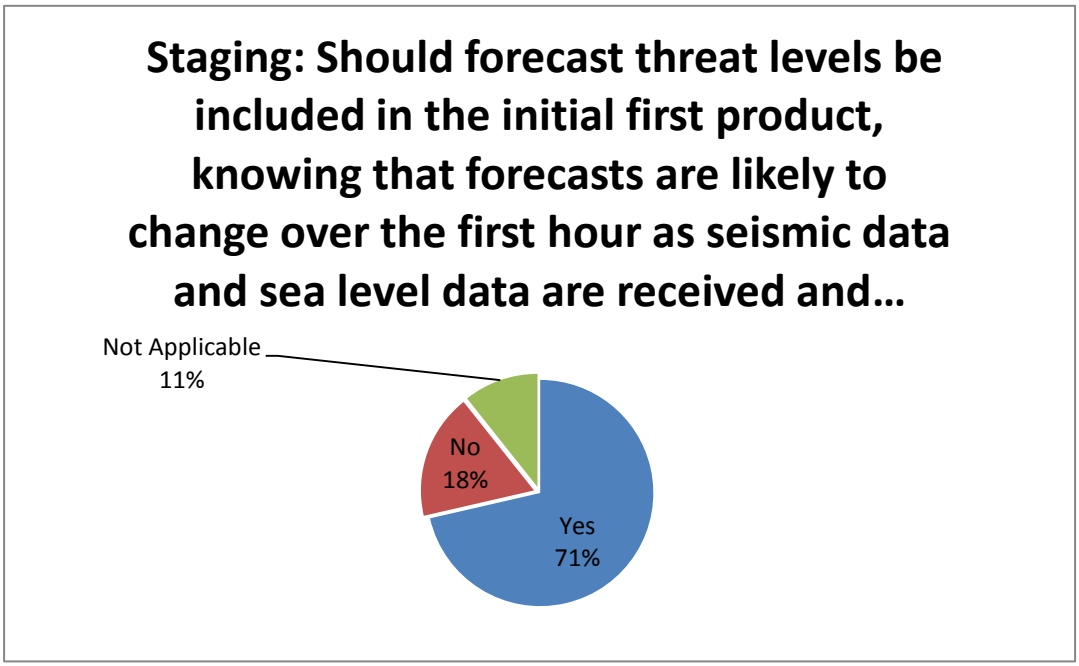

Figure I–20. Forecast threat level should be included or not in the initial first product

The countries who answered **YES** to the above question were: Anguilla, Aruba, Belize, Cayman Islands, Colombia, Dominica, Costa Rica, Dominican Republic, French West Indies, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Puerto Rico, Sint Maarten, The Bahamas, Turks and Caicos, US Virgin Islands, and Venezuela.

The countries who answered **NO** to the above question were: Antigua and Barbuda, Barbados, Bermuda, Guatemala, and Saint Vincent and The Grenadines.

The countries who answered **NOT APPLICABLE** to the above question were: Brazil, British Virgin Islands, and Saint Lucia.

The comments received from the participant Tsunami National Contacts (TNC) were:

- Caiman Islands: It would be good for countries to initiate their respective preparedness and response actions.
- US Virgin Islands: It is important to know as soon as possible what the evaluation of the TWC is, always prefer to err on the side of caution.
- Bermuda: Generally no, however, if a tsunami was generated in the Puerto Rico trench then our lead time would be very limited - just a few hours. In this situation some initial data may be better than none.
- Guatemala: Por qué somos la agencia de alerta, seria de uso interno.
- Dominica: It would give forecasters at the local level a baseline in which to start making some analysis.
- Saint Kitts and Nevis: If given, provide a reminder about possible changes.
- Colombia: En caso de alarma para la costa.
- Dominican Republic: We analyze data with network Gauges and DART buoys.
- Saint Lucia: Focal point to answer.
- Jamaica: This would prove useful in making timely decisions.

Question 22

Staging: Should forecast threat levels be given only for coasts within 6 hours of the estimated tsunami arrival time in initial products, knowing that initial forecasts will be based only upon the seismic parameters?

Answer Options	Response Percent	Response Count
Yes	62.1%	18
No	27.6%	8
Not Applicable	10.3%	3
Comments:		5
	answered question	**29**
	skipped question	**7**

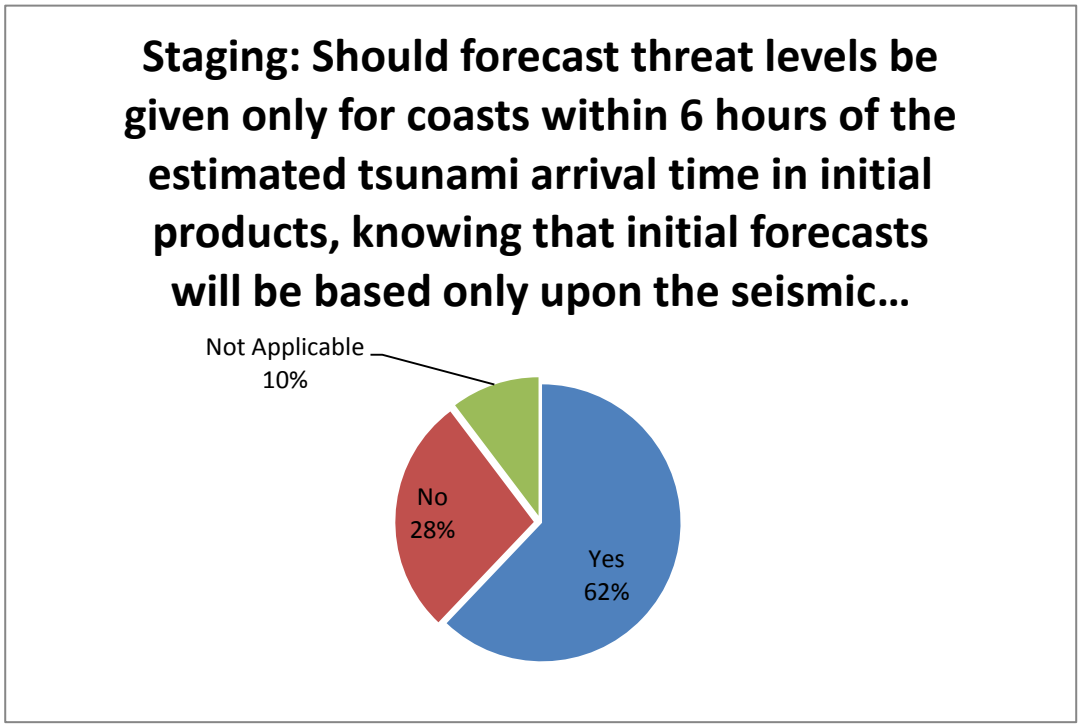

Figure I–21. Forecast threat levels should be only given for coast within 6 hours of the estimated tsunami arrival time in initial products.

The countries who answered **YES** to the above question were: Anguilla, Antigua and Barbuda, Aruba, Belize, Bermuda, Colombia, Dominica, Costa Rica, Honduras, Mexico, Nicaragua, Sint Maarten, Saint Kitts and Nevis, The Bahamas, Turks and Caicos, US Virgin Islands, and Venezuela.

The countries who answered **NO** to the above question were: Barbados, Cayman Islands, Dominican Republic, French West Indies, Guatemala, Haiti, Jamaica, Saint Vincent and The Grenadines.

The countries who answered **NOT APPLICABLE** to the above question were: Brazil and British Virgin Islands.

The comments received from the participant Tsunami National Contacts (TNC) were:

- Bermuda: As per 21. 2B.1 this would seem a sensible option.
- Guatemala: Por qué somos la agencia de alerta, seria de uso interno.
- Saint Kitts and Nevis: Undecided.
- Colombia: Para el caso de la cuenca del Caribe podrían ser menos de 6 horas para los productos iniciales.
- Saint Lucia: Focal point to answer.

Question 23:

Format: Does the primary text product contain the right information?

Answer Options	Response Percent	Response Count
Yes	81.5%	22
No	3.7%	1
Not Applicable	14.8%	4
Comments:		3
	answered question	**27**
	skipped question	**9**

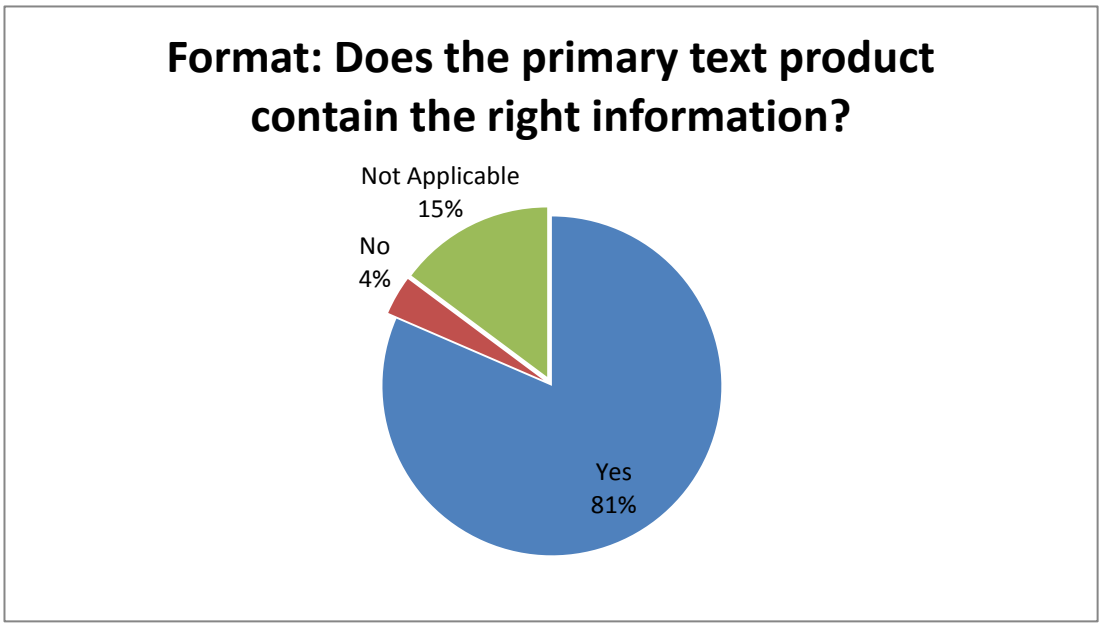

Figure I–22. Right information is contained in primary text products

The countries who answered **YES** to the above question were: Antigua and Barbuda, Aruba, Barbados, Belize, Bermuda, Cayman Islands, Colombia, Costa Rica, Dominican Republic, French West Indies, Guatemala, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Puerto Rico, Saint Vincent and The Grenadines, The Bahamas, Turks and Caicos, US Virgin Islands, and Venezuela.

The countries who answered **NO** to the above question were: Dominica.

The countries who answered **NOT APPLICABLE** to the above question were: Brazil and British Virgin Islands.

The comments received from the participant Tsunami National Contacts (TNC) were:

- Dominica: In cases of tsunami what is the right information given the dynamics of the wave.
- Colombia: La información es suficiente.
- Saint Lucia: Focal point to answer.

Question 24

Format: Does the proposed suite of products–primary text product, energy map, threat map, table of threat levels, table of arrival times–provide all the necessary information?

Answer Options	Response Percent	Response Count
Yes	75.0%	21
No	10.7%	3
Not Applicable	14.3%	4
Comments:		14
answered question		**28**
skipped question		**8**

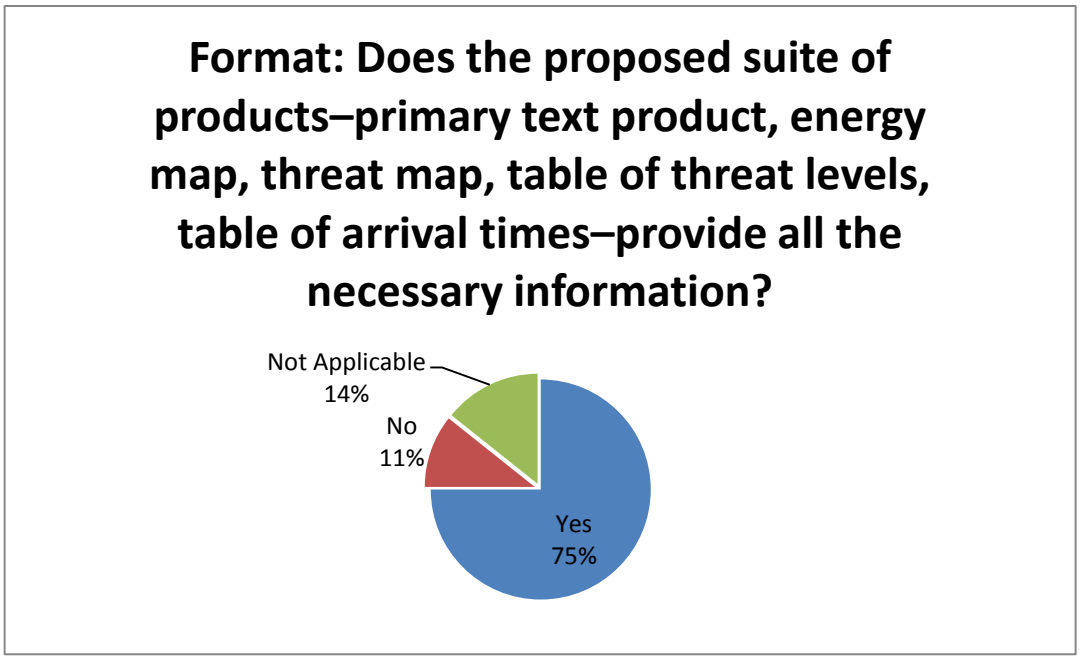

Figure I–23. The proposed suite of products provide all the necessary information

The countries who answered **YES** to the above question were: Anguilla, Antigua and Barbuda, Aruba, Barbados, Belize, Bermuda, Cayman Islands, Colombia, Costa Rica, French West Indies, Guatemala, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Puerto Rico, Saint Vincent and The Grenadines, The Bahamas, US Virgin Islands, and Venezuela.

The countries who answered **NO** to the above question were: Dominica, Dominican Republic, and Turks and Caicos.

The countries who answered **NOT APPLICABLE** to the above question were: Brazil and British Virgin Islands.

The comments received from the participant Tsunami National Contacts (TNC) were:

- US Virgin Islands: Google map is helpful but one requires internet and it might not be available and could overload the system and the first responders and DMO.

- Honduras: Los tenemos por colaboración de otros países del area y estudios de país.
- Bahamas: The information provided was thought to be adequate.
- Venezuela: Yes, but I completed whit local information.
- Turks and Caicos: Specific information to the TCI was limited. Particularly, as it relates to threat level. This is due to the fact that the TCI currently does not have tidal gauges around its shore. Table of arrival time were useful. The table considered Grand Turk and West Caicos. Thus, allowing got arrival time prediction for islands situated between Grand Turk and West Caicos
- Dominica: There may be areas that need refining.
- Nicaragua: A partir de la información recibida por el INETER del Centro De Alerta Tsunami en conjunto con las instituciones involucradas, permitió elaborar el plan de realización ejercicio de gabinete ante tsunami CARIBE WAVE-LANTEX 2014, el cual fue aprobado por las tres instancias rectoras del ejercicio: INETER, SE-SINAPRED, Defensa Civil.
- Saint Kitts and Nevis: Will need to review to decide.
- Colombia: La información aporta información necesaria pero debe ser analizada en su conjunto
- Antigua and Barbuda: Not all but quite useful
- French West Indies: Graphical products: the information on their time of issue after an earthquake is missing. Coastal forecast graphic: if dots were smaller, it would be clearer for small islands, which coasts are not impacted equally.
- Saint Lucia: Focal point to answer.
- Jamaica: This was so for the Portugal scenario, but lacking for the Mexico situation, which would have been of greater use to us.
- Aruba: When countries are listed, it would be helpful to list them in alphabetical order in order to find your country quicker.

Question 25

Content: Are there other information or products that should be included in the suite of products? Consider earthquake and tsunami information, and/or threat assessment products.

Answer Options	Response Percent	Response Count
Yes	26.9%	7
No	46.2%	12
Not Applicable	26.9%	7
Comments:		8
answered question		**26**
skipped question		**10**

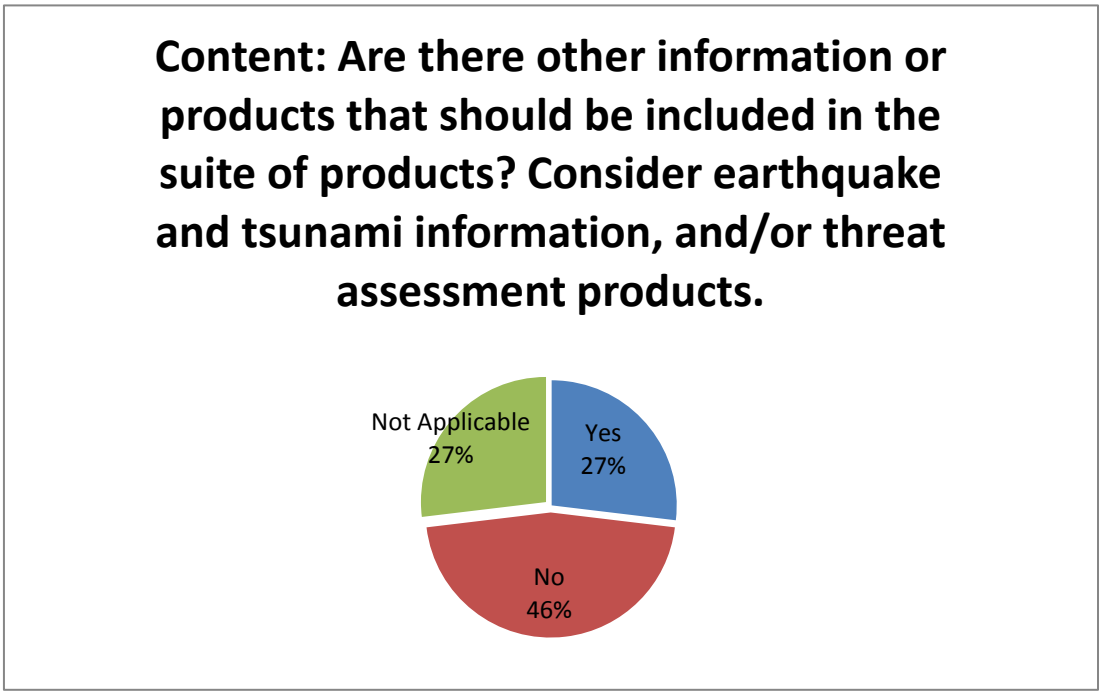

Figure I–24. Other information or products should be included in the suite of products

The countries who answered **YES** to the above question were: Colombia, Dominica, Costa Rica, Dominican Republic, Jamaica, Nicaragua, and Turks and Caicos.

The countries who answered **NO** to the above question were: Anguilla, Aruba, Barbados, Belize, Bermuda, Guatemala, Honduras, Mexico, Puerto Rico, The Bahamas, US Virgin Islands, and Venezuela.

The countries who answered **NOT APPLICABLE** to the above question were: Antigua and Barbuda, Brazil, British Virgin Islands, Haiti, Saint Lucia, Saint Vincent and The Grenadines, and Sint Maarten.

The comments received from the participant Tsunami National Contacts (TNC) were:

- Turks and Caicos: Threat level and map for TCI.
- Nicaragua: Otras informaciones generadas a parte de los boletines consistió en que las instituciones involucradas con sus delegaciones pudieran dar los avisos de alerta y poner en práctica los niveles de alerta y los planes de repuesta institucional (PRIS).
- Colombia: Podría ser útil información sísmica, por ejemplo del tipo ShakeMap.
- Dominican Republic: PTWC to give the new product to Dominican Republic.
- French West Indies: Confirmed tide gauge observations could be provided in the graphical products as it takes a long time to locate the tide gauges only from their coordinates.
- Saint Lucia: Focal point to answer.
- Costa Rica: Information of past tsunamis generated in the same source region, date and Mw.
- Jamaica: Simulation capability, and wider span to include more Caribbean scenario planning.

Question 26 Content: Are the proposed forecast zones appropriate?		
Answer Options	**Response Percent**	**Response Count**
Yes	72.4%	21
No	3.4%	1
Not Applicable	24.1%	7
Comments:		3
answered question		**29**
skipped question		**7**

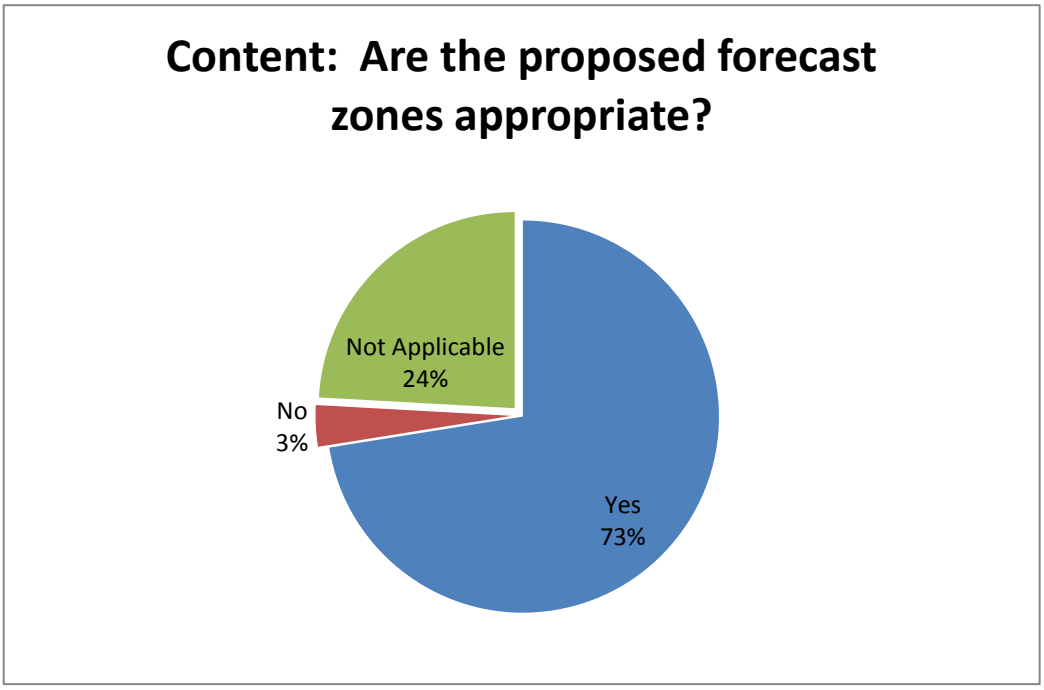

Figure I–25. Appropriated forecast zones

The countries who answered **YES** to the above question were: Anguilla, Aruba, Barbados, Belize, Bermuda, Cayman Islands, Colombia, Dominica, Costa Rica, French West Indies, Guatemala, Honduras, Mexico, Nicaragua, Puerto Rico, Saint Vincent and The Grenadines, Saint Kitts and Nevis, The Bahamas, Turks and Caicos, US Virgin Islands, and Venezuela.

The countries who answered **NO** to the above question were: Jamaica.

The countries who answered **NOT APPLICABLE** to the above question were: Antigua and Barbuda, Brazil, British Virgin Islands, Dominican Republic, Haiti, Saint Lucia, and Sint Maarten.

The comments received from the participant Tsunami National Contacts (TNC) were:

- Nicaragua: Las instituciones que activaron a sus unidades en el Caribe norte y sur, fueron en el caso de Ministerio de Salud se activaron 12 instalaciones de salud (6 centros en la RACN) y (4 centros en la RACS), en el caso del Ministerio de Educación (4 centros en la RACN) y (5 centros en la RACS) y en el caso del EPN se involucró en el RACS los puertos marítimos del BLUFF y el rama y en el caso de la RACN el puerto de Bilwi. Surge la necesidad de desarrollar un escenario de fuente cercana a las costas de América Central.

- Saint Lucia: Focal point to answer.

- Jamaica: Wider Caribbean reach.

Question 27

Content: Are the proposed forecast levels: 0–0.3m, >= 0.3–1m, >= 1–3m, 3-10m and >10m adequate?

Answer Options	Response Percent	Response Count
Yes	82.1%	23
No	3.6%	1
Not Applicable	14.3%	4
Comments:		4
	answered question	**28**
	skipped question	**8**

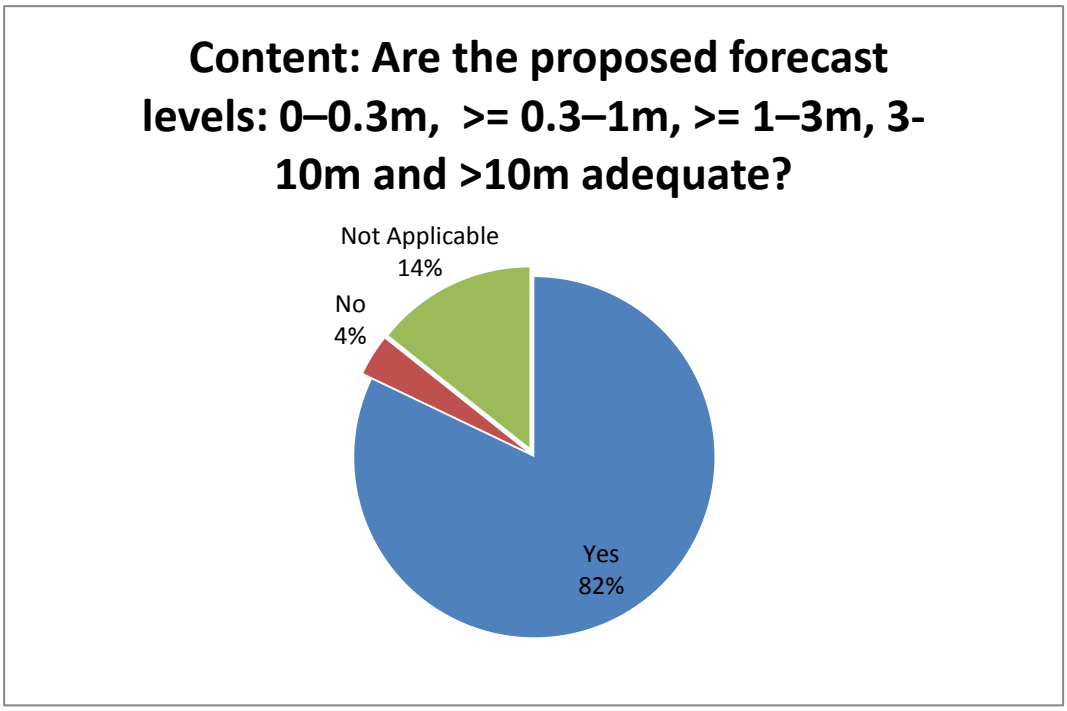

Figure I–26. Adequation of forecast levels proposed

The countries who answered **YES** to the above question were: Anguilla, Aruba, Barbados, Belize, Bermuda, Cayman Islands, Colombia, Dominica, Costa Rica, Dominican Republic, French West Indies, Guatemala, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Puerto Rico Saint Kitts and Nevis, The Bahamas, Turks and Caicos, and Venezuela.

The countries who answered **NO** to the above question were: US Virgin Islands.

The countries who answered **NOT APPLICABLE** to the above question were: Brazil, British Virgin Islands, Saint Lucia, and Sint Maarten.

The comments received from the participant Tsunami National Contacts (TNC) were:

- US Virgin Islands: Just put > 1 m to the public so if the numbers change people will have responded to the maximum threat. Local variations are information that NDMO needs to know, but not necessarily the public.

- Honduras: Son parámetros históricos en el área.

- French West Indies: However, in our SOP, we only considered 3 levels : <0,3m; 0,3-1; >1m as most of our communication networks would be impacted for heights >1m (e.g. roads..). Thus, with inundated and cut roads, people must be in safe location before the tsunami arrives.

- Saint Lucia: Focal point to answer.

Question 28

The TWFP/NDMO has an activation and response process (standard operating procedures) in place for the receipt of tsunami warnings.

Answer Options	Response Percent	Response Count
Yes	80.6%	25
No	16.1%	5
Not Applicable	3.2%	1
Comments:		10
	answered question	**31**
	skipped question	**5**

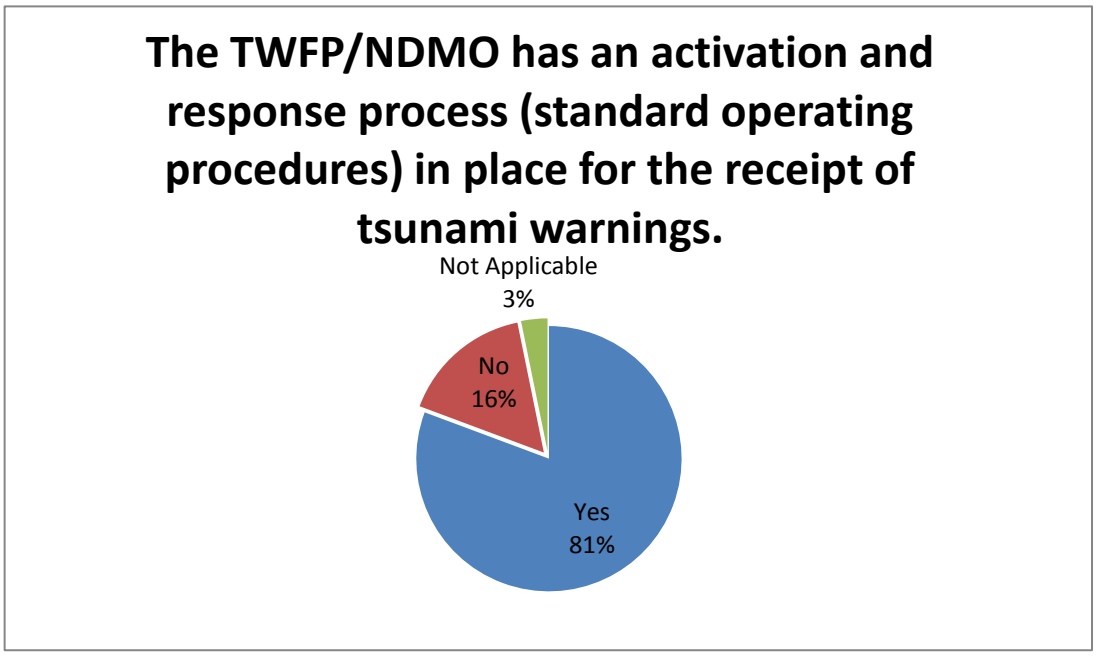

Figure I–27. TWFP/NDMO activation and response process in place for the receipt of tsunami warnings

The countries who answered **YES** to the above question were: Anguilla, Antigua and Barbuda, Aruba, Barbados, Belize, Bermuda, British Virgin Islands, Cayman Islands Colombia, Costa Rica, Dominican Republic, French West Indies, Guatemala, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Puerto Rico, Saint Lucia, Saint Vincent and The Grenadines, Saint Kitts and Nevis, The Bahamas, US Virgin Islands, and Venezuela.

The countries who answered **NO** to the above question were: Dominica, Montserrat, Sint Maarten, Suriname, and Turks and Caicos.

The countries who answered **NOT APPLICABLE** to the above question were: Brazil.

The comments received from the participant Tsunami National Contacts (TNC) were:

- Suriname: In preparation.
- Honduras: Protocolos.
- Bermuda: Bermuda Weather Service as the TWFP does. However, the EMO as the NDMO still needs to write up and finalize their SOPs for this type of event.
- Guatemala: Hay procedimiento de comunicación.
- Turks and Caicos: SOPs are in draft form, outdated and need to be revised.
- Dominica: Not fully operational - still working on one.
- Saint Kitts and Nevis: A Draft.
- French West Indies: TWFP SOP exists but is still under review in order to transmit the right and useful information to the NDMO and to save time.
- Saint Lucia: Draft.
- Jamaica: There is a Tsunami protocol in place that outlines this.

Question 29

The TWFP/NDMO has, prior to the exercise, engaged in tsunami response planning.

Answer Options	Response Percent	Response Count
Yes	87.1%	27
No	9.7%	3
Not Applicable	3.2%	1
Comments:		5
	answered question	**31**
	skipped question	**5**

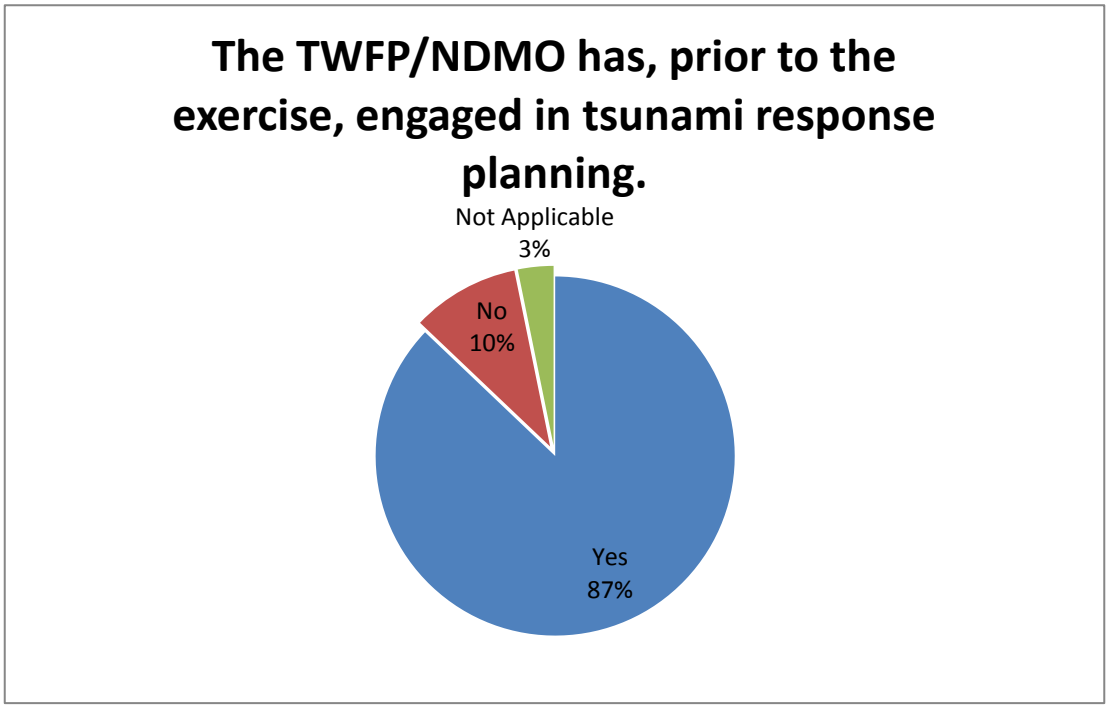

Figure I–28. Engagement of TWFP/NDMO in tsunami response planning

The countries who answered **YES** to the above question were: Anguilla, Antigua and Barbuda, Aruba, Barbados, Belize, Bermuda, British Virgin Islands, Cayman Islands, Colombia, Costa Rica, Dominican Republic, French West Indies, Haiti, Jamaica, Mexico, Nicaragua, Puerto Rico, Sain Lucia, Saint Vincent and The Grenadines, Sint Maarten, Saint Kitts and Nevis, Suriname, The Bahamas, Turks and Caicos, US Virgin Islands, and Venezuela.

The countries who answered **NO** to the above question were: Dominica, Guatemala, and Montserrat.

The countries who answered **NOT APPLICABLE** to the above question were: Brazil.

The comments received from the participant Tsunami National Contacts (TNC) were:

- Bermuda: We (BWS) as the TWFP have, but not really the EMO as the NDMO.
- Dominica: Work in progress/tsunami task force established.
- Nicaragua: Ver plan adjunto.
- French West Indies: The TWPF/NDMO have SOP, but evacuation plans are missing.
- Jamaica: Albeit in a limited manner.

Question 30

The TWFP/NDMO has undertaken activity to increase its capacity and capability to support a national tsunami response (for example, training, exercise, etc). Note activities in Comments section.

Answer Options	Yes	No	Not Applicable	Response Count
Yes	26	0	1	27
No	1	1	1	3
Not Applicable	0	0	1	1
Comments:				17
			answered question	**29**
			skipped question	**7**

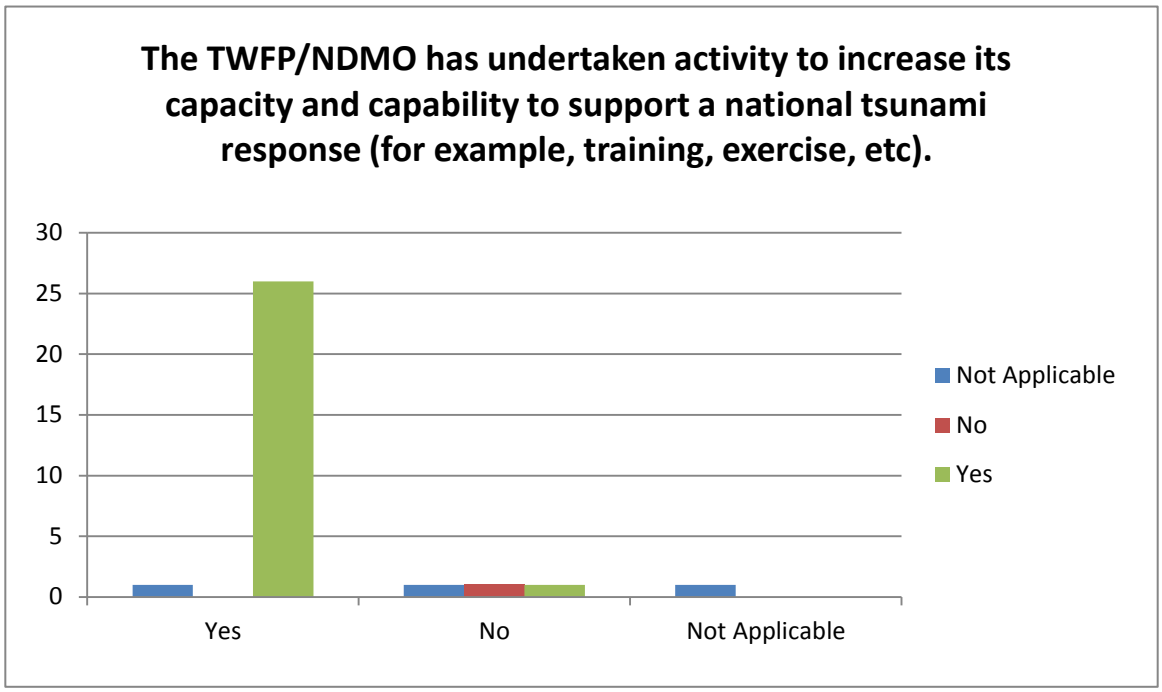

Figure I–29. TWFP/NDMO has undertaken activity to increase its capacity and capability to support a national response

The countries who answered **YES** to the above question were:

Yes: Anguilla, Antigua and Barbuda, Aruba, Barbados, Belize, Bermuda, British Virgin Islands, Cayman Islands, Colombia, Costa Rica, Dominican Republic, French West Indies, Haiti, Jamaica, Mexico, Nicaragua, Puerto Rico, Saint Lucia, Saint Vincent and The Grenadines, Sint Maarten, St. Kitts and Nevis, Suriname, The Bahamas, Turks and Caicos, US Virgin Islands, and Venezuela.

NO: N/A

NOT APPLICABLE: Brazil.

The countries who answered **NO** to the above question were: Montserrat.

The countries who answered **NOT APPLICABLE** to the above question were: Brazil.

The comments received from the participant Tsunami National Contacts (TNC) were:

- Cayman Islands: Training concentrated on response coordination of emergency response agencies.
- Honduras: Es necesario talleres, curos etc. o realizar algún evento en el país que levante el interés por el tema.
- Bermuda: Again BWS has but not EMO/Police as the NDMO. This is being undertaken as part of this year's exercise.
- Sint Maarten: We have done initial workshops. Proper mapping and determining safe zones still needs to be done.
- Haiti: Awareness, exercises, training...
- Bahamas: Participated in Local and International workshops organized by CDEMA.
- Turks and Caicos: 2007 - TCI participated in a six-day training on seismology and tsunami warning in Trinidad. 2012 - a team (911, DDME and TCI Airport Authority) attended tsunami workshop in the Dominican Republic. As of January 2014, earthquake and tsunami awareness week observed (12-17). School programs and Informational brochures produced.
- Dominica: Due to human resource constraints capacity to undertake such task will be always a challenge.
- Saint Kitts and Nevis: Orientation exercise, meetings with stakeholders to discuss draft protocols and SOPs.
- Anguilla: Advancing SOPs to the development of a plan; Training of TWFP; NEOC sensitizations; response plan reviews.
- Colombia: Entrenamiento y socialización de los procedimientos operaciones. Simulacros nacionales, estos últimos para la Costa Pacífica, pero el protocolo es el mismo para ambas regiones.
- Antigua and Barbuda: Training, staff sensitization, response software.
- Mexico: A manual was distributed in Spanish and agencies responsible for emergency response for some localities held previous meetings.
- French West Indies: Participation to the Barbados 2013 SOP training; Creation of a working group on public awareness.
- Saint Lucia: Training, talk shows, town hall meetings, school visits.
- Barbados: Training, exercise, public awareness for first responders, media, general public, businesses etc.
- Aruba: Communication channels to NDMO & authorities tested.

Question 31

The TWFP/NDMO has an appropriate management structure identified and documented to support tsunami response.

Answer Options	Response Percent	Response Count
Yes	86.7%	26
No	10.0%	3
Not Applicable	3.3%	1
Comments:		10
	answered question	**30**
	skipped question	**6**

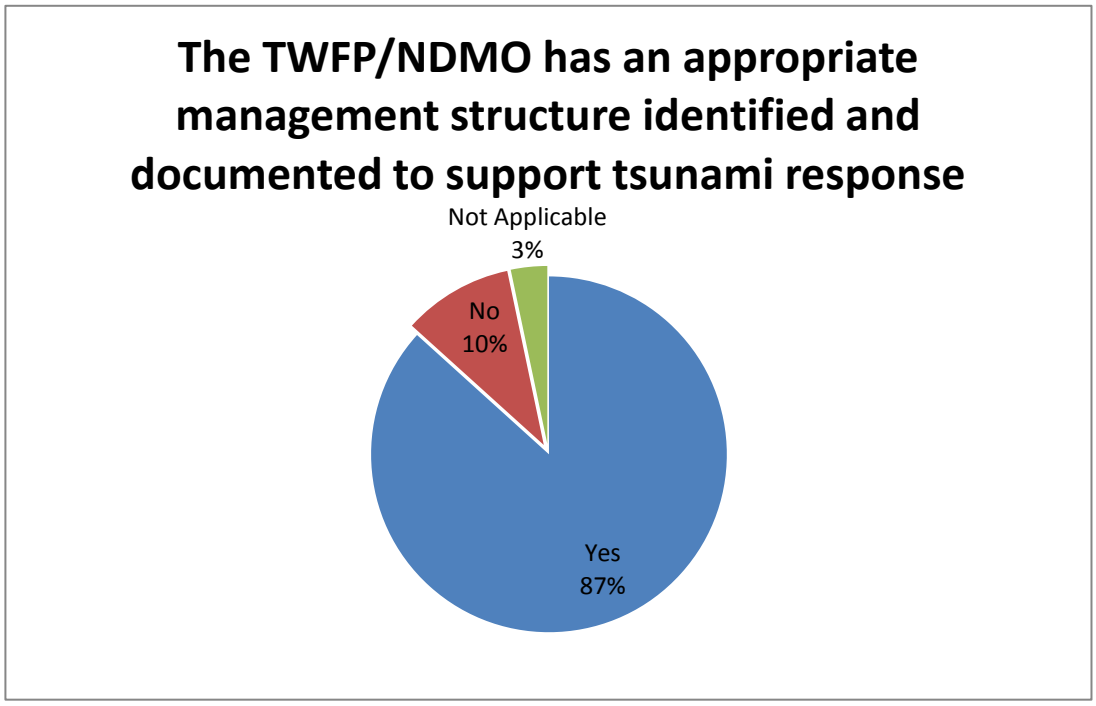

Figure I–30. The TWFP/NDMO has an appropriate management structure identified and documented to support tsunami response

The countries who answered **YES** to the above question were: Anguilla, Antigua and Barbuda, Aruba, Barbados, Belize, Bermuda, British Virgin Islands, Cayman Islands, Colombia, Dominica, Dominican Republic, French West Indies, Guatemala, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Puerto Rico, Saint Lucia, Saint Vincent and The Grenadines, Sint Maarten, Saint Kitts and Nevis, The Bahamas, US Virgin Islands, and Venezuela.

The countries who answered **NO** to the above question were: Costa Rica, Montserrat, and Turks and Caicos.

The countries who answered **NOT APPLICABLE** to the above question were: Brazil.

The comments received from the participant Tsunami National Contacts (TNC) were:

- Bermuda: A skeleton structure is there, but needs to be tweaked and finalized.
- Guatemala: Capacitación a técnicos que trabajan en oficina de monitoreo 24/7.

- Turks and Caicos: A priority area for the DDME.
- Dominica: The structure for other hazards applies in such cases.
- Nicaragua: El plan de país fue articulado con el plan internacional.
- Antigua and Barbuda: For TWFP, still refining.
- French West Indies: Yes for TWFP Not for NDMO in the sense that it is not 24/7.
- Saint Lucia: Draft.
- Costa Rica**:** They have structures for earthquake, seasonal flooding, etc., that might be useful for tsunami purposes.
- Jamaica**:** There is a structure, but role clarity may be necessary.

Question 32

The TWFP/NDMO has a tsunami mass coastal evacuation plan.

Answer Options	Response Percent	Response Count
Yes	21.9%	7
No	71.9%	23
Not Applicable	6.3%	2
Comments:		9
	answered question	**32**
	skipped question	**4**

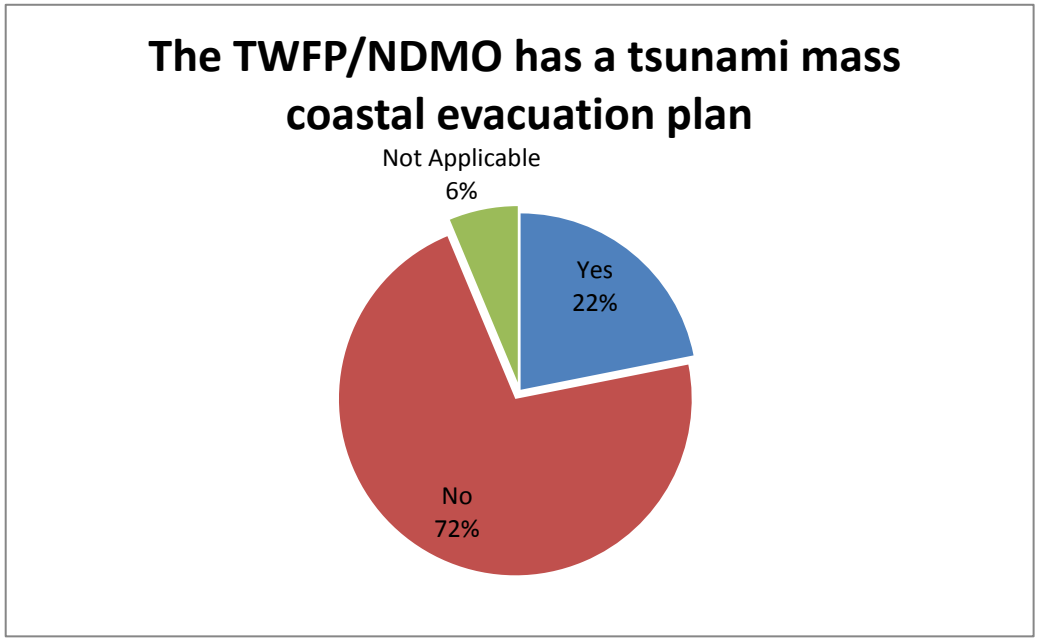

Figure I–31. Tsunami mass coastal evacuation plan at TWFP/NDMO

The countries who answered **YES** to the above question were: Anguilla, Colombia, Honduras, Mexico, Puerto Rico, US Virgin Islands, and Venezuela.

The countries who answered **NO** to the above question were: Antigua and Barbuda, Aruba, Barbados, Belize, Bermuda, British Virgin Islands, Cayman Islands, Dominica, Costa Rica, Dominican Republic, French West Indies, Guatemala, Guyana, Jamaica, Montserrat, Nicaragua, Saint Lucia, Saint Vincent and The Grenadines, Sint Maarten, Saint Kitts and Nevis, Suriname, The Bahamas, and Turks and Caicos.

The countries who answered **NOT APPLICABLE** to the above question were: Brazil and Haiti.

The comments received from the participant Tsunami National Contacts (TNC) were:

- US Virgin Islands: FEMA Region II All Hazards Plan USVI Earthquake and Tsunami Hazard Specific Annexes prepared in collaboration with VITEMA, part of catastrophic planning.

- Bermuda: Not as yet. Discussion with the EMO is on-going regarding this, off the back of this year's exercise.

- Turks and Caicos: A priority area for the DDME.

- Dominica: Work in progress.

- Nicaragua: En la zona Caribe de Nicaragua no se tiene un plan de respuesta a ante tsunami, sin embargo se utiliza el traslado del conocimiento de los planes de respuesta ante tsunami del pacifico y los planes de respuesta por inundaciones en el Caribe. El sistema nacional de prevención de desastres está trabajando en la conformación del plan de respuesta ante tsunami en el Caribe.

- Anguilla: Inclusive in the National Tsunami plan and as indicated on the Tsunami hazard map.

- Colombia: Principalmente para la Costa Pacífica del País donde la amenaza por tsunamis es mayor.

- French West Indies: We took advantage of this exercise to involve all the concerning services (fire, police, health, harbour, airport and education services, network operators, communities, ..) in the definition of a mass coastal evacuation plan.

- Barbados: Currently gathering scientific information to support process.

Question 33

Arrangements to assemble the in-country disaster management group (Emergency Operations Center) relevant to decision-making on tsunami warning and response exist.

Answer Options	Response Percent	Response Count
Yes	83.9%	26
No	12.9%	4
Not Applicable	3.2%	1
Comments:		5
answered question		**31**
skipped question		**5**

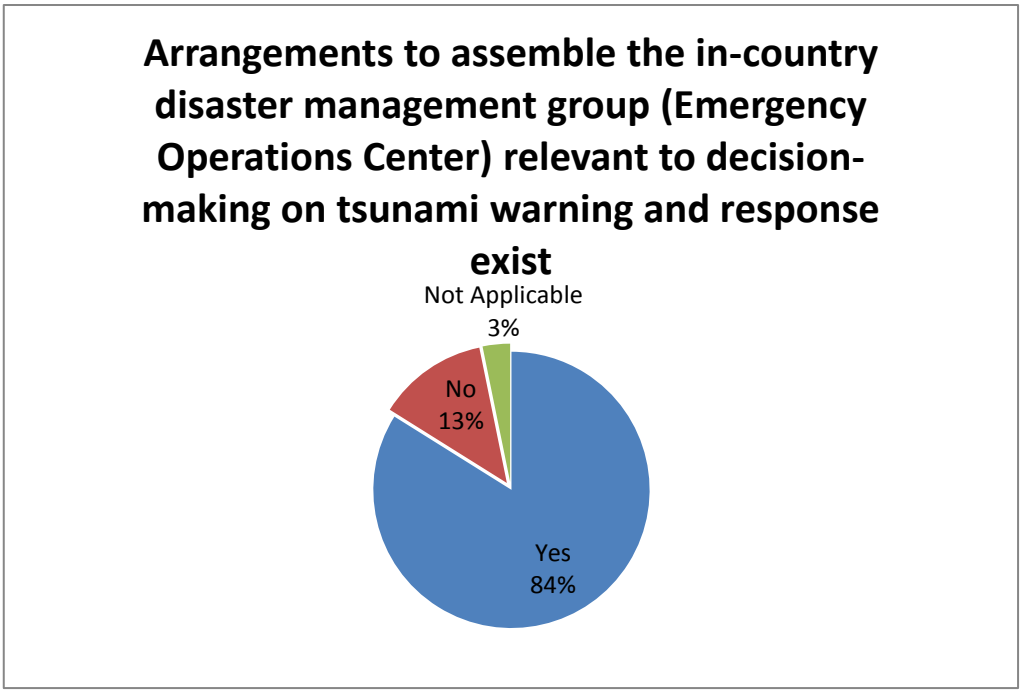

Figure I–32. Existence of arrangements to assemble the in-country disaster management group (Emergency Operations Center) relevant to decision-making on tsunami warning and response

The countries who answered **YES** to the above question were: Anguilla, Antigua and Barbuda, Aruba, Barbados, Bermuda, British Virgin Islands, Cayman Islands, Colombia, Dominica, Costa Rica, Dominican Republic, French West Indies, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Puerto Rico, Saint Lucia, Saint Vincent and The Grenadines, Sint Maarten, Saint Kitts and Nevis, The Bahamas, Turks and Caicos, US Virgin Islands, and Venezuela.

The countries who answered **NO** to the above question were: Belize, Guatemala, Montserrat, and Suriname.

The countries who answered **NOT APPLICABLE** to the above question were: Brazil.

The comments received from the participant Tsunami National Contacts (TNC) were:

- Suriname: In preparation.
- Bermuda: Only in their infancy at the moment. The director Kimberley Zuill and I are having a meeting with the EMO next month to solidify this.
- Nicaragua: Punto de vista del flujo de la comunicación.
- French West Indies: Yes, since Oct. 2013.
- Jamaica: This obtains at the National, Parish and Community levels.

Question 34

A country tsunami emergency response plan (standard operating procedures) for tele/regional/local tsunamis exists**.**

Answer Options	Yes	No	Not Applicable	Response Count
Local (less 1 hour arrival time)	17	8	2	27
Regional (1-3 hours estimated arrival time)	18	7	2	27
Distant (Greater than 3 hours)	19	7	2	28
Comments:				12
			answered question	**29**
			skipped question	**7**

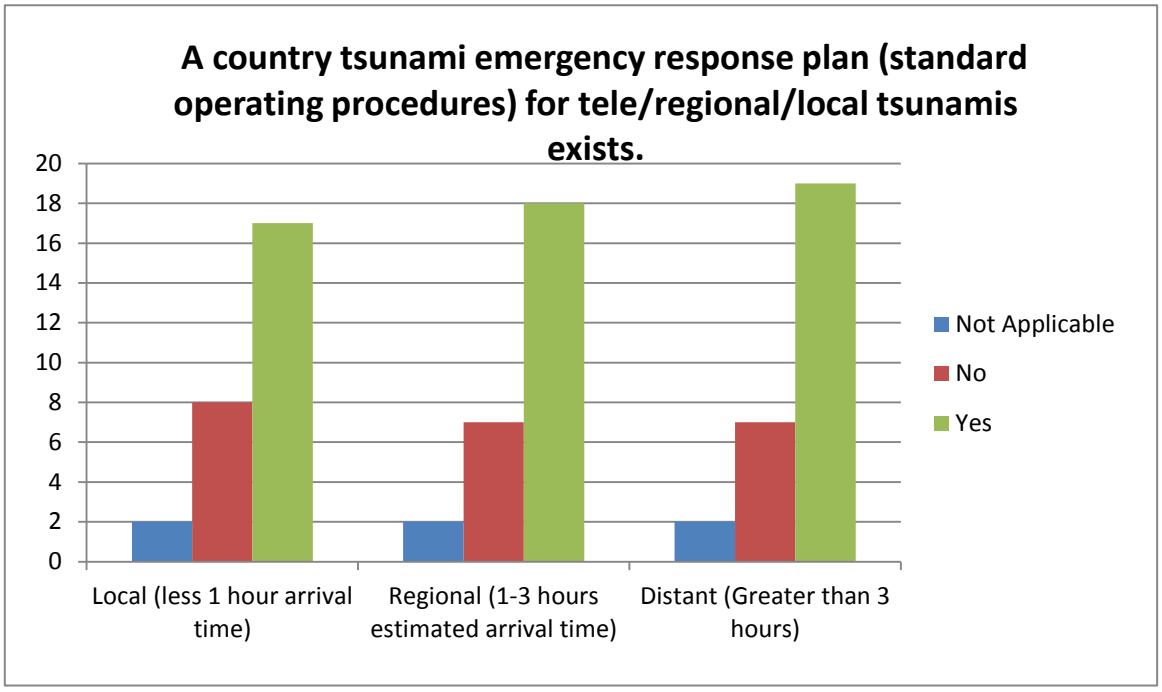

Figure I–33. Existence of a country tsunami emergency response plan for tele/regional/local tsunamis

The countries who answered **YES** to the above question were:

- Local: Anguilla, Antigua and Barbuda, Aruba, Barbados, British Virgin Islands, Cayman Islands, Colombia, Costa Rica, Dominican Republic, Honduras, Mexico, Nicaragua, Puerto Rico, Saint Lucia, The Bahamas, US Virgin Islands, and Venezuela.

- Regional: Belize, Bermuda, Dominica, French West Indies, Montserrat, Sint Maarten, Suriname, and Turks and Caicos.

- Distant: Brazil and Haiti.

The countries who answered **NO** to the above question were:

- Local: Anguilla, Antigua and Barbuda, Aruba, Barbados, Cayman Islands, Colombia, Dominica, Costa Rica, Dominican Republic, Guatemala, Honduras, Mexico,

Nicaragua, Puerto Rico, Saint Lucia, Saint Vincent and The Grenadines, The Bahamas, US Virgin Islands, and Venezuela.

- Regional: Belize, Bermuda, French West Indies, Montserrat, Sint Maarten, Suriname, and Turks and Caicos.

- Distant: Brazil and Haiti.

The countries who answered **NOT APPLICABLE** to the above question were:

- Local: Anguilla, Antigua and Barbuda, Aruba, Barbados, Cayman Islands, Colombia, Dominica, Costa Rica, Dominican Republic, Guatemala, Honduras, Mexico, Nicaragua, Puerto Rico, Saint Lucia, The Bahamas, US Virgin Islands, and Venezuela.

- Regional: Belize, Bermuda, French West Indies, Montserrat, Sint Maarten, Suriname, and Turks and Caicos.

- Distant: Brazil and Haiti.

The comments received from the participant Tsunami National Contacts (TNC) were:

- Honduras: Los parámetros de respuesta están definidos a partir del primer aviso.

- Bermuda: Nothing yet as specific as this. Again further discussion should hopefully establish something.

- Bahamas: SOPs exist but are currently being refined.

- Guatemala: Hay planes de evacuación por inundación no por tsunami.

- Turks and Caicos: Priority area for DDME. The response plan will need to be informed by bathymetric data which is also needed.

- Nicaragua: La activación del plan de emergencia se ejecuta según el protocolo en el Centro de Operaciones de Desastre (CODE).

- Dominica: Less than 1 hour requires more robust and EWS.

- Saint Kitts and Nevis: Will revisit the draft SOPs which respond to earthquake magnitudes.

- Colombia: En proceso de implementación.

- Dominican Republic: Yes, but is managed by the Emergency Operations Center (COE).

- French West Indies: We are working on the alerting process and defining a rapid dissemination of the alert to the population for regional and distant tsunamis.

- Saint Lucia: Draft plan/SOP.

Question 35

The response plan includes processes to issue all-clear (safe to return) notices.

Answer Options	Response Percent	Response Count
Yes	70.0%	21
No	16.7%	5
Not Applicable	13.3%	4
Comments:		5
answered question		**30**
skipped question		**6**

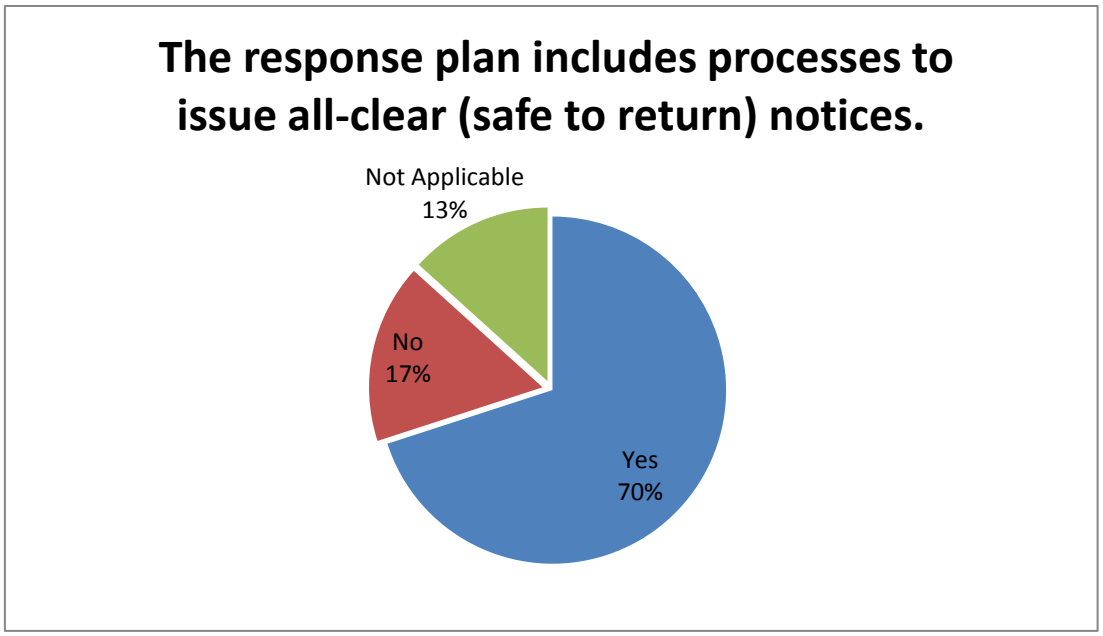

Figure I–34. Processes to issue all-clear notices included in the response plan

The countries who answered **YES** to the above question were: Anguilla, Aruba, Barbados, Bermuda, British Virgin Islands, Cayman Islands, Colombia, Dominica, Costa Rica, Dominican Republic, Honduras, Jamaica, Mexico, Nicaragua, Puerto Rico, Saint Lucia, Saint Vincent and The Grenadines, Saint Kitts and Nevis, The Bahamas, US Virgin Islands, and Venezuela.

The countries who answered **NO** to the above question were: French West Indies, Guatemala, Montserrat, Sint Maarten, and Suriname.

The countries who answered **NOT APPLICABLE** to the above question were: Belize, Brazil, Haiti, and Turks and Caicos.

The comments received from the participant Tsunami National Contacts (TNC) were:

- Bermuda: From BWS's perspective as the TWFP, yes.
- Nicaragua: Durante todo el ejercicio, las instituciones involucradas mantuvieron el flujo de la comunicación, con las delegaciones territoriales durante todo el ejercicio, las instituciones involucradas mantuvieron el flujo de la comunicación, con las delegaciones territoriales.

- Dominican Republic: Yes, but is managed by the Emergency Operations Center (COE).

- French West Indies: No, but the lack of "all-clear" message was identified during the Feb.18, 2014 earthquake and, tsunami watch/statement (WECA43).

- Saint Lucia: Draft plan/sop.

Question 36 Public education materials have been developed and disseminated**.**		
Answer Options	**Response Percent**	**Response Count**
Yes	64.5%	20
No	25.8%	8
Not Applicable	9.7%	3
Comments:		9
	answered question	**31**
	skipped question	**5**

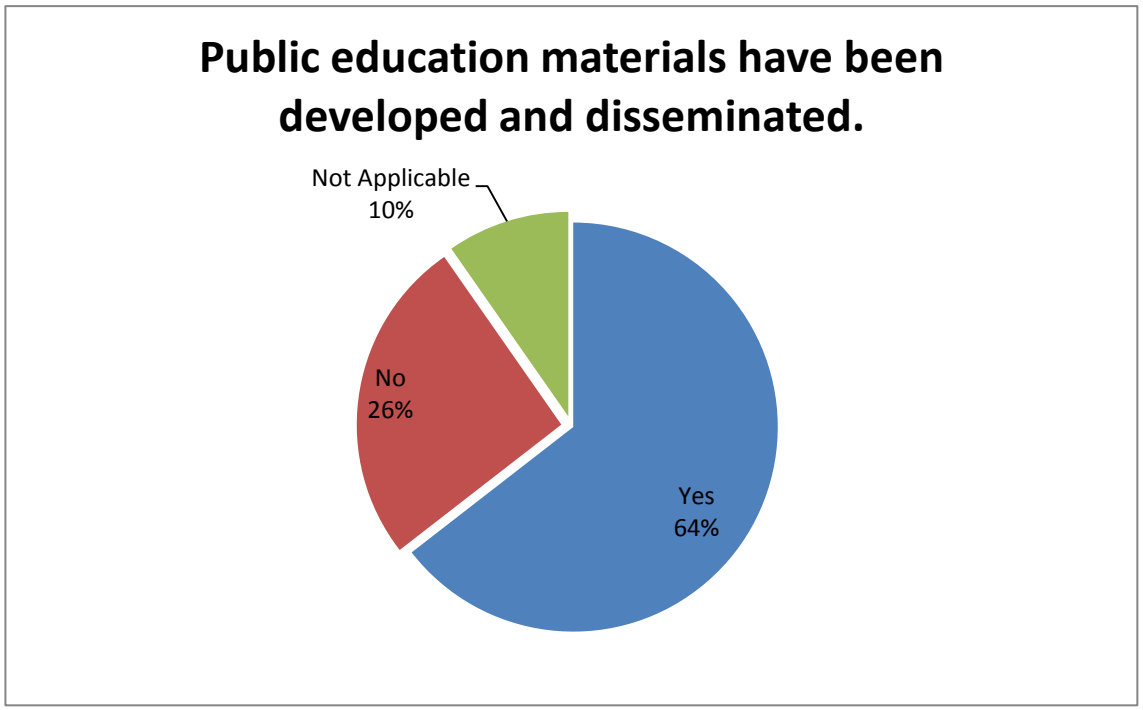

Figure I–35. Development and dissemination of public education materials

The countries who answered **YES** to the above question were: Anguilla, Antigua and Barbuda, Barbados, Belize, British Virgin Islands, Cayman Islands, Colombia, Dominica, Costa Rica, Haiti, Honduras, Jamaica, Mexico, Puerto Rico, Saint Vincent and The Grenadines, Saint Kitts and Nevis, The Bahamas, Turks and Caicos, US Virgin Islands, and Venezuela.

The countries who answered **NO** to the above question were: Aruba, Bermuda, Dominican Republic, French West Indies, Guatemala, Montserrat, Sint Maarten, and Suriname.

The countries who answered **NOT APPLICABLE** to the above question were: Brazil, Nicaragua, and Saint Lucia.

The comments received from the participant Tsunami National Contacts (TNC) were:

- Cayman Islands: Limited though.
- Honduras: Muy poco.
- Bermuda: This still needs to done by the EMO in conjunction with BWS's guidance. With regards to the staff at BWS, we have all now completed the COMET module on Tsunamis which we found very useful (too technical for the general public though).
- Turks and Caicos: Two tsunami and Earthquake pamphlets have been produced by DDME. Evacuation route maps for Grand Turk Schools have also been produced.
- Dominica: However limited.
- Colombia: Con énfasis en la Costa Pacífica del País.
- Antigua and Barbuda: Needs to be strengthened.
- French West Indies: A single and still used flyer issued in 2007 is used.
- Saint Lucia: Not developed. We get from others and give out.

Question 37 Are tsunami exercises routinely conducted in the country.		
Answer Options	**Response Percent**	**Response Count**
Yes	56.7%	17
No	40.0%	12
Not Applicable	3.3%	1
Comments:		18
	answered question	**30**
	skipped question	**6**

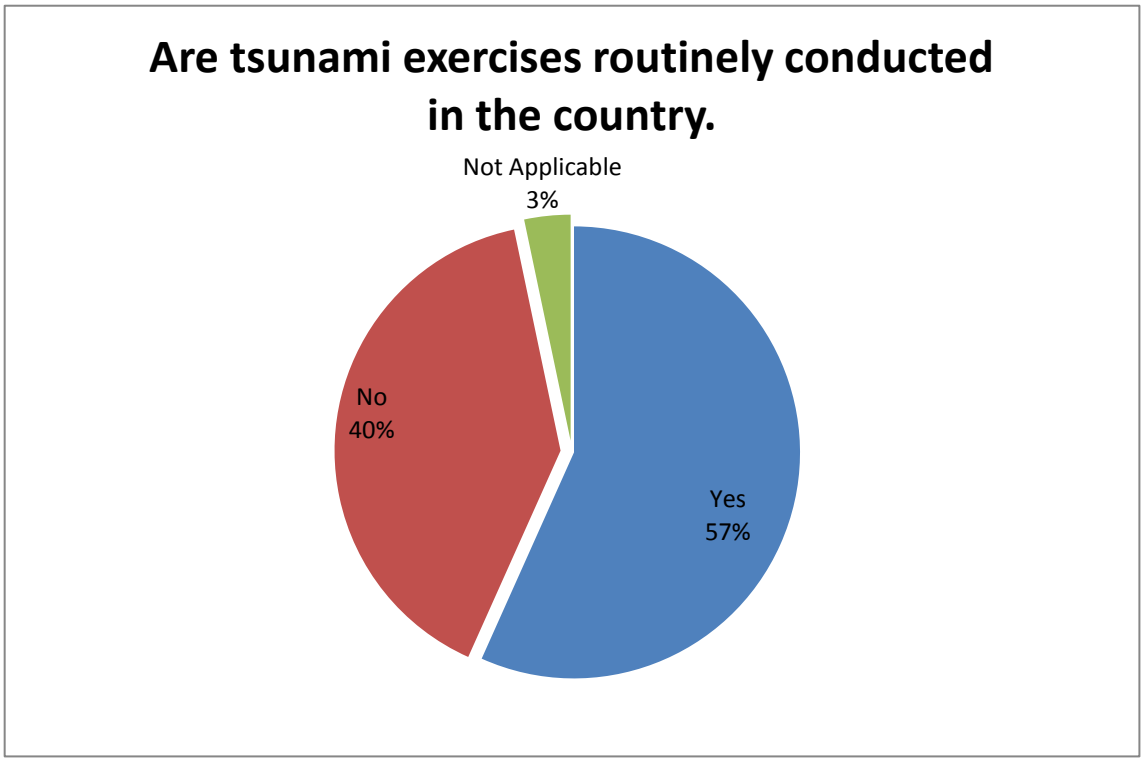

Figure I–36. Regular conduction of tsunami exercises

The countries who answered **YES** to the above question were: Anguilla, Antigua and Barbuda, Aruba, Barbados, Bermuda, British Virgin Islands, Colombia, Costa Rica, Guyana, Honduras, Jamaica, Mexico, Nicaragua, Puerto Rico, Suriname, US Virgin Islands, and Venezuela.

The countries who answered **NO** to the above question were: Belize, Cayman Islands, Dominica, Dominican Republic, French West Indies, Guatemala, Haiti, Montserrat, Saint Lucia, Saint Vincent and The Grenadines, Sint Maarten, and Turks and Caicos.

The countries who answered **NOT APPLICABLE** to the above question were: Brazil.

The comments received from the participant Tsunami National Contacts (TNC) were:

- Cayman Islands: Only conducted when there is a regional exercise like LANTEX.
- Suriname: CARIBE WAVE 2013.

- Guyana: CARIBE WAVE 13.
- US Virgin Islands: CARIBE WAVE/LANTEX 11, 12, 13 and Blue Surge.
- Bermuda: Yes, we participate every year as per the scheduled LANTEX/CARIBEWAVE exercises.
- Bahamas: CARIBE WAVE EXERCISE IN 2013.
- British Virgin Islands: March 2013.
- Turks and Caicos: In 2013 TCI participated in Caribe Wave 13 - a table top exercise was conducted. In 2011, DDME conducted an evacuation drill in Provincials for a primary school in the Five Cays Community; a vulnerable area.
- Nicaragua: Antecedente de CARIBE WAVE 2013.
- Dominica: Last exercise coincided with CARIBE WAVE LATEX 13.
- Saint Kitts and Nevis: Focus has been on evacuation of schools and was held earlier this year.
- Anguilla: CARIBEWAVE/ LANTEX 13.
- Colombia: Con énfasis en la Costa Pacífica del País.
- Dominican Republic: Only LANTEX exercises developed since 2010. CARIBE WAVE / LANTEX 13 CARIBE WAVE / LANTEX 12 CARIBE WAVE / LANTEX 11 CARIBE WAVE / LANTEX 10.
- French West Indies: Some evacuation exercises are conducted yearly by voluntary communities in November during a week of sensibilization to earthquakes and tsunamis: REPLIK week.
- Puerto Rico: LANTEX 2009, 2010, 2011, 2012, AND 2013.
- Costa Rica: Caribe Wave 2013 and Pacific Wave 2007.
- Aruba: CARIBE WAVE/LANTEX 13.

Question 38

Tsunami-related curriculum programmes are in place for different levels of education. Note which levels in Comments section.

Answer Options	Response Percent	Response Count
Yes	10.0%	3
No	86.7%	26
Not Applicable	3.3%	1
Comments:		13
	answered question	**30**
	skipped question	**6**

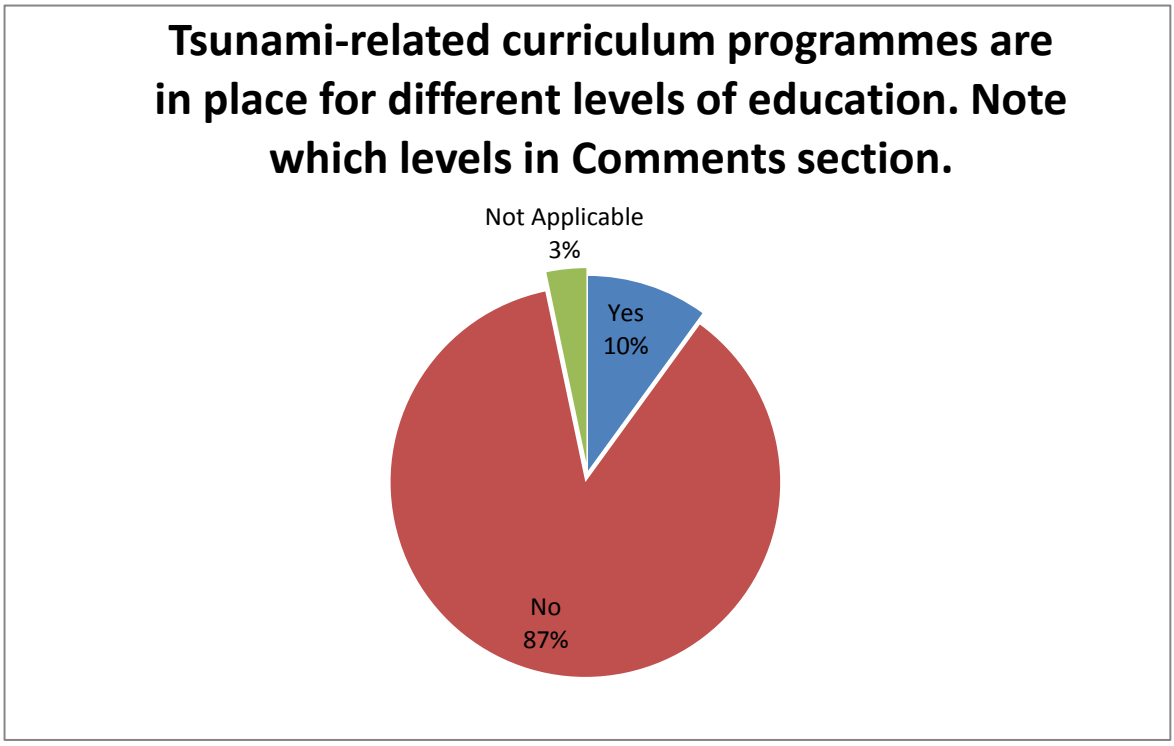

Figure I–37. Tsunami-related curriculum programmes are in place for different levels of education

The countries who answered **YES** to the above question were: British Virgin Islands, French West Indies, and The Bahamas.

The countries who answered **NO** to the above question were: Anguilla, Aruba, Barbados, Belize, Bermuda, Cayman Islands, Colombia, Dominica, Costa Rica, Dominican Republic, Guatemala, Haiti, Honduras, Jamaica, Mexico, Montserrat, Nicaragua, Puerto Rico, Saint Lucia, Saint Vincent and The Grenadines, Sint Maarten, Saint Kitts and Nevis, Suriname, Turks and Caicos, US Virgin Islands, and Venezuela.

The countries who answered **NOT APPLICABLE** to the above question were: Brazil.

The comments received from the participant Tsunami National Contacts (TNC) were:

- Cayman Islands: Only a basic public education program exists.
- Honduras: Se desarrollara ese proceso curricular.
- Bermuda: Nothing formally set up in Bermuda. Only comment is that staff at BWS have completed the COMET module on Tsunamis as part of our Tsunami education, bearing in mind our status as a TWFP.
- Bahamas: Adults, Teenagers, Children.
- British Virgin Islands: Information of all hazards is incorporated into the curriculum programs starting at kinder garden to grade 12. They have also adopted materials that have been developed by the department.
- Turks and Caicos: In the debriefing it was expressed that there is a need for greater integration of hazard-related curriculum programs in school programs at primary and high school level.
- Nicaragua: No para las zonas del Caribe.
- Saint Kitts and Nevis: Information is shared as part of Social Studies or Geography.
- Antigua and Barbuda: Better addressed by the TNC.
- French West Indies: During the REPLIK week, TV sensibilization, public conferences, and school interventions are proposed.
- Puerto Rico: In progress as collaboration with Puerto Rico Seismic Network (K-6) (7-12).
- Barbados: Not formally part of curriculum but done on an annual basis currently in discussion with ministry of education, school board of management to have it placed on curriculum.
- Jamaica: In bits a pieces but not comprehensively.

Question 39		
Are there other preparedness and education tools and products? Please list.		
Answer Options	**Response Percent**	**Response Count**
Yes	42.9%	12
No	53.6%	15
Not Applicable	3.6%	1
Comments:		17
	answered question	**28**
	skipped question	**8**

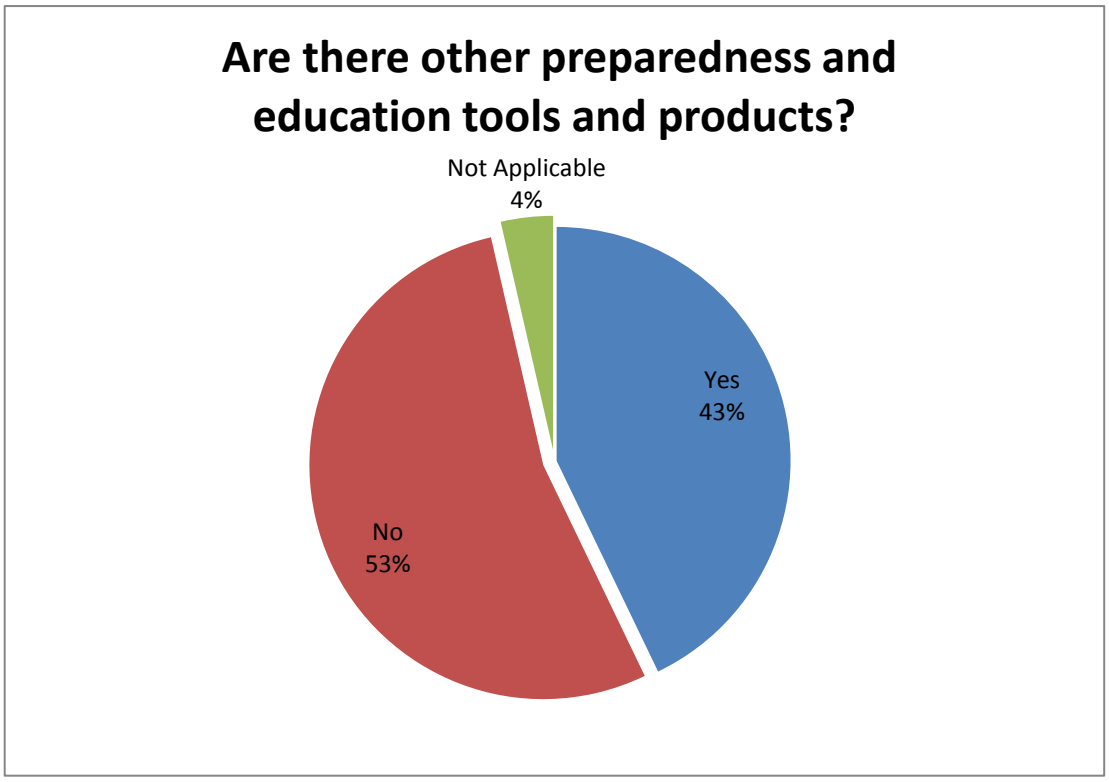

Figure I–38. Other preparedness and education tools and products

The countries who answered **YES** to the above question were: Antigua and Barbuda, Barbados, Bermuda, Cayman Islands, Dominican Republic, Haiti, Jamaica, Nicaragua, Saint Vincent and The Grenadines, The Bahamas, Turks and Caicos, and US Virgin Islands.

The countries who answered **NO** to the above question were: Aruba, Belize, Colombia, Dominica, Costa Rica, French West Indies, Guatemala, Honduras, Mexico, Montserrat, Puerto Rico, Saint Lucia, Sint Maarten, Suriname, and Venezuela.

The countries who answered **NOT APPLICABLE** to the above question were: Brazil.

The comments received from the participant Tsunami National Contacts (TNC) were:

- Cayman Islands: Brochures, NDMO website, and PowerPoint presentation.
- US Virgin Islands: Web site, PA's, Carnival Float, FEMA AWR NDPTC Tsunami Awareness Course, All Hazards Expo (annual event).

- Honduras: Estamos en proceso.
- Bermuda: Dr Mark Guishard at BIOS put together an educational presentation which has so far been showcased to the EMO as well as some other agencies/partners. Nothing has been disseminated into the public domain as such yet.
- Haiti: Comics book, poster, flyer, audio spot, SOP...
- Bahamas: VIDEO and DVD products.
- British Virgin Islands: Publications Program on YouTube Website (www.bviddm.com) Social Media (Focus Show DDM Radio).
- Venezuela: We are working in the preparedness and education plan.
- Turks and Caicos: Tsunami evacuation signs erected in Grand Turk. Evacuation route maps for Grand Turk Schools. - PSAs - School visit programs - CDEMA - (weready.org) materials.
- Nicaragua: El tema de tsunami está incluido en el currículo en todos los niveles de educación, incluido en los planes de seguridad escolar y en los planes de emergencia sanitario locales.
- Saint Kitts and Nevis: Posters, Fliers, Brochures, Television, documentaries videos.
- Anguilla: Brochures.
- Colombia: Colombia participa en los proyectos DIPECHO sobre "Reduciendo el Riesgo de Desastres a través de la Educación y la Ciencia en Chile, Colombia, Ecuador y Perú (2013 - 2014)". Aunque este proyecto tiene énfasis en la costa Pacífica. Además entidades técnicas del Sistema Nacional de Gestión del Riesgo de Desastres prepara y distribuye material educativo en las comunidades.
- Dominican Republic: Programs talks within ONAMET tsunami, as well as invitations to different institutions, hotels and universities.
- Antigua and Barbuda: Better addressed by the TNC.
- French West Indies: A WG on tsunami awareness (with participation of state services, communities, associations, etc.) has been created last November with the objectives to define an action plan and to create a preparedness and education tool box. A tsunami room is in preparation at existing the "Discovery Center for Earth Science".
- Barbados: Disaster game; DVD’s; printed materials.

Question 40

The response activation process was followed when the initial US PTWC and/or US NTWC Exercise Caribe Wave/Lantex 14 scenario exercise start message was received.

Answer Options	Response Percent	Response Count
Yes	70.0%	21
No	13.3%	4
Not Applicable	16.7%	5
Comments:		6
answered question		**30**
skipped question		**6**

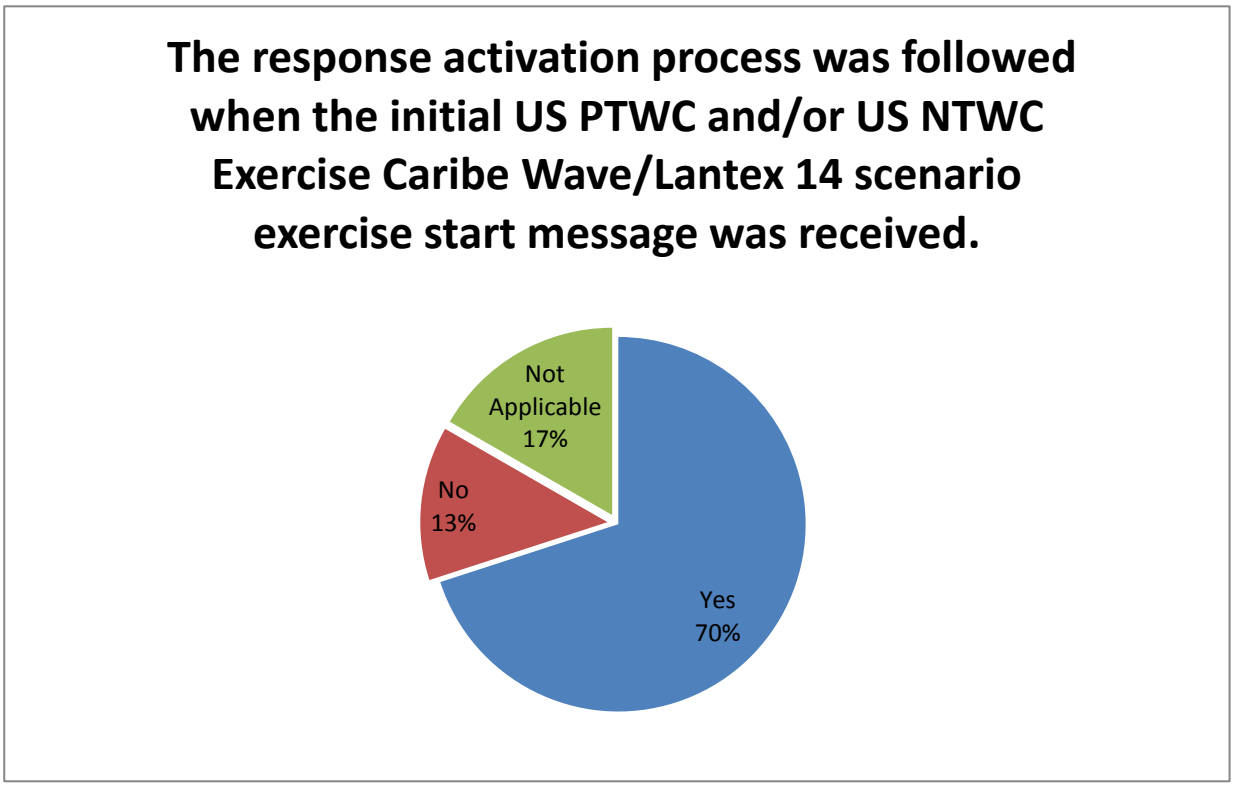

Figure I–39. The response activation process was followed when the initial US PTWC and/or US NTWC Exercise Caribe Wave/Lantex 14 scenario exercise start message was received

The countries who answered **YES** to the above question were: Angilla, Antigua and Barbuda, Aruba, Barbados, Bermuda, Cayman Islands, Colombia, Dominican Republic, French West Indies, Guatemala, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Puerto Rico, Saint Vincent and The Grenadines, The Bahamas, Turks and Caicos, US Virgin Islands, and Venezuela.

The countries who answered **NO** to the above question were: British Virgin Islands, Dominica, Costa Rica, and Saint Lucia.

The countries who answered **NOT APPLICABLE** to the above question were: Belize, Brazil, Montserrat, Sint Maarten, and Saint Kitts and Nevis.

The comments received from the participant Tsunami National Contacts (TNC) were:

- British Virgin Islands: Activation response stated on the First bulletin.
- Turks and Caicos: Press Releases regarding the exercise was disseminate via email. Mass text messages.
- Dominica: Twit to local scenario and conditions.
- Saint Kitts and Nevis: Not tested.
- French West Indies: The TWPF transmitted the information to the NDMO, which disseminated an alert message by AMA to the authorities, the communities, the emergency services, the networks operators... Then the NDMO asked them to come to the EOC.
- Puerto Rico: We use the CARIBE WAVE/ LANTEX 14 Handbook.

Question 41

The alert was disseminated to:

Answer Options	Yes	No	Not Applicable	Response Count
Emergency services	24	3	2	29
Other national/state government agencies	18	3	4	25
Science agencies/universities involved in assessment	5	7	7	19
Local government: provincial/regional level	11	4	7	22
Local government: city/district level.	13	4	5	22
Public	10	9	4	23
Comments:				13
			answered question	**30**
			skipped question	**6**

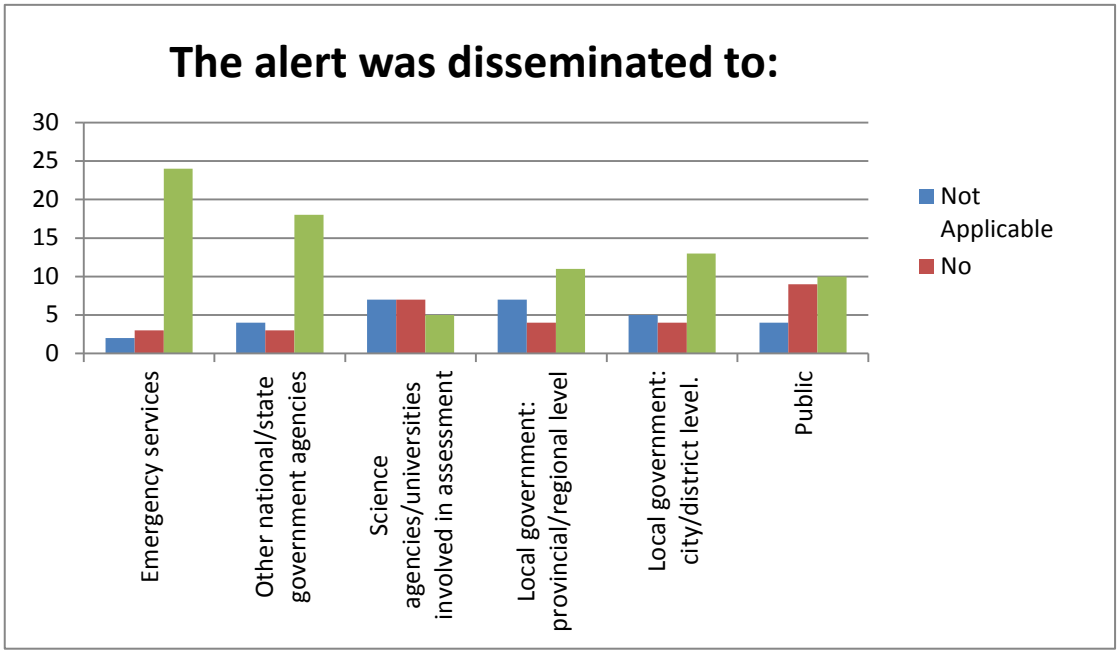

Figure I–40. Alert Recipients

The countries who answered **YES** to the above question were:

- Emergency services: Anguilla, Antigua and Barbuda, Aruba, Barbados, Bermuda, British Virgin Islands, Cayman Islands, Dominica, Costa Rica, Dominican Republic, French West Indies, Honduras, Mexico, Nicaragua, Puerto Rico, Saint Lucia, Saint Vincent and The Grenadines, Saint Kitts and Nevis, The Bahamas, Turks and Caicos, US Virgin Islands, and Venezuela.

- Other national/state government agencies: Anguilla, Aruba, Bermuda, Cayman Islands, Colombia, Dominica, Costa Rica, French West Indies, Guatemala, Haiti, Honduras, Mexico, Nicaragua, Puerto Rico, Saint Lucia, Saint Vincent and The Grenadines, Turks and Caicos, US Virgin Islands, and Venezuela.

- Science agencies/universities involved in assessment: Costa Rica, French West Indies, Honduras, US Virgin Islands, and Venezuela.

- Local government:
    - provincial/regional level: Dominica, Costa Rica, French West Indies, Honduras, Mexico, Nicaragua, Puerto Rico, Saint Vincent and The Grenadines, Turks and Caicos, US Virgin Islands, and Venezuela.
    - city/district level: Anguilla, Barbados, British Virgin Islands, Dominica, Costa Rica, French West Indies, Honduras, Mexico, Puerto Rico, Saint Vincent and The Grenadines, Turks and Caicos, US Virgin Islands, and Venezuela.
- Public: Anguilla, Barbados, Bermuda, British Virgin Islands, Cayman Islands, Puerto Rico, Saint Lucia, Turks and Caicos, US Virgin Islands, and Venezuela.

The countries who answered **NO** to the above question were:

- Emergency services: Belize, Colombia, and Suriname.
- Other national/state government agencies: Belize, Saint Lucia, and Suriname.
- Science agencies/universities involved in assessment: Belize, Colombia, Haiti, Nicaragua, Puerto Rico, Saint Lucia, and Suriname.
- Local government:
    - Provincial/regional level: Belize, Colombia, Saint Lucia, and Suriname.
    - Local government: city/district level: Belize, Colombia, Nicaragua, and Suriname.
- Public: Belize, Colombia, Dominica, Costa Rica, French West Indies, Haiti, Mexico, Nicaragua, and Suriname.

The countries who answered **NOT APPLICABLE** to the above question were:

- Emergency services: Brazil, and Sint Maarten.
- Other national/state government agencies: Brazil, British Virgin Islands, Haiti, Jamaica, and Sint Maarten.
- Science agencies/universities involved in assessment: Aruba, Barbados, Brazil, British Virgin Islands, Jamaica, Sint Maarten and Turks and Caicos.
- Local government:
    - Provincial/regional level: Aruba, Barbados, Brazil, British Virgin Islands, Haiti, Jamaica, and Sint Maarten.
    - City/district level: Aruba, Brazil, Haiti, Jamaica, and Sint Maarten.
- Public: Aruba, Brazil, Jamaica, and Sint Maarten.

The comments received from the participant Tsunami National Contacts (TNC) were:

- US Virgin Islands: Dissemination using VI Alert.

- Honduras: A lo interno de COPECO sin enviar documentos.
- Bermuda: The EMO (more specifically the National Disaster Coordinator) and Police are our initial points of contact. Others include the airport (Air Traffic Control) and the Marine Operations Centre (MAROPS), as well as the public of course.
- Saint Vincent and the Grenadines: Table top exercise was done.
- Bahamas: Alert was disseminated to NEMA.
- Guatemala: A la agencia de respuesta en este caso a CONRED.
- Turks and Caicos: Alert was disseminated via text messages, email, social media and the local radio station.
- Nicaragua: El cuanto a gobierno local: nivel provincial / regional, se refiere a las delegaciones del MINSA, MINED y EPN.
- Dominica: Exercise was limited to an inter-agency exercise.
- Saint Kitts and Nevis: To media To Ministry of education.
- Dominican Republic: ONAMET has the responsibility under the protocol, issue the Emergency Operations Center. (C0E).
- French West Indies: And also to the media.
- Barbados: We conducted an evacuation of schools therefore school personnel were notified.

Question 42

Did the TWFP send the US PTWC and/or US NTWC Exercise CARIBE WAVE/LANTEX 14 scenario initial dummy message to the agency or agencies listed in Q3.C2?

Answer Options	Response Percent	Response Count
Yes	36.7%	11
No	56.7%	17
Not Applicable	10.0%	3
Comments:		8
	answered question	**30**
	skipped question	**6**

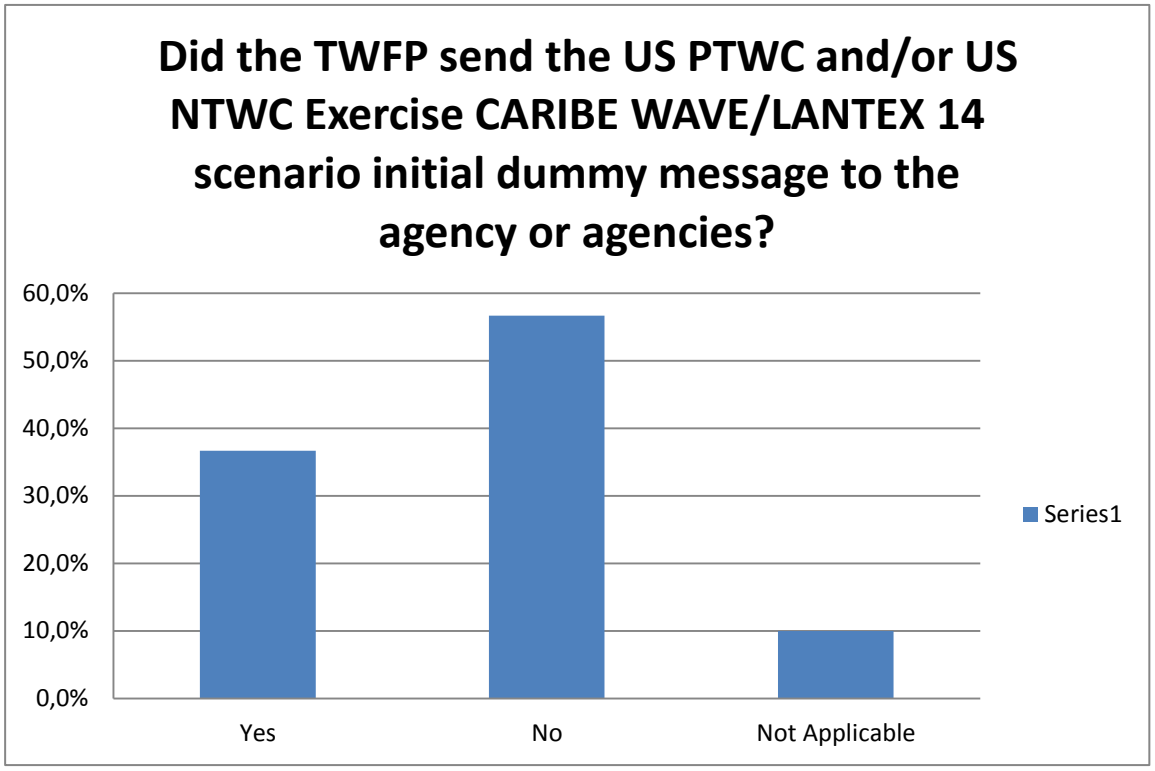

Figure I–41. TWFP send the US PTWC and/or US NTWC Exercise CARIBE WAVE/LANTEX 14 scenario initial dummy message to the agency or agencies

The countries who answered **YES** to the above question were: Barbados, Bermuda, British Virgin Islands, Cayman Islands, Guatemala, Honduras, Mexico, Nicaragua, Saint Vincent and The Grenadines, Turks and Caicos, and US Virgin Islands.

The countries who answered **NO** to the above question were: Anguilla, Aruba, Belize, Colombia, Dominica, Costa Rica, Dominican Republic, Haiti, Jamaica, Montserrat, Puerto Rico, Saint Kitts and Nevis, Suriname, The Bahamas, and Venezuela.

The countries who answered **NOT APPLICABLE** to the above question were: Brazil, French West Indies, and Sint Maarten.

The comments received from the participant Tsunami National Contacts (TNC) were:

- US Virgin Islands: Phone Tree was activated.
- Bermuda: Yes, this is done via an email distribution list. Note that MAROPS had also signed up to the exercise emails.
- Venezuela: We prepared a message to agencies listed in Q3.C2 in Spanish.
- Dominica: The message was analyzed and then the appropriate information disseminated on a need to know basis.
- Saint Kitts and Nevis: Information from the NTWC was shared via telephone to simulate urgency.
- Anguilla: The TNC did.
- Mexico: Only those mentioned above.
- Puerto Rico: We use the message from the CARIBE WAVE/ LANTEX 14 Handbook.

Question 43 How fast was PTWC and/or NTWC Exercise CARIBE WAVE/LANTEX 14 sent to the agency or agencies?		
Answer Options	**Response Percent**	**Response Count**
1-3 minutes	26.1%	6
4-6 minutes	21.7%	5
7-10 minutes	34.8%	8
> 10 minutes	17.4%	4
Comments:		5
	answered question	**23**
	skipped question	**13**

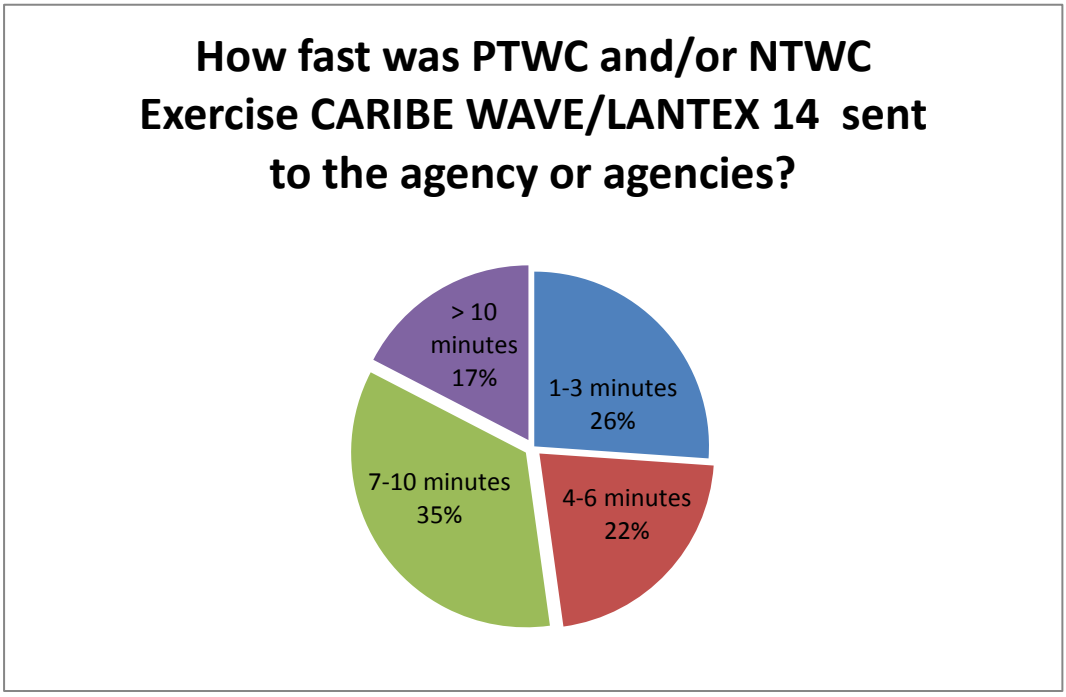

Figure I–42. Promptness of PTWC and/or NTWC

The countries who answered to the above question were:

- 1–3 minutes: Antigua and Barbuda, Aruba, Colombia, Dominica, Nicaragua, and Puerto Rico.
- 4–6 minutes: British Virgin Islands, Mexico, Saint Kitts and Nevis, US Virgin Islands, and Venezuela.
- 7–10 minutes: Anguilla, Barbados, Dominican Republic, French West Indies, Guatemala, Saint Lucia, Saint Vincent and The Grenadines, and Turks and Caicos.
- >10 minutes: Belize, Bermuda, Cayman Islands, and Honduras.

The comments received from the participant Tsunami National Contacts (TNC) were:

- Cayman Islands: This was for the initial message sent out. Subsequent messages where sent out in less time after message received and in a few cases more time.

- Honduras: Se analiza la información antes de enviarlas.

- Bermuda: The delay in time (took approx. 20 minutes) was due to contacting various agencies, and deciding on whether to issue a Watch/Warning for dissemination into the public domain.

- French West Indies: The NDMO in charge of the dissemination is not 24/7: it had to activate the sending of the alert from their home (it was 6 am local time, and they were out of the office) most.

- Jamaica: Not applicable.

Question 44

What methods were used by the TWFP to disseminate the warning/information products to the NDMO or like agency?

Answer Options	Yes	No	Not Applicable	Response Count
EMWIN	0	5	7	12
FAX	10	2	3	15
Email	18	1	4	23
SMS	5	6	3	14
Website	6	5	6	17
Social Media	4	6	4	14
Amateur Radio KP4	2	6	5	13
RSS	0	6	6	12
EAS	1	5	6	12
NOAA or Other Emergency Alert Radio	1	5	6	12
Sirens	2	6	7	15
Other	13	3	6	22
			answered question	**27**
			skipped question	**9**

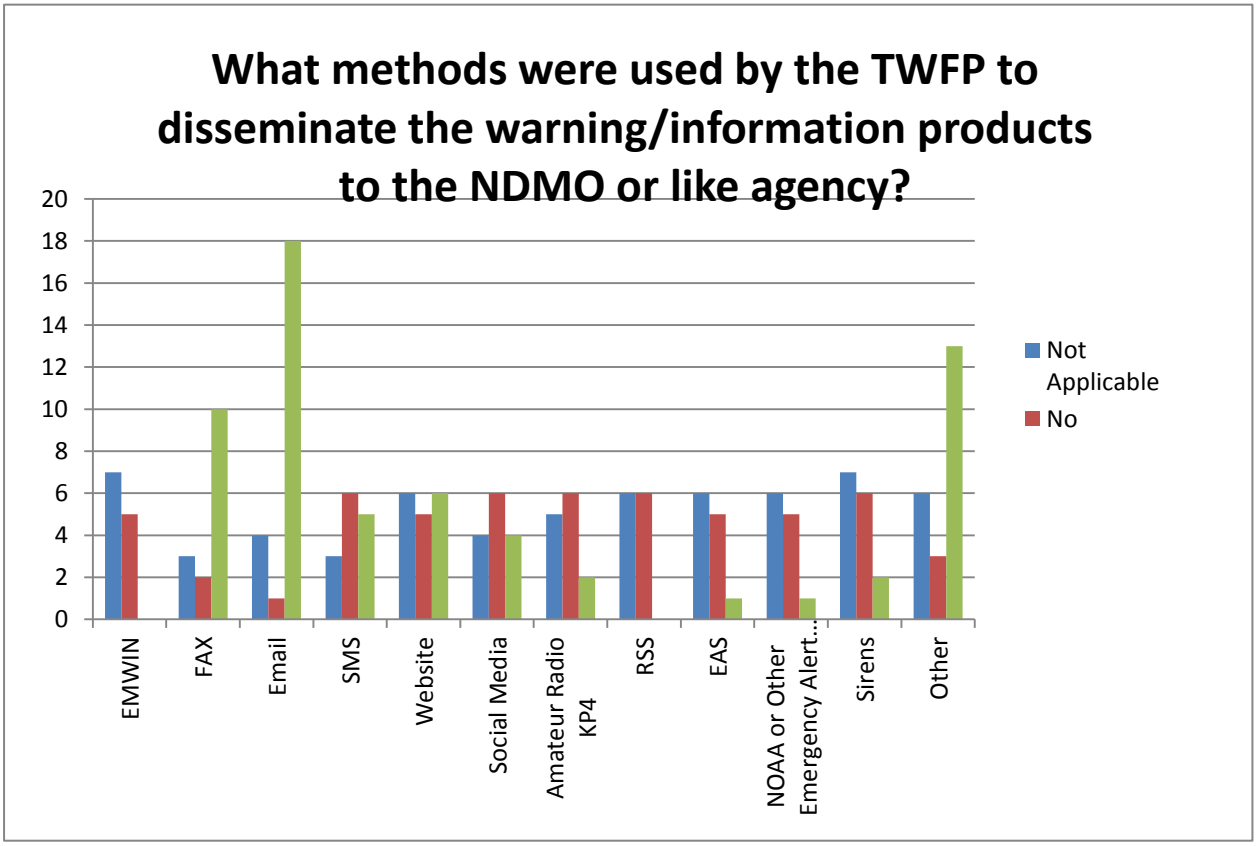

Figure I–42. Methods used by the TWFP to disseminate the warning/information products to the NDMO or like agency

The countries who answered **YES** to the above question were:

- EMWIN: N/A.
- FAX: Antigua and Barbuda, Aruba, Barbados, Colombia, Dominican Republic, French West Indies, Guatemala, Nicaragua, The Bahamas, and Turks and Caicos.
- Email: Anguilla, Antigua and Barbuda, Aruba, Bermuda, Cayman Islands, Colombia, Dominica, Dominican Republic, French West Indies, Guatemala, Haiti, Honduras, Mexico, Nicaragua, Puerto Rico, The Bahamas, Turks and Caicos, and Venezuela.
- SMS: Dominica, Haiti, Puerto Rico, Turks and Caicos, and Venezuela.
- Website: Aruba, Bermuda, Cayman Islands, Dominican Republic, Mexico, and Venezuela.
- Social Media: Aruba, Dominica, Puerto Rico, and Venezuela.
- Amateur Radio KP4: Puerto Rico and US Virgin Islands.
- RSS: N/A.
- EAS: Barbados.
- NOAA or Other Emergency Alert Radio: Barbados.
- Sirens: US Virgin Islands and Venezuela.

The countries who answered no to the above question were:

- EMWIN: Aruba, Barbados, Colombia, Haiti and Nicaragua.
- FAX: Haiti and Puerto Rico.
- Email: Barbados.
- SMS: Aruba, Barbados, Colombia, Dominican Republic, French West Indies, and Nicaragua.
- Website: Barbados, Colombia, French West Indies, Haiti, and Nicaragua.
- Social Media: Barbados, Colombia, Dominican Republic, French West Indies, Haiti, and Nicaragua.
- Amateur Radio KP4: Aruba, Barbados, Colombia, Dominican Republic, French West Indies, Haiti, and Nicaragua.
- RSS: Aruba, Barbados, Colombia, Dominican Republic, French West Indies, Haiti, and Nicaragua.
- EAS: Aruba, Colombia, Dominican Republic, French West Indies, Haiti, and Nicaragua.
- NOAA or Other Emergency Alert Radio: Aruba, Colombia, Dominican Republic, French West Indies, Haiti, and Nicaragua.

- Sirens: Aruba, Barbados, Colombia, Dominican Republic, French West Indies, Haiti, and Nicaragua.

The countries who answered not applicable to the above question were:

- EMWIN: Belize, Dominican Republic, Jamaica, Puerto Rico, Sint Maarten, and Turks and Caicos.
- FAX: Costa Rica, Jamaica, and Sint Maarten.
- Email: Belize, Costa Rica, Jamaica, and Sint Maarten.
- SMS: Costa Rica, Jamaica, and Sint Maarten.
- Website: Belize, Costa Rica, Jamaica, Puerto Rico, Sint Maarten and Turks and Caicos.
- Social Media: Costa Rica, Jamaica, Sint Maarten and Turks and Caicos.
- Amateur Radio KP4: Costa Rica, Dominican Republic, Jamaica, Sint Maarten and Turks and Caicos.
- RSS: Costa Rica, Dominican Republic, Jamaica, Puerto Rico, Sint Maarten and Turks and Caicos.
- EAS: Costa Rica, Dominican Republic, Jamaica, Puerto Rico, Sint Maarten and Turks and Caicos.
- NOAA or Other Emergency Alert Radio: Costa Rica, Dominican Republic, Jamaica, Puerto Rico, Sint Maarten and Turks and Caicos.
- Sirens: Belize, Costa Rica, Dominican Republic, Jamaica, Puerto Rico, Sint Maarten and Turks and Caicos.

Question 45

The method of communication from your public-safety, national/state decision-making and dissemination point to agencies was sufficient (timely, clear, and accurate) to support decision-making.

Answer Options	Response Percent	Response Count
Yes	61.3%	19
No	16.1%	5
Not Applicable	22.6%	7
Comments:		5
	answered question	**31**
	skipped question	**5**

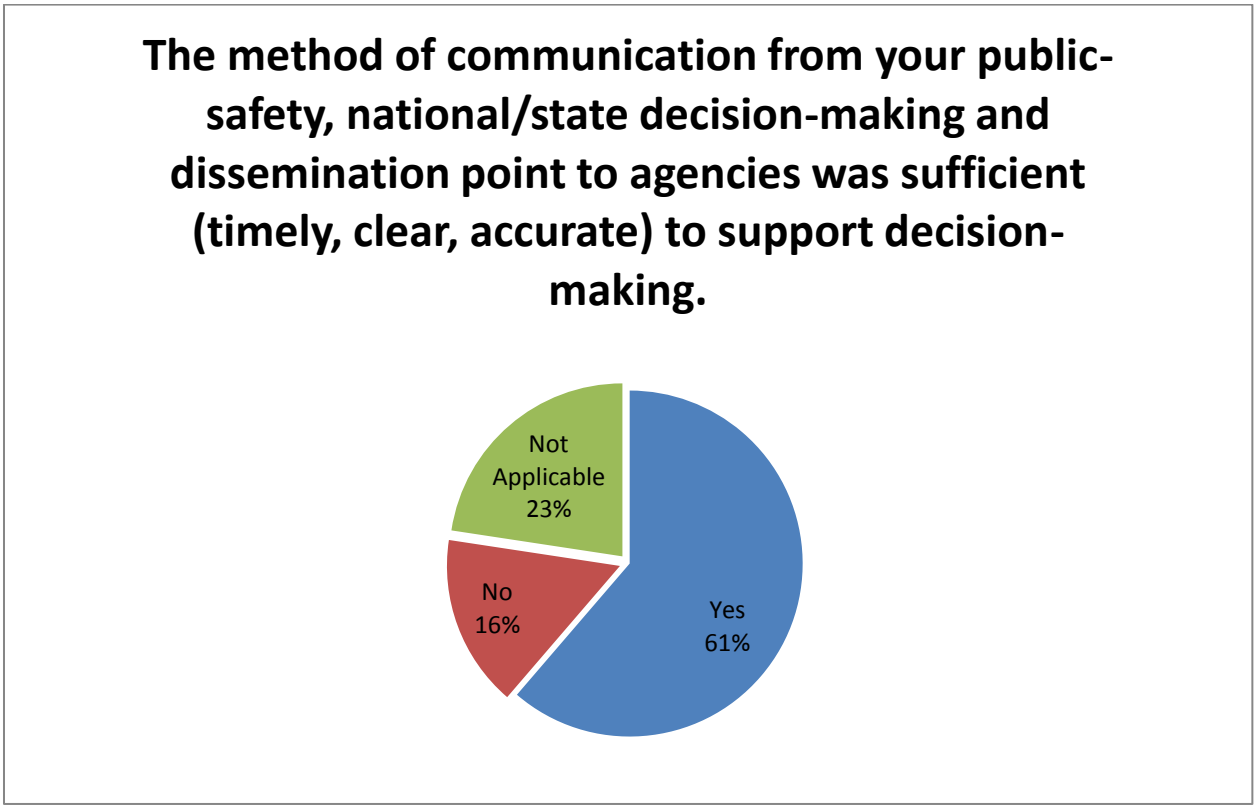

Figure I–44. Method of communication from your public-safety, national/state decision-making and dissemination point to agencies was sufficient to support decision-making.

The countries who answered **YES** to the above question were: Anguilla, Antigua and Barbuda, Aruba, British Virgin Islands, Cayman Islands, Colombia, Dominica, Dominican Republic, French West Indies, Guatemala, Haiti, Mexico, Nicaragua, Puerto Rico, Saint Vincent and The Grenadines, Saint Kitts and Nevis, The Bahamas, US Virgin Islands, and Venezuela.

The countries who answered **NO** to the above question were: Barbados, Bermuda, Honduras, Saint Lucia, and Turks and Caicos.

The countries who answered **NOT APPLICABLE** to the above question were: Belize, Brazil, Costa Rica, Jamaica, Montserrat, Sint Maarten, and Suriname.

The comments received from the participant Tsunami National Contacts (TNC) were:

- Honduras: Hay que trabajar el tema.

- Bermuda: Could have been better. When Kimberley Zuill (BWS) tried to contact the National Disaster Coordinator (NDC) only his voicemail was reached. Other alternates were also not reachable. Took 45mins for the NDC to get back to BWS.

- Turks and Caicos: Messages proved to be unclear for some and led to some confusion as it relates to response times of both schools and emergency and volunteer personnel. Messages should be tailored to the TCI and also include if to "STANDBY" for further information or "RESPOND". Messages were too technical for the general public. Some messages were also disseminated late.

- French West Indies: Yes, but need to be re-inforced: the NDMO alert automaton is limited to 500 sms with a succeed rate of 85% and 1 to 5 mn of dissemination.

- Barbados: Although communication was timely and clear there were some inaccuracies in the message content.

Question 46

The method(s) of communication between our emergency response agencies was sufficient to support national/state information requirements and decision-making?

Answer Options	Response Percent	Response Count
Yes	64.5%	20
No	9.7%	3
Not Applicable	25.8%	8
Comments:		5
	answered question	**31**
	skipped question	**5**

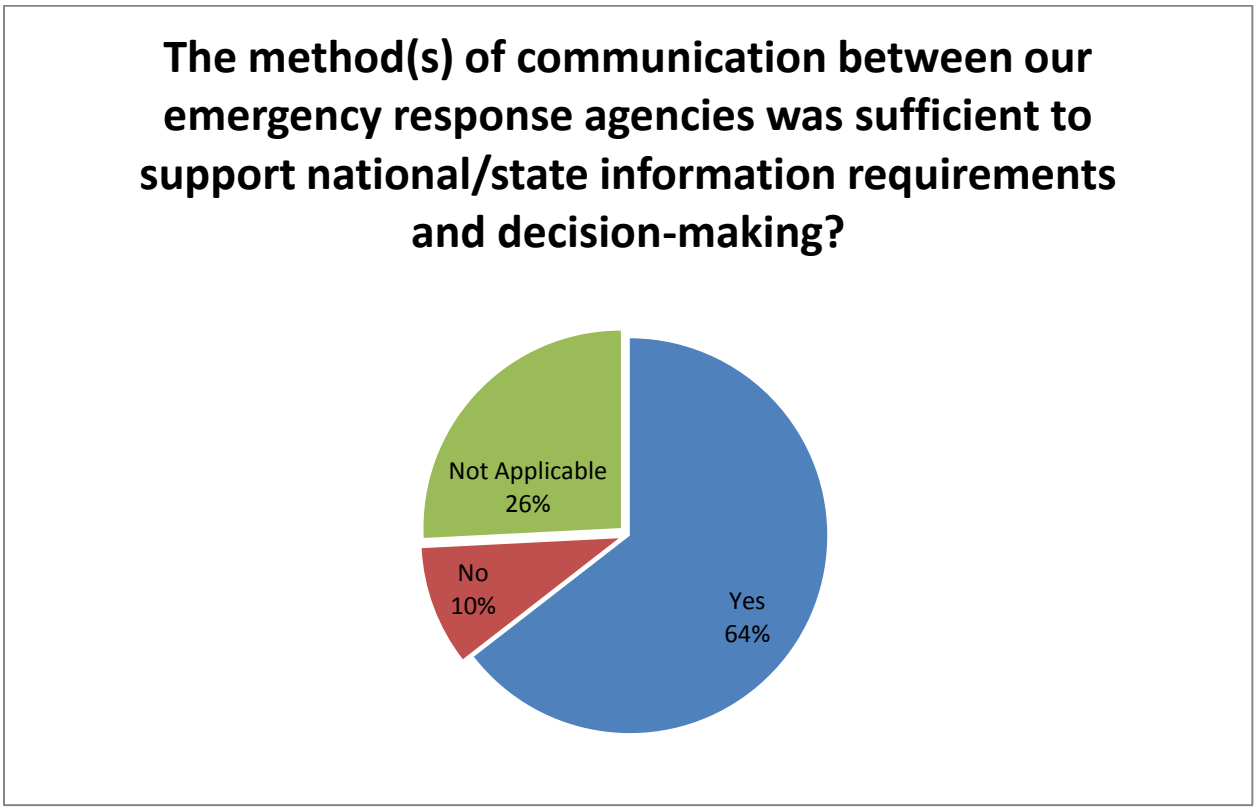

Figure I–45. The method(s) of communication between our emergency response agencies was sufficient to support national/state information requirements and decision-making

The countries who answered **YES** to the above question were: Anguilla, Antigua and Barbuda, Aruba, Barbados, Belize, British Virgin Islands, Cayman Islands, Colombia, Dominican Republic, French West Indies, Guatemala, Honduras, Mexico, Nicaragua, Puerto Rico, Saint Vincent and The Grenadines, Saint Kitts and Nevis, The Bahamas, US Virgin Islands, and Venezuela.

The countries who answered **NO** to the above question were: Dominica, Saint Lucia, and Turks and Caicos.

The countries who answered **NOT APPLICABLE** to the above question were: Bermuda, Brazil, Costa Rica, Haiti, Jamaica, Montserrat, Sint Maarten, and Suriname.

The comments received from the participant Tsunami National Contacts (TNC) were:

- Bermuda: No SOP set up for this as yet.
- Turks and Caicos: Radio communication in the TCI needs greater improvement. Heavy reliance of cell phones.
- Dominica: Needed more radio communication.
- Antigua and Barbuda: Needs to be strengthened.
- French West Indies: Yes, in this particular case of a trans-oceanic tsunami: emergency response services are asked to be represented at the EOC.

Question 47

Was your Emergency Operations Center activated during the exercise?

Answer Options	Response Percent	Response Count
Yes	60.0%	18
No	33.3%	10
Not Applicable	6.7%	2
Comments:		10
	answered question	**30**
	skipped question	**6**

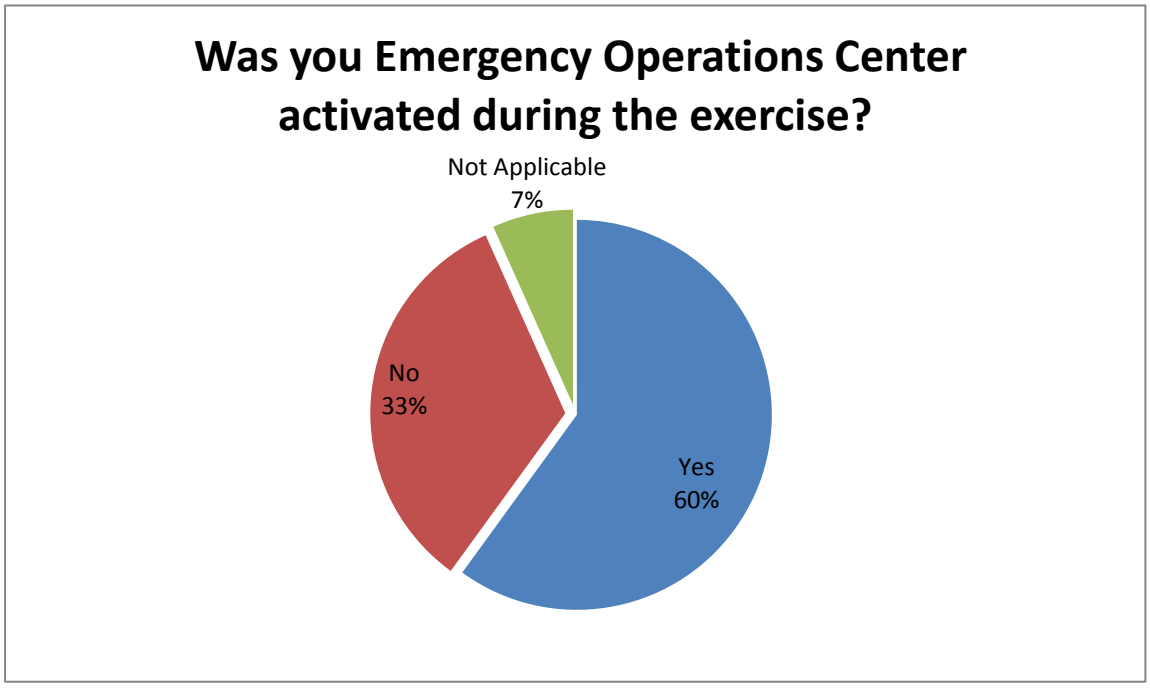

Figure I–46. Activation of the Emergency Operations Centre during the exercise

The countries who answered **YES** to the above question were: Anguilla, Antigua and Barbuda, Barbados, Bermuda, British Virgin Islands, Cayman Islands, Dominica, Dominican Republic, French West Indies, Haiti, Honduras, Nicaragua, Puerto Rico, Saint Vincent and The Grenadines, Saint Kitts and Nevis, The Bahamas, US Virgin Islands, and Venezuela.

The countries who answered **NO** to the above question were: Belize, Colombia, Costa Rica, Guatemala, Mexico, Montserrat, Saint Lucia, Sint Maarten, Suriname, and Turks and Caicos.

The countries who answered **NOT APPLICABLE** to the above question were: Aruba and Jamaica.

The comments received from the participant Tsunami National Contacts (TNC) were:

- Cayman Islands: Notionally.
- US Virgin Islands: All three, St. Thomas, St. Croix and St. John.
- Honduras: Internamente.

- Bermuda: Only to the extent of being notified. Procedures (SOPs) still need to be established.

- Turks and Caicos: An Incident Command Post was activated.

- Nicaragua: El code fue activado inmediatamente y los técnicos de enlace de las instituciones involucrados en el ejercicio se personaron en el code entre 10 a 30 minutos, después de iniciado el ejercicio.

- Dominica: Partial activation/ did a virtual EOC for the most part.

- Saint Kitts and Nevis: In principle to create an atmosphere of urgency.

- French West Indies: At 3 levels: zonal EOC (based in Martinique), local EOC (one for Martinique, one for Guadeloupe and one for St Martin &St Barth), and maritime EOC (based in Martinique).

- Barbados: For the purposes of the Barbados, the focus was on testing communications.

Question 48

If you answered yes to 47 (above), was this timely to facilitate good decision-making?

Answer Options	Response Percent	Response Count
Yes	60.7%	17
No	7.1%	2
Not Applicable	32.1%	9
Comments:		6
	answered question	**28**
	skipped question	**8**

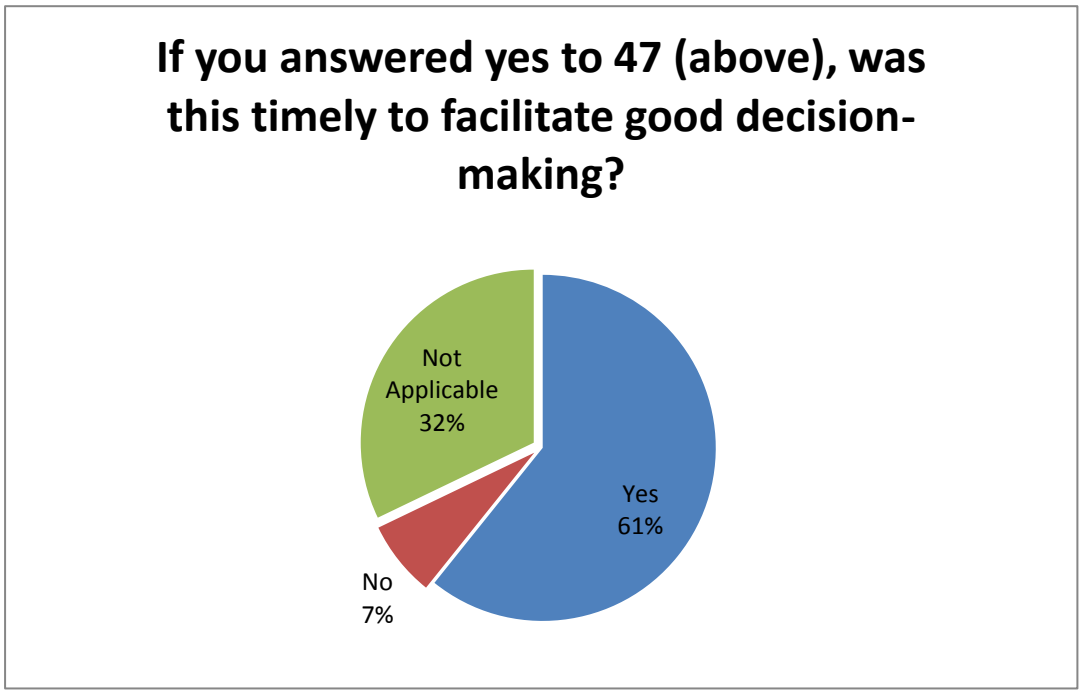

Figure I–47. Timely activation of the Emergency Operations Centre to facilitate good decision-making

The countries who answered **YES** to the above question were: Anguilla, Antigua and Barbuda, Barbados, British Virgin Islands, Cayman Islands, Dominican Republic, French West Indies, Haiti, Honduras, Nicaragua, Puerto Rico, Saint Lucia, Saint Vincent and The Grenadines, Saint Kitts and Nevis, The Bahamas, US Virgin Islands, and Venezuela.

The countries who answered **NO** to the above question were: Bermuda, and Dominica.

The countries who answered **NOT APPLICABLE** to the above question were: Aruba, Belize, Brazil, Colombia, Jamaica, Mexico, Montserrat, Sint Maarten, and Turks and Caicos.

The comments received from the participant Tsunami National Contacts (TNC) were:

- Cayman Islands: The activation was partial allowing the necessary agencies to have a focal point for coordinating a national response.
- Bermuda: As mentioned there was a significant delay in getting hold of the NDC.
- Saint Vincent and the Grenadines: Yes. All key agencies involved.
- Turks and Caicos: The drill commenced at 10:00am (EST) and the Incident Command Post was activated at 10:29am (EST).
- French West Indies: 1,5h is approximately needed to activate all the EOC. We consider it perfectible in the case of a regional tsunami.
- Saint Lucia: EOC was not activated but a pre-strike meeting was held.

Question 49

Did the national disaster management organization (or equivalent) maintain communication with the Tsunami Warning Focal Point throughout the event?

Answer Options	Response Percent	Response Count
Yes	61.3%	19
No	16.1%	5
Not Applicable	22.6%	7
Comments:		6
answered question		**31**
skipped question		**5**

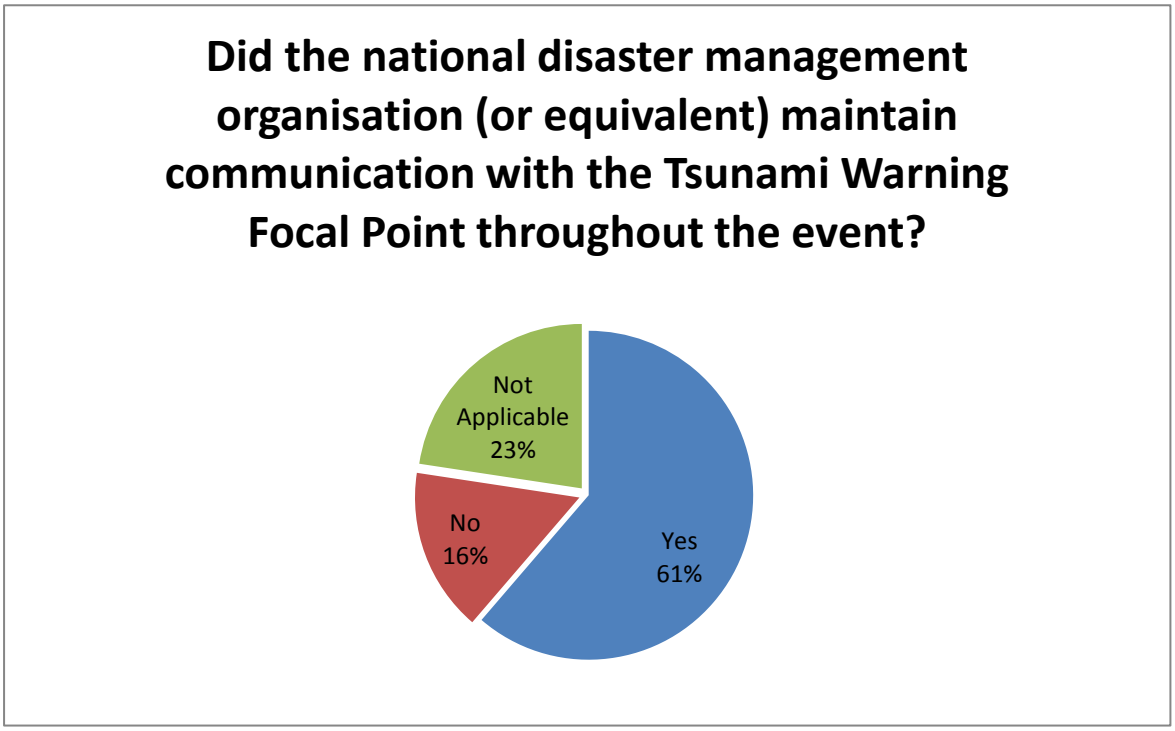

Figure I–48. Maintenance of the DMO communication with the TWPF during the exercise

The countries who answered **YES** to the above question were: Antigua and Barbuda, Barbados, Bermuda, Cayman Islands, Dominica, Costa Rica, Dominican Republic, French West Indies, Guatemala, Haiti, Honduras, Mexico, Nicaragua, Saint Vincent and The Grenadines, Saint Kitts and Nevis, The Bahamas, Turks and Caicos, US Virgin Islands, and Venezuela.

The countries who answered **NO** to the above question were: Anguilla, Belize, British Virgin Islands, Colombia, and Saint Lucia.

The countries who answered **NOT APPLICABLE** to the above question were: Aruba, Brazil, Jamaica, Montserrat, Puerto Rico, Sint Maarten, and Suriname.

The comments received from the participant Tsunami National Contacts (TNC) were:

- Bermuda: Once initial communication was made (inclusive of aforementioned delays) this was done, mostly via email.
- Turks and Caicos: 911 representatives were present at the incident command post.
- Anguilla: Protocols dictate that the TWPF initially notify and the National Disaster Organization takes over.
- Colombia: La Organización de Manejo de Emergencias no participó en el desarrollo del ejercicio.
- Puerto Rico: NDMO and TWFP are the same.
- Jamaica: All parties were in one location.

Question 50

Did the national disaster management organization (or equivalent) maintain communication with local/regional disaster management organizations (or equivalent)?

Answer Options	Response Percent	Response Count
Yes	50.0%	15
No	10.0%	3
No Applicable	40.0%	12
Comments:		4
	answered question	**30**
	skipped question	**6**

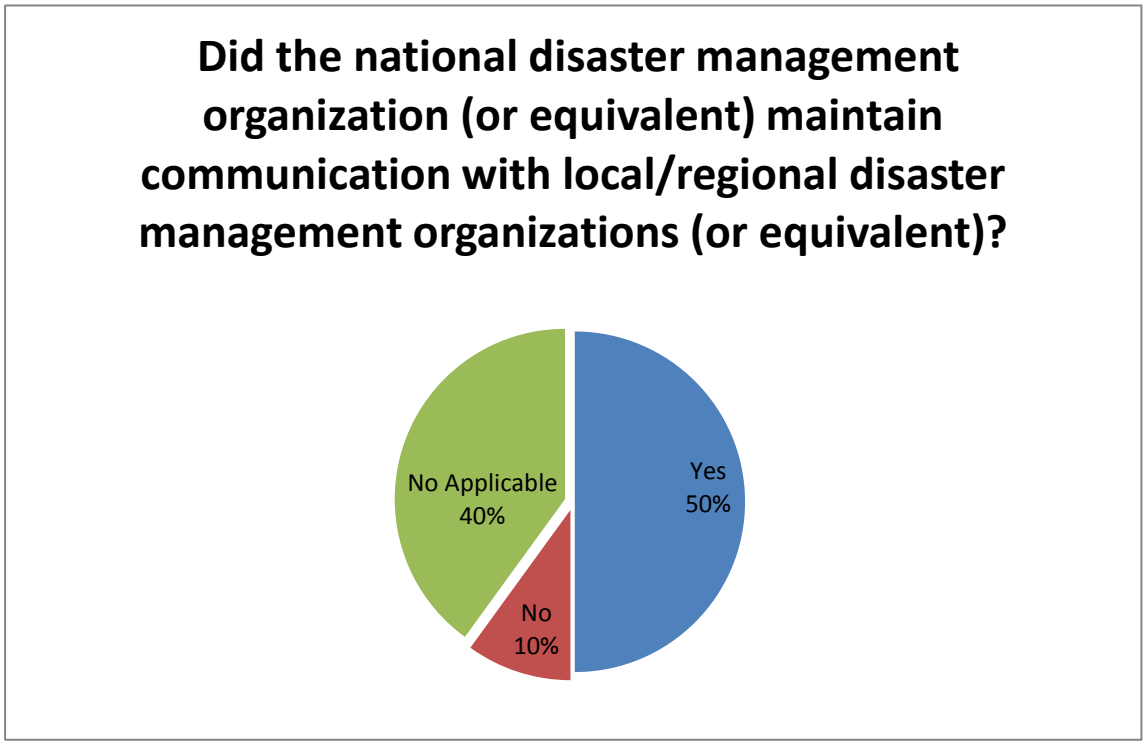

Figure I–49. Maintenance of the DMO (or equivalent) communication with local/regional disaster management organizations (or equivalent)

The countries who answered **YES** to the above question were: Anguilla, Barbados, British Virgin Islands, Dominica, Costa Rica, Dominican Republic, French West Indies, Honduras, Mexico, Nicaragua, Puerto Rico, Saint Vincent and The Grenadines, The Bahamas, US Virgin Islands, and Venezuela.

The countries who answered **NO** to the above question were: Belize, Cayman Islands, and Saint Lucia.

The countries who answered **NOT APPLICABLE** to the above question were: Aruba, Bermuda, Brazil, Colombia, Guatemala, Haiti, Jamaica, Montserrat, Sint Maarten, Saint Kitts and Nevis, and Suriname.

The comments received from the participant Tsunami National Contacts (TNC) were:

- British Virgin Islands: The HF Communication was monitored; however there was no activity from other disaster management organization within the region.

- Saint Kitts-Nevis: The communication tests focused in country.

- Antigua and Barbuda: Better addressed by the TNC.

- French West Indies: Actually, the FWI DMO maintains communication with the national level (in continental France) and regional DMO (one per island); Email, authority intranet, telephone and fax were used.

Question 51 Were any areas evacuated?		
Answer Options	**Response Percent**	**Response Count**
Yes	29.0%	9
No	61.3%	19
Not Applicable	12.9%	4
Comments:		4
	answered question	**31**
	skipped question	**5**

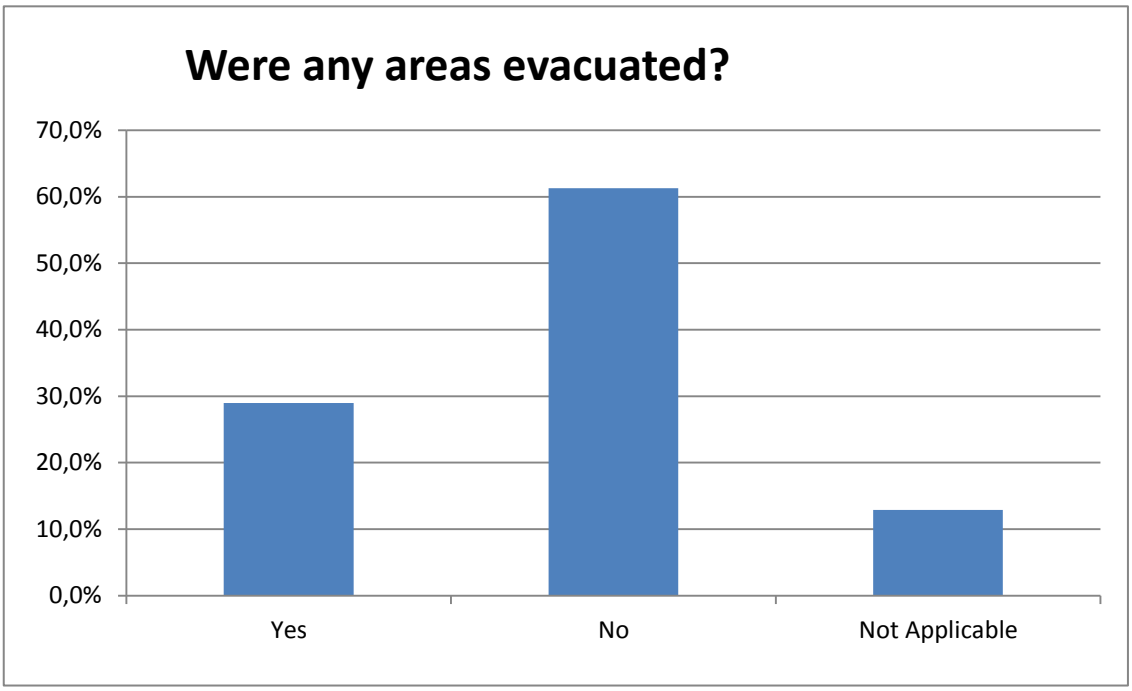

Figure I–50. Evacuated areas

The countries who answered **YES** to the above question were: Antigua and Barbuda, Barbados, British Virgin Islands, Dominican Republic, Puerto Rico, Saint Lucia, TURKS AND Caicos, US Virgin Islands, and Venezuela.

The countries who answered **NO** to the above question were: Anguilla, Aruba, Belize, Bermuda, Cayman Islands, Colombia, Dominica, Costa Rica, French West Indies, Guatemala, Guyana, Haiti, Honduras, Mexico, Montserrat, Nicaragua, Saint Vincent and The Grenadines, Suriname, and The Bahamas.

The countries who answered **NOT APPLICABLE** to the above question were: Brazil, Colombia, Jamaica, and Sint Maarten.

The comments received from the participant Tsunami National Contacts (TNC) were:

- US Virgin Islands: St. John only.
- Turks and Caicos: Five schools (4 primary and 1 high school) on the island of Grand Turk was evacuated to the highest points on the island.
- Saint Kitts-Nevis: 2 schools.
- Anguilla: We only tested the NEOC.

Question 52

Are tsunami inundation maps available for your Country/Territory?

Answer Options	Yes	No	Response Count
Local Scenario	10	19	29
Regional Scenario	7	21	28
Distant Scenario	7	22	29
Comments:			11
		answered question	**31**
		skipped question	**5**

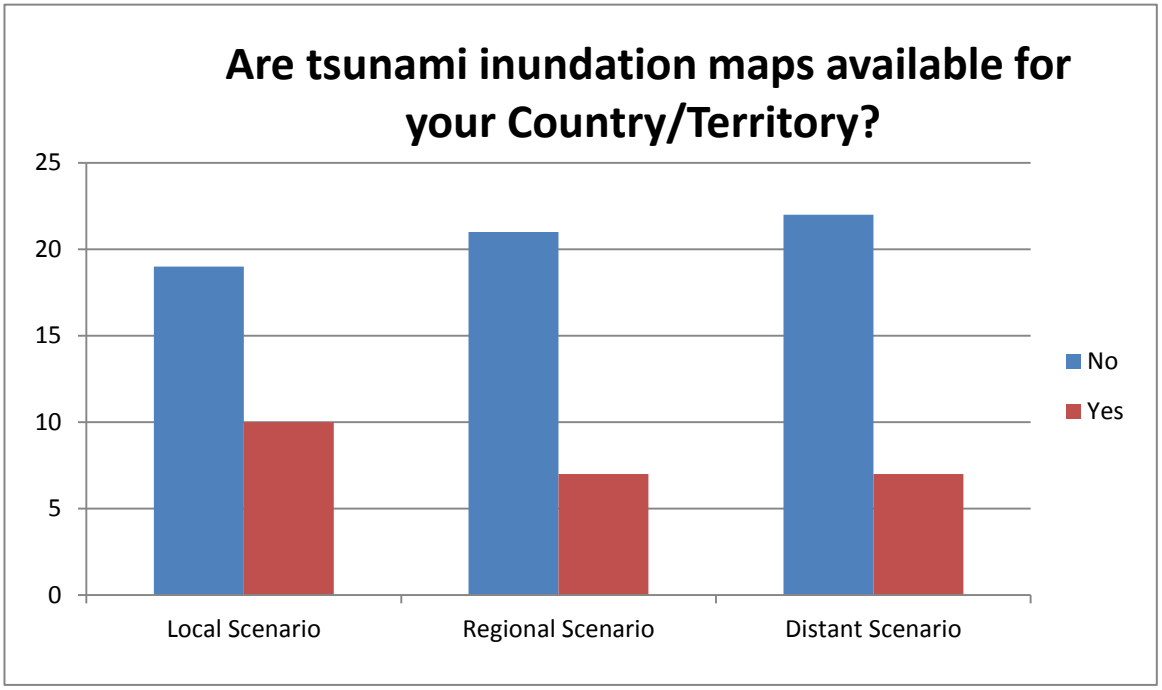

Figure I–51. Availability of tsunami inundation maps for your country/territory

The countries who answered **YES** to the above question were:

- Local Scenario: Anguilla, Aruba, British Virgin Islands, Colombia, Costa Rica, Dominican Republic, French West Indies, Haiti, Puerto Rico, and Venezuela.
- Regional Scenario: Anguilla, Bermuda, British Virgin Islands, Colombia, Costa Rica, Dominican Republic, French West Indies, and Venezuela.
- Distant Scenario: Anguilla, Antigua and Barbuda, Bermuda, British Virgin Islands, Colombia, Costa Rica, Dominican Republic, French West Indies, and Venezuela.

The countries who answered **NO** to the above question were:

- Local Scenario: Barbados, Belize, Brazil, Cayman Islands, Dominica, Guatemala, Guyana, Honduras, Jamaica, Mexico, Montserrat, Nicaragua, Saint Lucia, Sint Maarten, Saint Kitts and Nevis, Suriname, The Bahamas, Turks and Caicos, and US Virgin Islands.

- Regional Scenario: Aruba, Barbados, Belize, Brazil, Cayman Islands, Colombia, Dominica, Guatemala, Guyana, Haiti, Honduras, Mexico, Montserrat, Nicaragua, Puerto Rico, Saint Lucia, Sint Maarten, Saint Kitts and Nevis, Suriname, The Bahamas, and Turks and Caicos.

- Distant Scenario: Aruba, Barbados, Belize, Brazil, Cayman Islands, Colombia, Dominica, Costa Rica, Guatemala, Guyana, Haiti, Honduras, Mexico, Montserrat, Nicaragua, Puerto Rico, Saint Lucia, Sint Maarten, Saint Kitts and Nevis, Suriname, The Bahamas, and Turks and Caicos.

The comments received from the participant Tsunami National Contacts (TNC) were:

- Cayman Islands: We use the Storm surge inundation maps for rough guidance.

- Saint Vincent and the Grenadines: In process-trial stage.

- Venezuela: Only in three states.

- Guatemala: No se cuenca con mapas de inundación por tsunami.

- Turks and Caicos: However, storm surge and flood maps are available for some of the islands.

- Nicaragua: Solo para las costas del pacifico de Nicaragua.

- Colombia: Los mapas de inundación oficiales disponibles son para algunas poblaciones localizadas en la cuenca del Pacífico.

- Antigua and Barbuda: Better addressed by the TNC.

- Mexico: Only local scenarios for the Pacific Coast.

- French West Indies: The only official document is a single inundation map based on maximizing scenarios, available for Martinique and Guadeloupe (St Martin and St Barth are missing).

- Barbados: We utilized 100yr storm surge maps.

Question 53

Did your tsunami warning focal point run any tsunami numerical models tsunami during the exercise (e.g., Deep-ocean propagation and/or coastal inundation models?)

Answer Options	Response Percent	Response Count
Yes	16.1%	5
No	64.5%	20
Not Applicable	19.4%	6
Comments:		4
	answered question	**31**
	skipped question	**5**

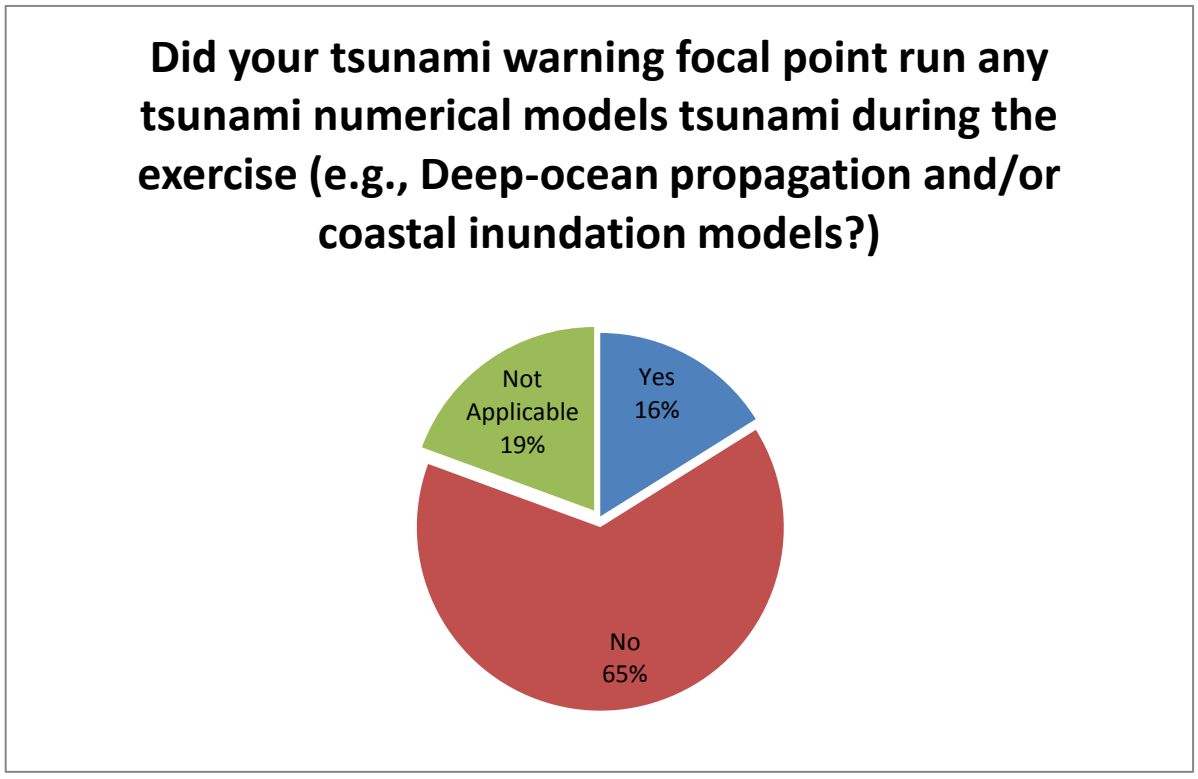

Figure I–52. Execution of tsunami numerical models during the exercise by the TWFP

The countries who answered **YES** to the above question were: Aruba, Colombia, Honduras, Saint Vincent and The Grenadines, and Venezuela.

The countries who answered **NO** to the above question were: Anguilla, Antigua and Barbuda, Barbados, Belize, Bermuda, Cayman Islands, Dominica, Costa Rica, Dominican Republic, French West Indies, Guatemala, Haiti, Mexico, Nicaragua, Puerto Rico, Saint Kitts and Nevis, Suriname, The Bahamas, Turks and Caicos, and US Virgin Islands.

The countries who answered **NOT APPLICABLE** to the above question were: Brazil, British Virgin Islands, Jamaica, Montserrat, Saint Lucia, Sint Maarten.

The comments received from the participant Tsunami National Contacts (TNC) were:

- Bermuda: We do not have any locally.
- Saint Vincent and the Grenadines: The day before.
- Turks and Caicos: A capability does not exist in the TCI. Training is needed in this area.
- Aruba: We ran commit before the exercise to evaluate the threat level.

Question 54

Did your country/territory assess the tsunami threat during the exercise? Select from the following list.

Answer Options	Yes	No	Not Applicable	Response Count
National/State tsunami experts	13	5	4	22
National/State tsunami coordination committee	9	5	7	21
National/State tsunami hsitorical database	7	9	6	22
NOAA NGDC/WDC-MGG tsunami historical database (web)	5	11	4	20
TsuDig historical database GIS tool (NGDC/ITIC offline)	3	10	4	17
National/State pre-computed tsunami scenarios	6	8	6	20
National/State tsunami forecasts	4	9	5	18
International tsunami forecasts. Note source of forecasts (PTWC, NTWC) in Comments.	15	5	2	22
Communication with outside sources (such as ITIC, media, other).	6	12	3	21
Review sea level data availability (IOC Sea Level Monitoring Facility, Tide Tool, etc)	8	9	4	21
Review seismic data availability (IRIS, PRSN, etc)	8	9	2	19
Review seismic information tools (USGS, CISN, PRSN)	8	10	2	20
Engage with social media (Facebook, Twitter, Google Chat, etc)	9	8	3	20
			answered question	**28**
			skipped question	**8**

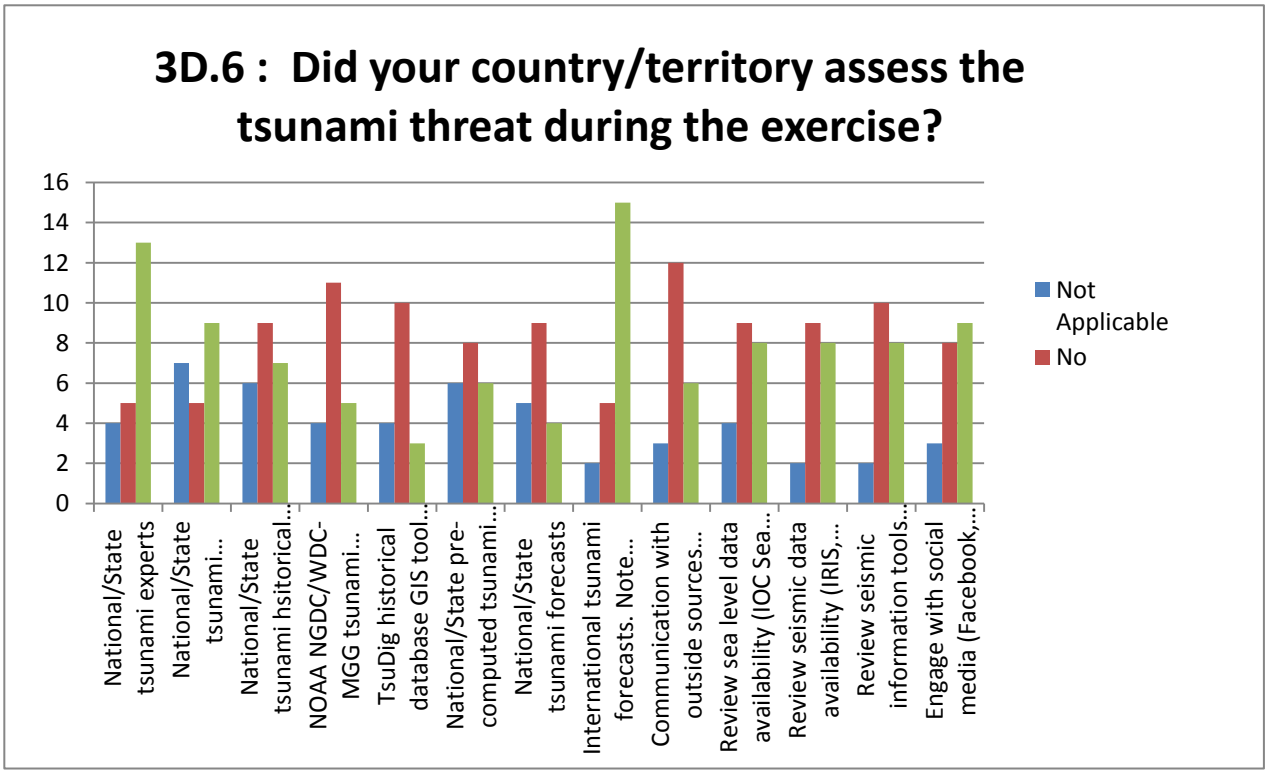

Figure I–53. Assessment of tsunami threat during the exercise by country/territory

The countries who answered **YES** to the above question were:

- National/State tsunami experts: Anguilla, Antigua and Barbuda, Aruba, Barbados, Bermuda, Colombia, Costa Rica, French West Indies, Haiti, Jamaica, Mexico, Nicaragua, and Venezuela.
- National/State tsunami coordination committee: Anguilla, Barbados, Dominica, Dominican Republic, Jamaica, Mexico, Nicaragua, Saint Lucia, and Venezuela.
- National/State tsunami hsitorical database: Bermuda, Colombia, Costa Rica, Dominican Republic, French West Indies, Saint Vincent and The Grenadines, and Venezuela.
- NOAA NGDC/WDC-MGG tsunami historical database (web): Colombia, Costa Rica, Dominican Republic, Honduras, and Venezuela.
- TsuDig historical database GIS tool (NGDC/ITIC offline): Aruba, Colombia, and Dominican Republic.
- National/State pre-computed tsunami scenarios: Aruba, Bermuda, Colombia, Dominica, Honduras, and Venezuela.
- National/State tsunami forecasts: Barbados, Dominica, Dominican Republic, and Honduras.
- International tsunami forecasts. Note source of forecasts (PTWC, NTWC) in Comments: Anguilla, Antigua and Barbuda, Bermuda, British Virgin Islands,

Colombia, Costa Rica, Dominican Republic, French West Indies, Honduras, Mexico, Nicaragua, Puerto Rico, The Bahamas, US Virgin Islands, and Venezuela.

- Communication with outside sources (such as ITIC, media, other): Anguilla, Dominican Republic, Honduras, Saint Kitts and Nevis, Turks and Caicos, and US Virgin Islands.

- Review sea level data availability (IOC Sea Level Monitoring Facility, Tide Tool, etc): Aruba, Bermuda, Colombia, Dominican Republic, French West Indies, Mexico, Nicaragua, and Venezuela.

- Review seismic data availability (IRIS, PRSN, etc): Antigua and Barbuda, Aruba, Colombia, French West Indies, Mexico, Dominican Republic, Nicaragua, Puerto Rico, and US Virgin Islands.

- Review seismic information tools (USGS, CISN, PRSN): Bermuda, Colombia, Dominican Republic, French West Indies, Mexico, Nicaragua, US Virgin Islands, and Venezuela.

- Engage with social media (Facebook, Twitter, Google Chat, etc): Aruba, Bermuda, Colombia, Dominica, Costa Rica, Puerto Rico, Turks and Caicos, US Virgin Islands, and Venezuela.

The countries who answered **NO** to the above question were:

- National/State tsunami experts: Belize, Dominica, Dominican Republic, Puerto Rico and US Virgin Islands.

- National/State tsunami coordination committee: Aruba, Belize, Colombia, Puerto Rico, and US Virgin Islands.

- National/State tsunami historical database: Aruba, Barbados, Belize, Dominica, Jamaica, Mexico, Nicaragua, Puerto Rico, and US Virgin Islands.

- NOAA NGDC/WDC-MGG tsunami historical database (web): Anguilla, Aruba, Barbados, Bermuda, Cayman Islands, Dominica, French West Indies, Mexico, Nicaragua, Puerto Rico, and US Virgin Islands.

- TsuDig historical database GIS tool (NGDC/ITIC offline): Barbados, Bermuda, Cayman Islands, Dominica, Costa Rica, French West Indies, Mexico, Nicaragua, Puerto Rico and US Virgin Islands.

- National/State pre-computed tsunami scenarios: Barbados, Cayman Islands, Costa Rica, Dominican Republic, French West Indies, Mexico, Nicaragua, and Puerto Rico.

- National/State tsunami forecasts: Aruba, Barbados, Belize, Cayman Islands, and Dominica.

- International tsunami forecasts. Note source of forecasts (PTWC, NTWC) in Comments: Aruba, Barbados, Belize, Cayman Islands, and Dominica.

- Communication with outside sources (such as ITIC, media, other): Aruba, Barbados, Belize, Cayman Islands, Dominica, Colombia, Costa Rica, French West Indies, Mexico, Nicaragua, Puerto Rico and The Bahamas.

- Review sea level data availability (IOC Sea Level Monitoring Facility, Tide Tool, etc): Barbados, Belize, Cayman Islands, Dominica, Costa Rica, Puerto Rico, Saint Vincent and The Grenadines, The Bahamas, and US Virgin Islands.

- Review seismic data availability (IRIS, PRSN, etc): Barbados, Bermuda, Cayman Islands, Dominica, Costa Rica, Dominican Republic, Saint Vincent and The Grenadines, The Bahamas, and Turks and Caicos.

- Review seismic information tools (USGS, CISN, PRSN): Aruba, Barbados, Belize, Cayman Islands, Dominica, Costa Rica, Puerto Rico, Saint Vincent and The Grenadines, The Bahamas, and Turks and Caicos.

- Engage with social media (Facebook, Twitter, Google Chat, etc): Barbados, Cayman Islands, Dominican Republic, French West Indies, Mexico, Nicaragua, Saint Vincent and The Grenadines, and The Bahamas.

The countries who answered **NOT APPLICABLE** to the above question were:

- National/State tsunami experts: Cayman Islands, Guatemala, Sint Maarten, and The Bahamas.

- National/State tsunami coordination committee: Bermuda, Cayman Islands, Costa Rica, French West Indies, Guatemala, Sint Maarten, and The Bahamas.

- National/State tsunami historical database: Anguilla, Cayman Islands, Guatemala, Sint Maarten, The Bahamas, and Turks and Caicos.

- NOAA NGDC/WDC-MGG tsunami historical database (web): Guatemala, Sint Maarten, The Bahamas, and Turks and Caicos.

- TsuDig historical database GIS tool (NGDC/ITIC offline): Anguilla, Guatemala, Sint Maarten, The Bahamas, Turks and Caicos, and US Virgin Islands.

- National/State pre-computed tsunami scenarios: Bermuda, Guatemala, Sint Maarten, The Bahamas, and US Virgin Islands.

- National/State tsunami forecasts: Bermuda, Guatemala, and Sint Maarten, The Bahamas, and US Virgin Islands.

- International tsunami forecasts. Note source of forecasts (PTWC, NTWC) in Comments: Guatemala and Sint Maarten.

- Communication with outside sources (such as ITIC, media, other): Bermuda, Guatemala, and Sint Maarten.

- Review sea level data availability (IOC Sea Level Monitoring Facility, Tide Tool, etc): Anguilla, Guatemala, Sint Maarten, and Turks and Caicos.

- Review seismic data availability (IRIS, PRSN, etc): Guatemala and Sint Maarten.

- Review seismic information tools (USGS, CISN, PRSN): Guatemala and Sint Maarten.

- Engage with social media (Facebook, Twitter, Google Chat, etc): Anguilla, Guatemala, and Sint Maarten.

Question 55

Was a tsunami warning and/or information issued to the public?

Answer Options	Response Percent	Response Count
Yes	37.5%	12
No	53.1%	17
Not Applicable	9.4%	3
Comments:		5
	answered question	**32**
	skipped question	**4**

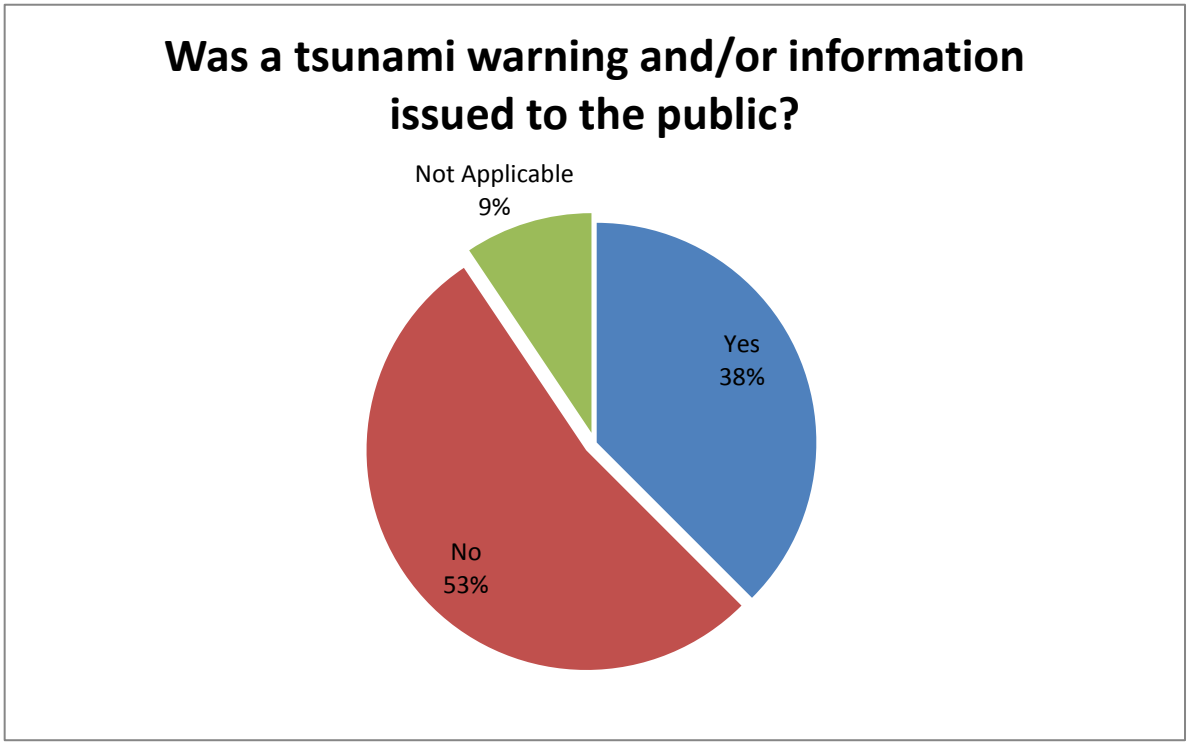

Figure I–54. Transmission of tsunami warning and information to the public

The countries who answered **YES** to the above question were: Anguilla, Barbados, Bermuda, British Virgin Islands, Cayman Islands, Dominican Republic, Jamaica, Puerto Rico, The Bahamas, Turks and Caicos, US Virgin Islands, and Venezuela.

The countries who answered **NO** to the above question were: Antigua and Barbuda, Aruba, Belize, Colombia, Dominica, Costa Rica, French West Indies, Guatemala, Guyana, Haiti, Honduras, Mexico, Montserrat, Nicaragua, Saint Lucia, Saint Kitts and Nevis, and Suriname.

The countries who answered **NOT APPLICABLE** to the above question were: Brazil, Saint Vincent and the Grenadines, and Sint Maarten.

The comments received from the participant Tsunami National Contacts (TNC) were:

- Cayman Islands: The warning was issued to the media houses. They were instructed not to read that over the air.
- Honduras: A lo interno de COPECO.
- Bermuda: A watch was issued, and then this was upgraded to a warning once confirmation of a Tsunami wave being generated was received as per message #3.
- Guatemala: Comunicación solo entre Agencia de Respuesta y Agencia de Alerta.
- Jamaica: This was issued as an exercise message.

Question 56

If you answered yes to Q 3E.1, was the tsunami warning and/or information issued in a timely manner to the public?

Answer Options	Response Percent	Response Count
Yes	42.3%	11
No	3.8%	1
Not Applicable	53.8%	14
Comments:		2
answered question		**26**
skipped question		**10**

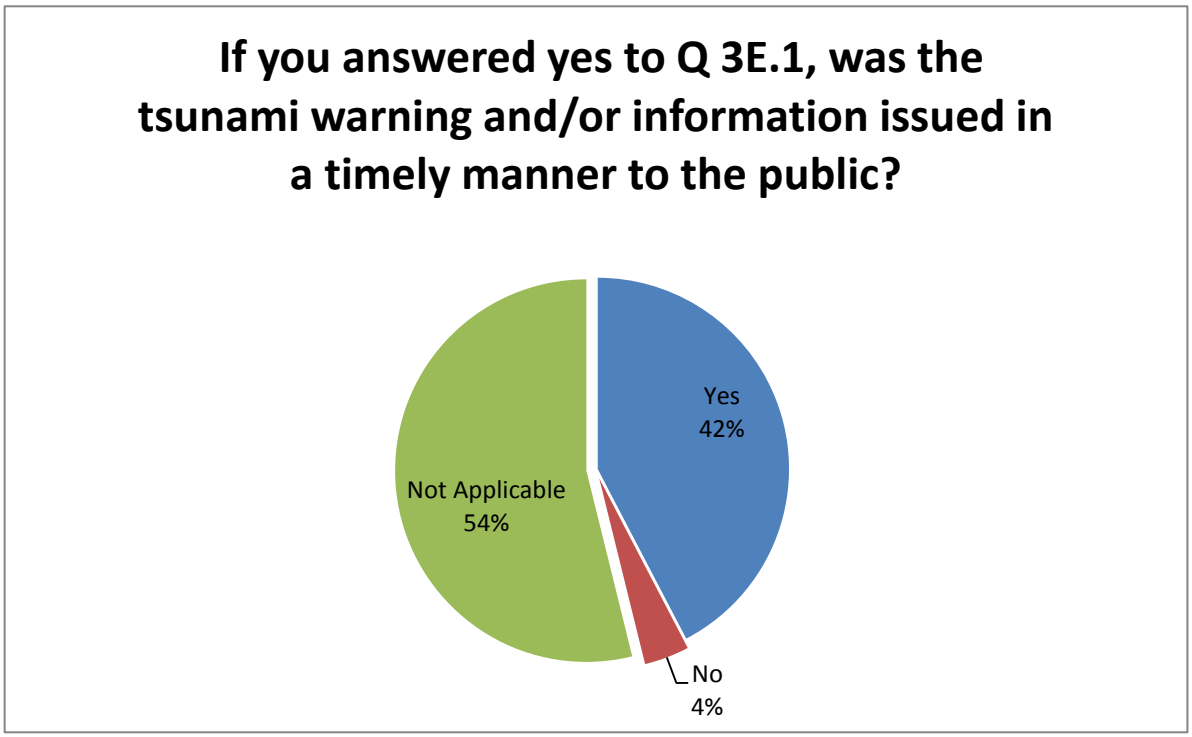

Figure I–55. Tsunami warning and/or information issued in a timely manner to the public

The countries who answered **YES** to the above question were: Anguilla, Barbados, Bermuda, British Virgin Islands, Cayman Islands, Dominican Republic, Puerto Rico, The Bahamas, Turks and Caicos, US Virgin Islands, and Venezuela.

The countries who answered **NO** to the above question were: Honduras.

The countries who answered **NOT APPLICABLE** to the above question were: Aruba, Belize, Brazil, Colombia, Dominica, French West Indies, Haiti, Jamaica, Mexico, Montserrat, Nicaragua, Saint Vincent and The Grenadines, Sint Maarten, and Saint Kitts and Nevis.

The comments received from the participant Tsunami National Contacts (TNC) were:

- Bermuda: We believe so - from receipt of message #3 to dissemination of warning to public via web/TV took less than 25mins.

- Turks and Caicos: For the most part.

Question 57

If you answered yes to Q3E.1, how was the warning/information communicated to the public?

Answer Options	Response Percent	Response Count
Telephone	33.3%	4
SMS	25.0%	3
Cell/mobile phone broadcast	25.0%	3
Radio	75.0%	9
TV	66.7%	8
Email	41.7%	5
Twitter	33.3%	4
Facebook	41.7%	5
RSS	0.0%	0
Websites	25.0%	3
Sirens	41.7%	5
Public Announcement systems	25.0%	3
Police	58.3%	7
Public call centre	8.3%	1
Door-to-door announcements	8.3%	1
Other methods (specify below)	50.0%	6
Electronic Billboards	0.0%	0
Other Methods:		10
	answered question	**12**
	skipped question	**24**

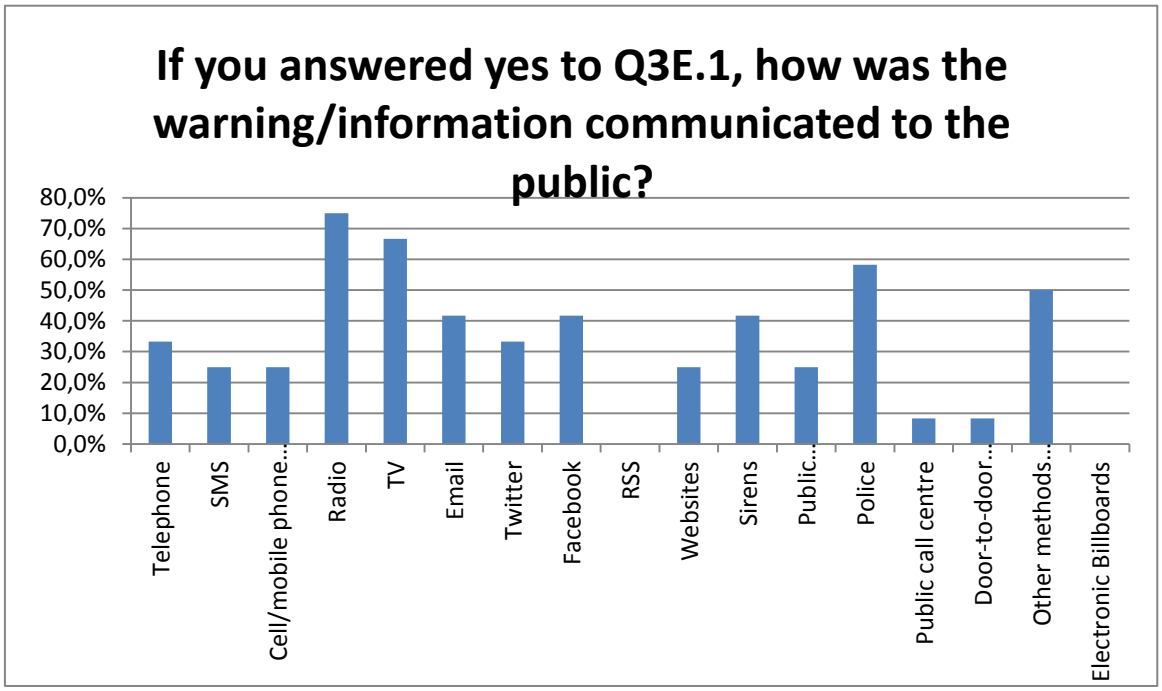

Figure I–56. Methods of sending the warning/information to the public

The countries who answered to the above question were:

- Telephone: Barbados, Bermuda, Dominican Republic, and US Virgin Islands.
- SMS: British Virgin Islands, Turks and Caicos, and US Virgin Islands.
- Cell/mobile phone broadcast: Dominican Republic, Turks and Caicos, and US Virgin Islands.
- Radio: British Virgin Islands, Cayman Islands, Dominican Republic, Puerto Rico, The Bahamas, Turks and Caicos, US Virgin Islands, and Venezuela.
- TV: Bermuda, British Virgin Islands, Cayman Islands, Dominican Republic, Puerto Rico, The Bahamas, US Virgin Islands, and Venezuela.
- Email: Anguilla, Barbados, The Bahamas, Turks and Caicos, and Venezuela.
- Twitter: Dominican Republic, Puerto Rico, Turks and Caicos, and US Virgin Islands.
- Facebook: British Virgin Islands, Cayman Islands, Puerto Rico, Turks and Caicos, and US Virgin Islands.
- RSS: 0
- Websites: Bermuda, British Virgin Islands, and Dominican Republic.
- Sirens: British Virgin Islands, Dominican Republic, Puerto Rico, US Virgin Islands, and Venezuela.
- Public Announcement systems: Turks and Caicos, US Virgin Islands, and Venezuela.
- Police: Barbados, British Virgin Islands, Cayman Islands, Dominican Republic, Turks and Caicos, US Virgin Islands, and Venezuela.
- Public call centre: US Virgin Islands.
- Door-to-door announcements: Venezuela.
- Other methods (specify below): Anguilla, Barbados, Jamaica, The Bahamas, Turks and Caicos and US Virgin Islands.
- Electronic Billboards: 0
- Other Methods:
    - Antigua and Barbuda: Better addressed by the TNC.
    - Aruba: Fire Department.
    - Barbados: Police , Fire Services, Barbados Defence Force, Coastguard, Barbados Citizen Band Radio Association, Amateur Radio Society Of Barbados, District Emergency Organisation, Public Schools, Tourism Authority And Other Members Of Tourism Industry, Ministry Of Education, Coastal Zone Management Unit.

- Bermuda:In addition to the EMO (NDC) and Police (COMOPS), the Marine Operations Centre (MAROPS) participated, as well as Air Traffic Control, the Department of Airport Operations (DAO) and the Department of Civil Aviation (DCA), although to a lesser extent. Other entities were invited to participate such as Bermuda Hospitals Board (BHB), Bermuda Regiment and the Department of Parks (Lifeguard Service).

- British Virgin Islands: Adina Donovan Home Alexandrina Maduro Primary BVI Health Services Authority BVI Ports Authority BVI Tourist Board Central Administration Complex Claudia Creque School Complaints Commission Gender Affair Unit Government Information Services Governor's Office H. Lavity Stoutt Community College Harneys House of Assembly Internal Audit Jost Van Dyke School Law Reform Commission Midland Trust Moorings(Sunsail, Footloose) National Parks Trust Ogier Public Works Department Royal Virgin Islands Police Force Sand Lane Center Social Security Board St. Georges Primary Virgin Islands Fire & Rescue Services Virgin Gorda Administration Building Water & Sewerage Department.

- Cayman Islands: All government department that constitute the national emergency response mechanism.

- Colombia: Dirección General Marítima - DIMAR, Servicio Geológico de Colombia, Instituto de Hidrología, Meteorología y Estudios Ambientales IDEAM, Comisión Colombiana del Océano CCO.

- Dominica: Castle Bruce Health District - North East of Dominica Massacre Primary School- Government School Dominica Air and Sea Port Authority.

- Costa Rica: Port Management.

- Dominican Republic: A part of government agencies, participated in the community of Puerto Plata, some private institutions.

- French West Indies: Emergency services: health, coast-guard equivalent, fire service. Network companies or services: electricity, water, road traffic, telephone, oil plant Eduction office (rectorate) Scientific expertise.

- Guatemala: Base Naval Del Atlantico (Prueba De Comuncaciones Con Agenciad E Respuesta).

- Nicaragua: Participó El Ministerio De Salud (Minsa), Ministerio De Educación (Mined), Empresa Nacional De Puertos (Epn), Las Cuales Son Instituciones De Gobierno.

- Puerto Rico: Government and Private Sector.

- Saint Lucia: Schools Banks Restaurants Petrol Stations.

- Saint Vincent and The Grenadines: Meteorological Office, Coast Guard, Power Company, Fisheries, Chief Engineer's Office, Red Cross.

- Saint Kitts and Nevis: Government Ministries Statutory Entities Red Cross Society Amateur Radio Society National Trust

- The Bahamas: Bahamas Information Services Bahamas Telecommunications Company

- Turks and Caicos: Ministry of Education, Youth and Sports Education Department Ministry of Government Support Services Public Works Department TCI Red Cross TCI Airport Authority Ministry of Health Emergency Medical Services Fire and Rescue Volunteers

- Venezuela: PDVSA, CORPOELEC, Hotel And Tourism Company, Ministerio Of Education, Company Naviera Of Ferries Margarita, ARMY VENEZOLANO, POLICIA, NAVY FIREMAN, INEA, DHN

Question 58

The public was officially notified prior to the scenario wave arrival time.

Answer Options	Response Percent	Response Count
Yes	41.9%	13
No	22.6%	7
Not Applicable	38.7%	12
Comments:		2
	answered question	**31**
	skipped question	**5**

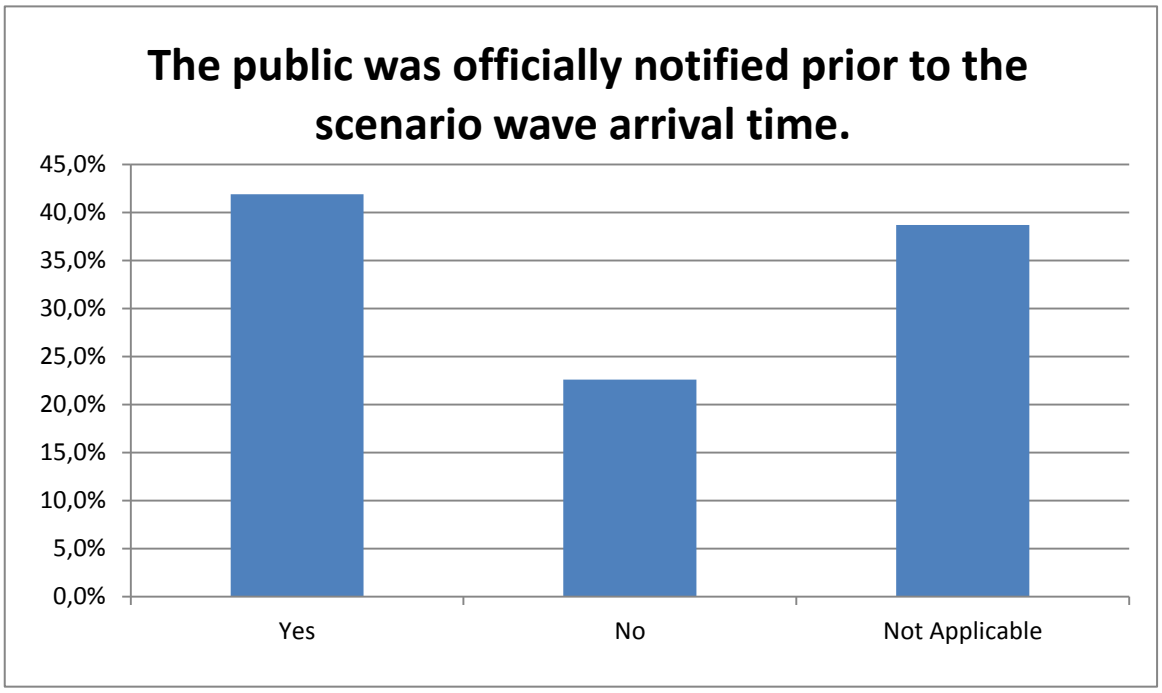

Figure I– 57. Official Notificationsent to the public before the scenario wave arrival time

The countries who answered **YES** to the above question were: Anguilla, Barbados, Bermuda, British Virgin Islands, Cayman Islands, Costa Rica, Dominican Republic, Jamaica, Puerto Rico, Saint Kitts and Nevis, Turks and Caicos, US Virgin Islands, and Venezuela.

The countries who answered **NO** to the above question were: Belize, Colombia, Dominica, Guatemala, Honduras, Saint Lucia, and The Bahamas.

The countries who answered **NOT APPLICABLE** to the above question were: Aruba, Brazil, Dominica, French West Indies, Guyana, Haiti, Mexico, Montserrat, Nicaragua, Saint Vincent and The Grenadines, Sint Maarten, and Suriname.

The comments received from the participant Tsunami National Contacts (TNC) were:

- Turks and Caicos: Via SMS broadcast and Email.
- Saint Kitts and Nevis: Via news releases.

Question 59

In addition to the TWFP/NDMO, did other government and private sector participate? If yes, please list in comments section**.**

Answer Options	Response Percent	Response Count
Yes	63.3%	19
No	26.7%	8
Not Applicable	10.0%	3
Comments:		20
answered question		**30**
skipped question		**6**

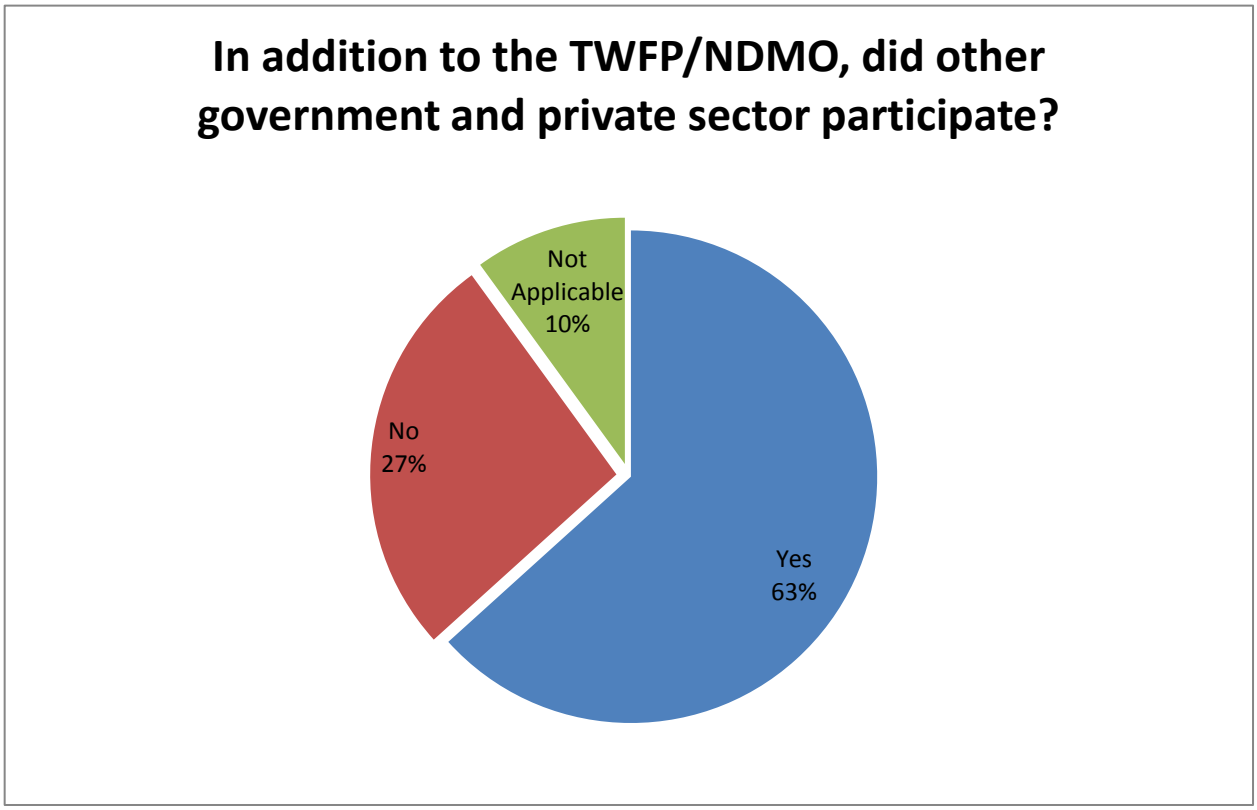

Figure I–58. Participation of government and private sector to the Exercise

The countries who answered **YES** to the above question were: Aruba, Barbados, Bermuda, British Virgin Islands, Cayman Islands, Colombia, Dominica, Costa Rica, Dominican Republic, French West Indies, Guatemala, Nicaragua, Puerto Rico, Saint Lucia, Saint Vincent and The Grenadines, The Bahamas, Turks and Caicos, US Virgin Islands, and Venezuela.

The countries who answered **NO** to the above question were: Anguilla, Belize, Haiti, Honduras, Mexico, Montserrat, Saint Kitts and Nevis, and Suriname.

The countries who answered **NOT APPLICABLE** to the above question were: Brazil, Jamaica, and Sint Maarten.

The comments received from the participant Tsunami National Contacts (TNC) were:

- Cayman Islands: All government departments that constitute the national emergency response mechanism.

- Bermuda: In addition to the EMO (NDC) and Police (COMOPS), the Marine Operations Centre (MAROPS) participated, as well as Air Traffic Control, the Department of Airport Operations (DAO) and the Department of Civil Aviation (DCA), although to a lesser extent. Other entities were invited to participate such as Bermuda Hospitals Board (BHB), Bermuda Regiment and the Department of Parks (Lifeguard Service).

- Saint Vincent and the Grenadines: Meteorological Office, Coast Guard, Power Company, Fisheries, Chief Engineer's Office, Red Cross.

- Bahamas: Bahamas Information Services Bahamas Telecommunications Company

- British Virgin Islands: Adina Donovan Home Alexandrina Maduro Primary BVI Health Services Authority BVI Ports Authority BVI Tourist Board Central Administration Complex Claudia Creque School Complaints Commission Gender Affair Unit Government Information Services Governor's Office H. Lavity Stoutt Community College Harneys House of Assembly Internal Audit Jost Van Dyke School Law Reform Commission Midland Trust Moorings(Sunsail, Footloose) National Parks Trust Ogier Public Works Department Royal Virgin Islands Police Force Sand Lane Center Social Security Board St. Georges Primary Virgin Islands Fire & Rescue Services Virgin Gorda Administration Building Water & Sewerage Department

- Venezuela: Pdvsa, Corpoelec, Hotel And Tourism Company, Ministerio of Education, Company Naviera Of Ferries Margarita, Army Venezolano, Policia, Navy Fireman, Inea, Dhn.

- Guatemala: Base Naval del Atlantico (prueba de comuncaciones con agencia de respuesta).

- Turks and Caicos: Ministry of Education, Youth and Sports Education Department Ministry of Government Support Services Public Works Department TCI Red Cross TCI Airport Authority Ministry of Health Emergency Medical Services Fire and Rescue Volunteers.

- Nicaragua: Participó el Ministerio De Salud (Minsa), Ministerio de Educación (Mined), Empresa Nacional de Puertos (Epn), las cuales son instituciones de gobierno.

- Dominica: Castle Bruce Health District - North East of Dominica Massacre Primary School- Government School Dominica Air and Sea Port Authority.

- Saint Kitts and Nevis: Government Ministries Statutory Entities Red Cross Society Amateur Radio Society National Trust.

- Colombia: Dirección General Marítima - DIMAR, Servicio Geológico de Colombia, Instituto de Hidrología, Meteorología y Estudios Ambientales IDEAM, Comisión Colombiana del Océano CCO.

- Dominican Republic: A part of government agencies, participated in the community of Puerto Plata, some private institutions.

- Antigua and Barbuda: Better addressed by the TNC.

- French West Indies: Emergency services: health, coast-guard equivalent, fire service. Network companies or services: electricity, water, road traffic, telephone, oil plant Education office (rectorate) scientific expertise.

- Saint Lucia: Schools Banks Restaurants Petrol Stations.

- Puerto Rico: Government and Private Sector.

- Costa Rica: Port management.

- Barbados: Police , Fire Services, Barbados Defence Force, Coastguard, Barbados Citizen Band Radio Association, Amateur Radio Society of Barbados, District Emergency Organization, Public Schools, Tourism Authority and other Members of Tourism Industry, Ministry of Education, Coastal Zone Management Unit.

- Aruba: Fire Department.

Question 60

The Country (TNC/TWFP/NDEMO) has a better understanding of the responsibilities and roles in tsunami emergencies.

Answer Options	Response Percent	Response Count
Yes	93.3%	28
No	0.0%	0
Not Applicable	6.7%	2
Comments:		5
answered question		**30**
skipped question		**6**

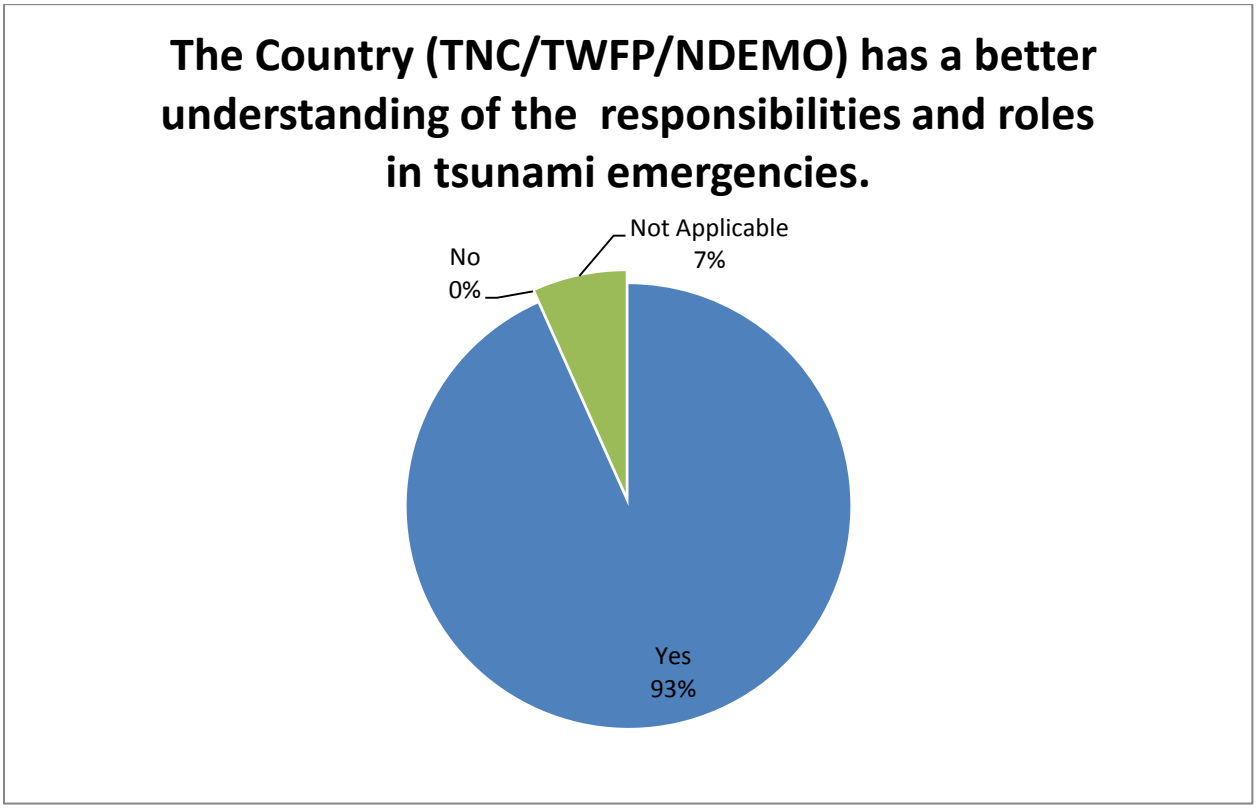

Figure I–59. Understandinfg of the responsabilities and roles in tsunami emergencies by the country (TNC/TWFP/NDEMO)

The countries who answered **YES** to the above question were: Anguilla, Barbados, Bermuda, British Virgin Islands, Cayman Islands, Colombia, Dominica Costa Rica, Dominican Republic, French West Indies, Guatemala, Nicaragua, Puerto Rico, Saint Lucia, Saint Vincent and The Grenadines, The Bahamas, Turks and Caicos, US Virgin Islands, and Venezuela.

The countries who answered **NO** to the above question were: N/A.

The countries who answered **NOT APPLICABLE** to the above question were: Brazil and Sint Maarten.

The comments received from the participant Tsunami National Contacts (TNC) were:

- Cayman Islands: This improves with each exercise.
- Bermuda: More particularly the EMO and the NDC.
- Turks and Caicos: Now a matter of developing the appropriate plans and SOPs as it relates to tsunami hazards.
- Antigua and Barbuda: Better addressed by the TNC.
- French West Indies: All know that they have to be better prepared.

Question 61		
Gaps in capability and capacity have been identified.		
Answer Options	**Response Percent**	**Response Count**
Yes	86.2%	25
No	3.4%	1
Not Applicable	10.3%	3
Comments:		6
	answered question	**29**
	skipped question	**7**

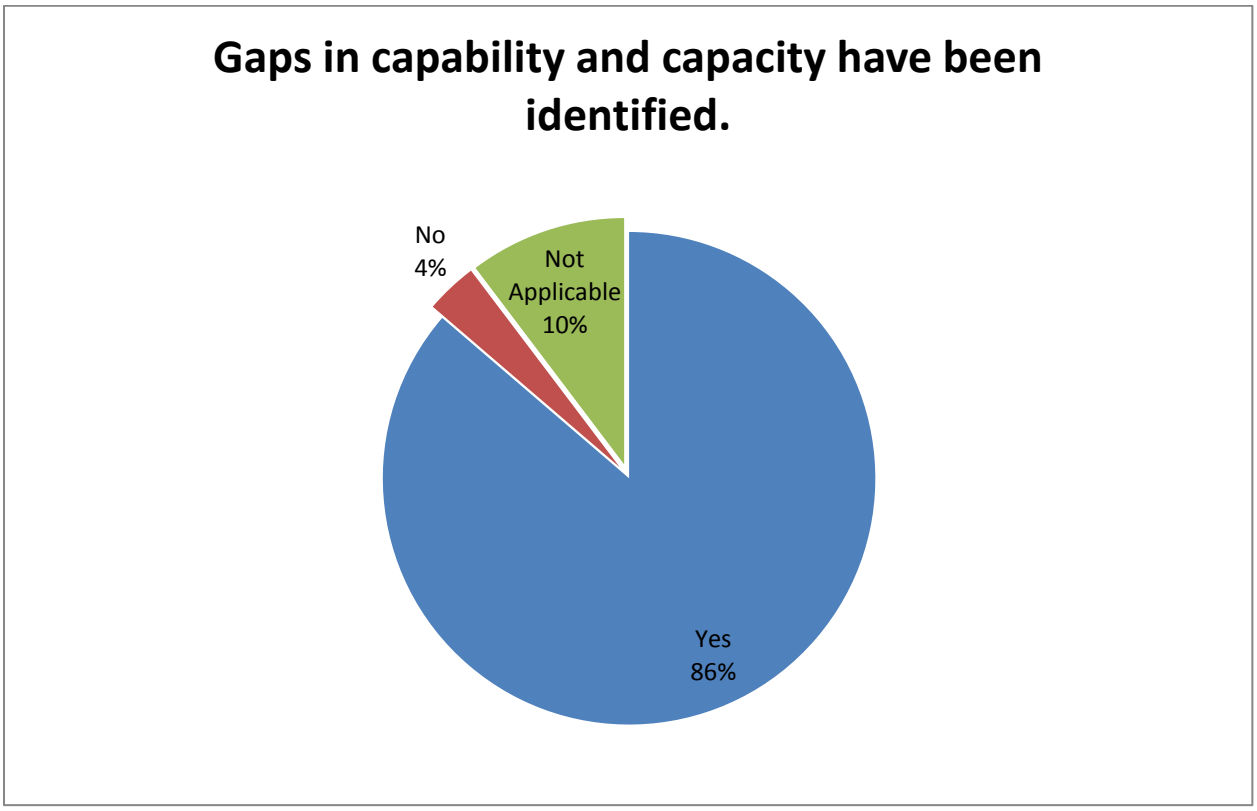

Figure I–60. Gaps idenfication in capability and capacity

The countries who answered **YES** to the above question were: Anguilla, Aruba, Barbados, Bermuda, British Virgin Islands, Cayman Islands, Colombia, Dominica, Costa Rica, Dominican Republic, French West Indies, Haiti, Honduras, Jamaica, Mexico, Montserrat, Puerto Rico, Saint Lucia, Saint Vincent and The Grenadines, Saint Kitts and Nevis, Suriname, The Bahamas, Turks and Caicos, US Virgin Islands, and Venezuela.

The countries who answered **NO** to the above question were: Nicaragua.

The countries who answered **NOT APPLICABLE** to the above question were: Belize, Brazil, and Sint Maarten.

The comments received from the participant Tsunami National Contacts (TNC) were:

- Cayman Islands: Changes in notification procedures will be made.
- Bermuda: There is plenty of work that needs to be done - e.g. setting up of SOPs, development of evacuation zone maps, public education (especially in schools) etc...
- Turks and Caicos: Primary gaps include: - communication (radio equipment not fully operational) - lack of alerting mechanisms (i.e sirens) which can be heard throughout the whole island.
- Nicaragua: Todo fue establecido de acuerdo al plan de realización del ejercicio.
- Antigua and Barbuda: Better addressed by the TNC.
- French West Indies: Transmission limitation, 24/7 DMO Lack of inundation maps, evacuation plans, pre-computed scenarios, draft of the SOPs for the different cases (local, regional, trans-oceanic tsunamis).

Question 62

The Country/Territory enhanced the relationships among the Tsunami Warning System stakeholders as a result of the exercise.

Answer Options	Response Percent	Response Count
Yes	86.7%	26
No	3.3%	1
Not Applicable	10.0%	3
Comments:		3
answered question		**30**
skipped question		**6**

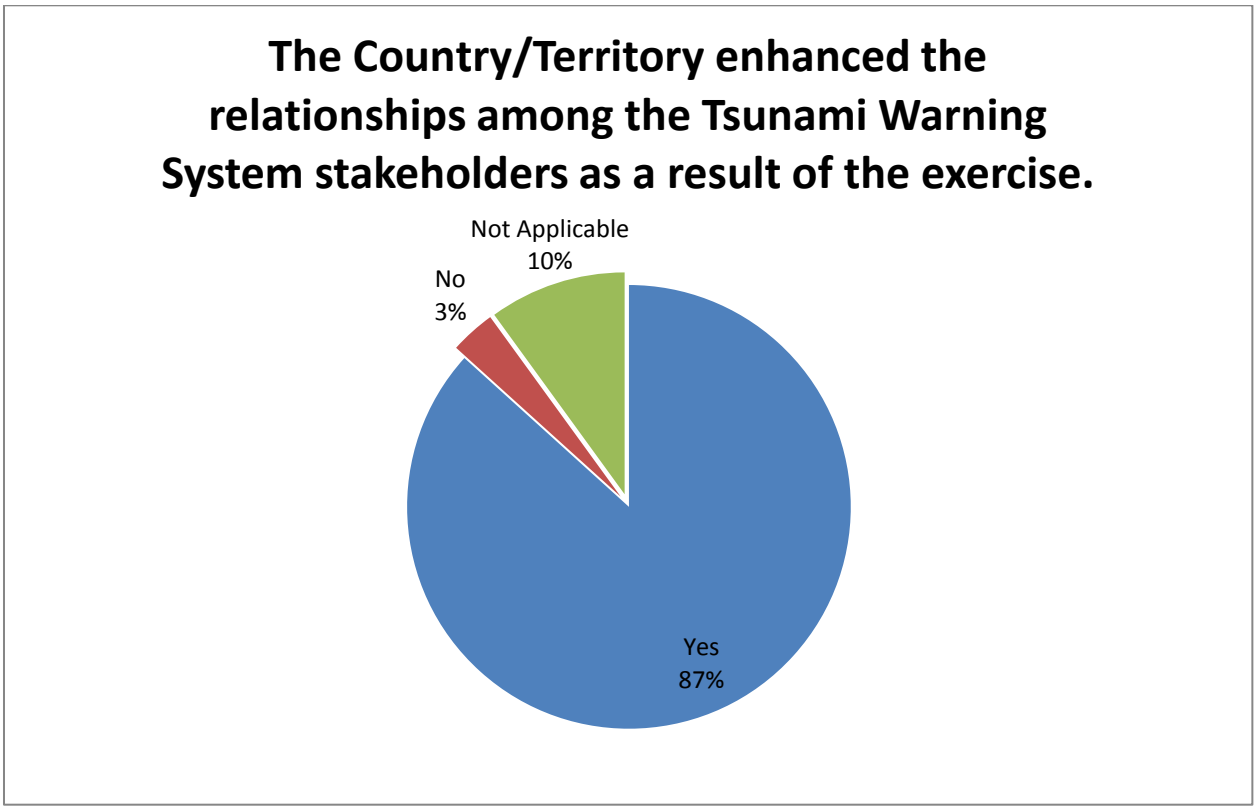

Figure I–61. As a result of the exercise, the relationships among the TWS stakeholders and the country/territory were enhanced.

The countries who answered **YES** to the above question were: Anguilla, Antigua and Barbuda, Aruba, Barbados, Bermuda, British Virgin Islands, Cayman Islands, Colombia, Dominica, Costa Rica, Dominican Republic, French West Indies, Guatemala, Haiti, Honduras, Mexico, Montserrat, Nicaragua, Puerto Rico, Saint Lucia, Saint Vincent and The Grenadines, Saint Kitts and Nevis, The Bahamas, Turks and Caicos, US Virgin Islands, and Venezuela.

The countries who answered **NO** to the above question were: Belize.

The countries who answered **NOT APPLICABLE** to the above question were: Brazil, Jamaica, and Sint Maarten.

The comments received from the participant Tsunami National Contacts (TNC) were:

- Bermuda: Some stakeholders have invited BWS to give further presentations and are looking into developing their SOPs with direct relation to Tsunami Warning response.

- Nicaragua: A nivel local.

- French West Indies: It was the first time that all the stakeholders were involved in the exercise, and they begin to better understand the threat, the national alert system and the way to react together.

Question 63 News media participated and covered the exercise (please provide electronic links if appropriate)		
Answer Options	**Response Percent**	**Response Count**
Yes	53.3%	16
No	33.3%	10
Not Applicable	13.3%	4
Comments:		11
	answered question	**30**
	skipped question	**6**

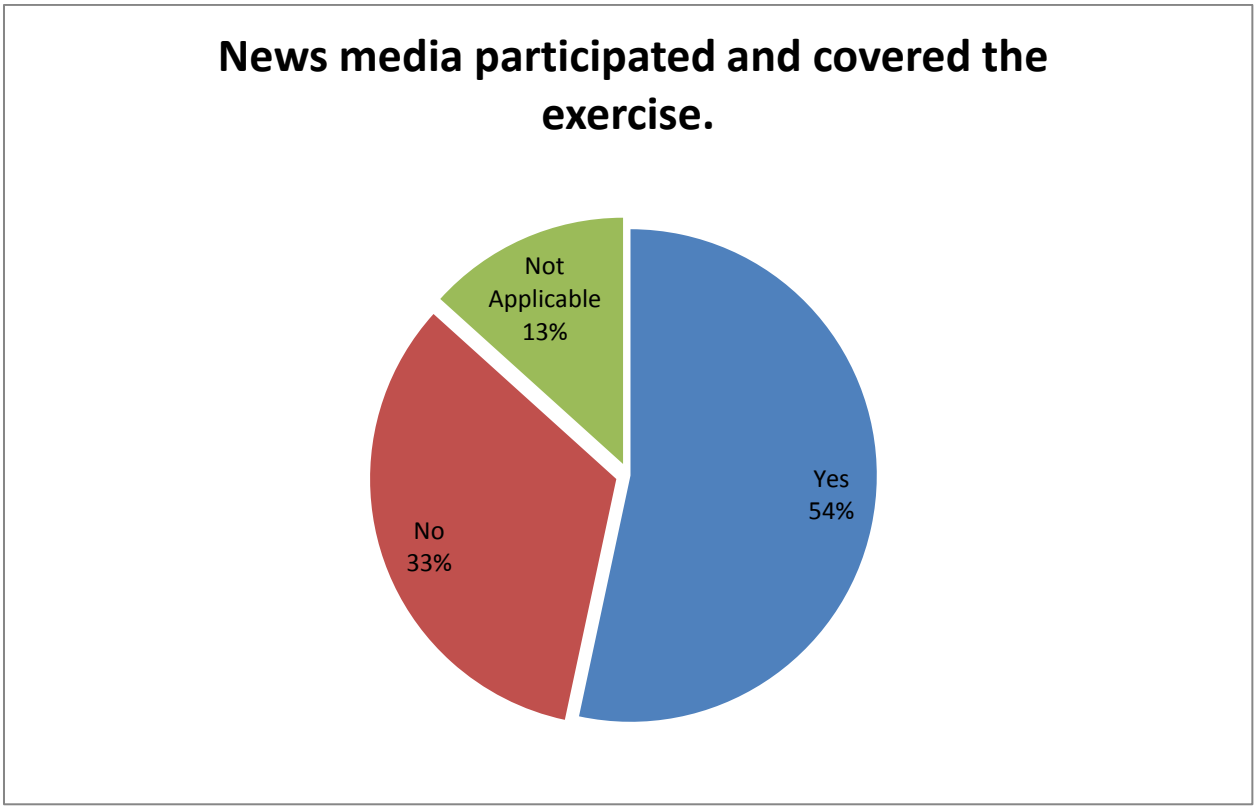

Figure I–62. News media participanting and covering trhe exercise

The countries who answered **YES** to the above question were: Anguilla, Barbados, Bermuda, Cayman Islands, Costa Rica, Dominican Republic, French West Indies, Haiti, Puerto Rico, Saint Lucia, Saint Vincent and The Grenadines, Saint Kitts and Nevis, The Bahamas, Turks and Caicos, US Virgin Islands, and Puerto Rico.

The countries who answered **NO** to the above question were: Aruba, Belize, British Virgin Islands, Colombia, Dominica, Guatemala, Honduras, Mexico, Montserrat, and Suriname.

The countries who answered **NOT APPLICABLE** to the above question were: Brazil, Jamaica, Nicaragua, and Sint Maarten.

The comments received from the participant Tsunami National Contacts (TNC) were:

- Cayman Islands:
  - http://www.compasscayman.com
  - http://www.cayman27.com.ky/section/news
- Haiti:
  http://rtghaiti.com/2014/03/27/seyans-fomasyon-nan-kad-preparasyon-egzesis-similasyon-caribe-wave-la-pou-evalye-kapasite-peyi-a-an-alet-tsunami/
- Venezuela:
  - http://www.aporrea.org/actualidad/n247208.html
  - https://vimeo.com/90260542
  - http://diariodecaracas.com/que-sucede/venezuela-se-suma-los-38-paises-que-participaran-en-el-simulacro-tsunami-del-caribe
- Turks and Caicos: The exercise was covered by TCIG Press Office, Radio Turks and Caicos and local television news (PTV)
- St. Kitts and Nevis: pre and post interviews were done
- Colombia: Medios de comunicación no participaron en el ejercicio. La difusión de la participación de Colombia en el ejercicio se realizó mediante comunicados en los websites de las entidades participantes y en redes sociales.
- Dominican Republic:
  - Prensa escrita impresa y digital El Nuevo Diario – 18 de marzo, 2014. Se realizará el próximo 26 de marzo. República Dominicana participará en simulacro regional de sismo y tsunami.
    http://elnuevodiario.com.do/app/article.aspx?id=367631
  - El Caribe- 19 de marzo, 2014 Simulacro. Realizarán en el país simulacro de tsunami
    http://www.elcaribe.com.do/2014/03/19/realizaran-pais-simulacro-tsunami#sthash.8jBSovQk.dpuf
  - Hoy- 19 de marzo, 2014 Harán simulacro de sismo y tsunami en PP
    http://hoy.com.do/haran-simulacro-de-sismo-y-tsunami-en-pp/
  - El Nacional – 18 de marzo, 2014 Harán en RD simulacro regional de tsunami
    http://elnacional.com.do/haran-en-rd-simulacro-regional-de-tsunami/
  - El Día- 19 de marzo, 2014 Harán simulacro de operativo ante un tsumani
    http://eldia.com.do/haran-simulacro-de-operativo-ante-untsumani/
  - Diario Libre- 19 de marzo, 2014 Simularán un tsunami en Puerto Plata
    http://www.diariolibre.com/noticias/2014/03/19/i531561_simularn-tsunami-puerto-plata.html

- Noticias SIN- 18 de marzo, 2014 Exhortan a la población a prepararse ante ocurrencia de terremoto o tsumani http://www.noticiassin.com/2014/03/exhortan-a-la-poblacion-a-prepararse-ante-la-ocurrencia-de-un-terremoto-o-tsumani/

- Telenoticias- 19 de marzo, 2014 ONAMET participará e simulacro de tsunami; hoy inicia la primavera - See more at: http://telenoticias.com.do/onamet-participara-e-simulacro-de-tsunami-hoy-inicia-la-primavera/#sthash.uCFrS5RN.dpuf Zol 106.5 –

- Puerto Plata Digital – 19 de marzo, 2014 Realizarán en Puerto Plata simulacro regional de sismo y tsunami “Caribe Wave Lantex” consiste en un simulacro de terremoto que generará un tsunami en la costa Atlántica del país. http://www.puertoplatadigital.com/verNoticia.aspx?Id=14919

- Puerto Plata Habla- 18 de marzo, 2014 REPÚBLICA DOMINICANA PARTICIPARA EN SIMULACRO DE SISMO Y TSUNAMI http://www.puertoplatahabla.com/articles.php?art_id=13183&start=1

- Último Diario – 18 de marzo, 2014 República Dominicana participará en simulacro regional de sismo y tsunami http://ultimodiario.com/verNoticias.aspx?Id=10332

- Puerto Plata en Línea- 19 de marzo, 2014 Anuncian Simulacro de sismo y tsunami en Puerto Plata http://ppenlinea.blogspot.com/2014/03/anuncian-simulacro-de-sismo-y-tsunami.html

- Prensa audiovisual Telesistema 11. - Reporte de la rueda de prensa. Emisión Telenoticias 2pm y Emisión Estelar- 11pm con Roberto Cavada.

- Martes 18 de marzo, 2014. - Imágenes y comentarios. Programa Matutino El Día con Huchi Lora.

- 19 de marzo, 2014. Noticias SIN- ANTENA LATINA 7 - Reportaje de la rueda de prensa. Edición 2pm y 11 pm con Alicia Ortega. *Nota: El reportaje de Mariela Caamaño para la edición 2pm es muy completo y preciso. Si a las instituciones les interesa para fines de archivo o divulgación, sugiero gestionarlo.

- El tribunal de la Arena- Puerto Plata - Comentarios y debate sobre el tema en el programa matutino radial.

- Antigua and Barbuda: Better addressed by the TNC.

- French West Indies: Local radios and the daily newspaper were present: a double page was published the week after the exercise. (http://www.martinique.franceantilles.fr/actualite/une/tsunami-le-scenario-de-1755-rejoue-248940.php).

- Costa Rica:

  - http://www.monumental.co.cr/noticia/simulacro-dejo-lecciones-en-limon-para-enfrentar-un-tsunami

- http://www.diarioextra.com/Dnew/noticiaDetalle/228241
- http://www.cne.go.cr/index.php/281-uncategorised/861-2014-03-26-costa-rica-evalua-en-limon-el-impacto-de-un-tsunami
- http://www.prensalibre.cr/nacional/100795-pais-vivio-tsunami-y-sismos-en-un-solo-dia.html

Question 64		
Overall, the exercise planning, conduct, format and style were satisfactory.		
Answer Options	**Response Percent**	**Response Count**
Yes	89.7%	26
No	3.4%	1
Not Applicable	6.9%	2
Comments:		2
	answered question	**29**
	skipped question	**7**

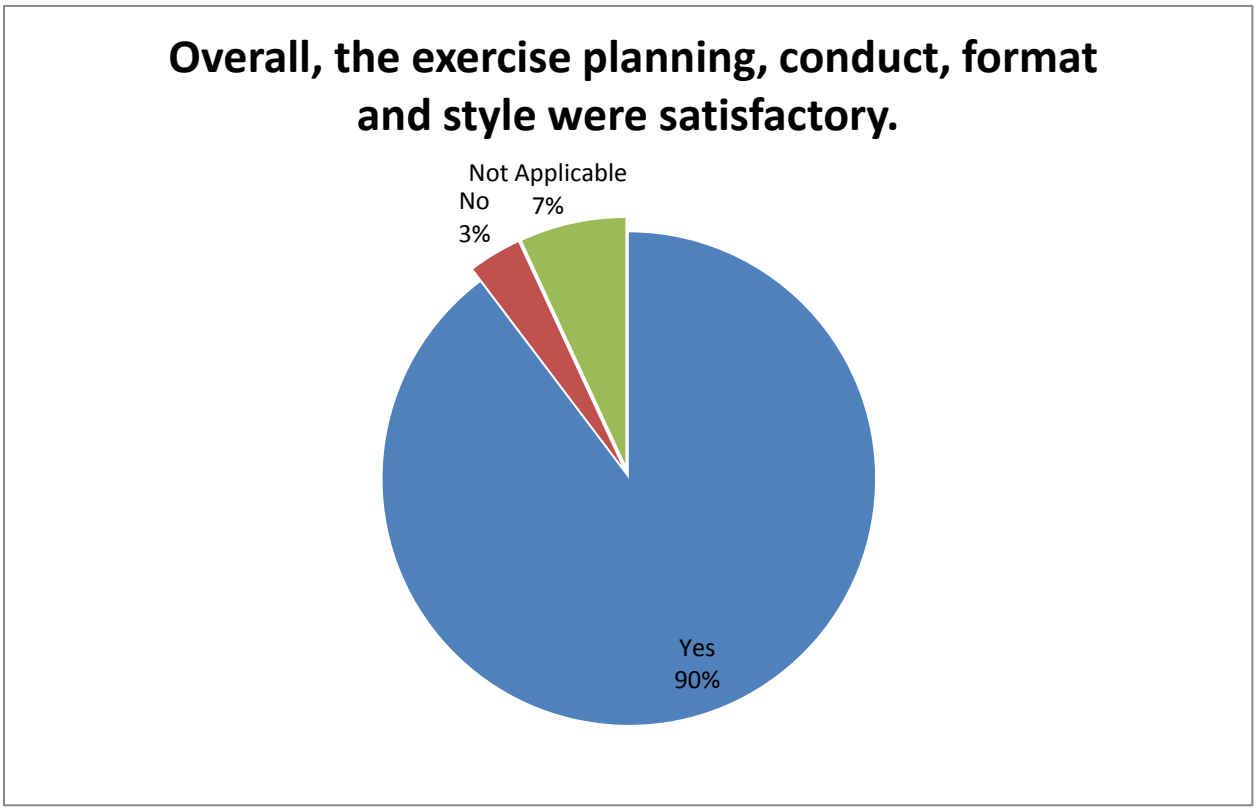

Figure I–63. Satisfaction with the exercise planning, conduct, format and style

The countries who answered **YES** to the above question were: Anguilla, Antigua and Barbuda, Aruba, Barbados, Belize, Bermuda, British Virgin Islands Cayman Islands, Colombia, Costa Rica, Dominican Republic, French West Indies, Guatemala, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Puerto Rico, Saint Lucia, Saint Vincent and The Grenadines, Saint Kitts and Nevis, The Bahamas, Turks and Caicos, US Virgin Islands, and Venezuela.

The countries who answered **NO** to the above question were: Dominica.

The countries who answered **NOT APPLICABLE** to the above question were: Brazil and Sint Maarten.

The comments received from the participant Tsunami National Contacts (TNC) were:

- Bermuda: From our position as the TWFP yes. However, improvements can definitely be made elsewhere as already alluded to.

- Dominica: Could have been more inclusive however due to constraints was kept to a minimal.

Question 65 Exercise planning at the international level went well.		
Answer Options	**Response Percent**	**Response Count**
Yes	78.6%	22
No	0.0%	0
Not Applicable	21.4%	6
Comments:		1
answered question		**28**
skipped question		**8**

Figure I–64. Success of the exercise planning at international level

The countries who answered **YES** to the above question were: Anguilla, Antigua and Barbuda, Aruba, Belize, British Virgin Islands, Cayman Islands, Colombia, Dominica, Costa Rica, Dominican Republic, Haiti, Honduras, Mexico, Nicaragua, Puerto Rico, Saint Lucia, Saint Vincent and The Grenadines, Saint Kitts and Nevis, The Bahamas, Turks and Caicos, US Virgin Islands, and Venezuela.

The countries who answered **NO** to the above question were: N/A.

The countries who answered **NOT APPLICABLE** to the above question were: Barbados, Bermuda, Brazil, French West Indies, Jamaica, and Sint Maarten.

The comments received from the participant Tsunami National Contacts (TNC) were:

- Turks and Caicos: Sufficient information in products and web-based workshops were provided.

Question 66 Exercise planning at the national level went well.		
Answer Options	**Response Percent**	**Response Count**
Yes	75.0%	21
No	7.1%	2
Not Applicable	17.9%	5
Comments:		4
answered question		**28**
skipped question		**8**

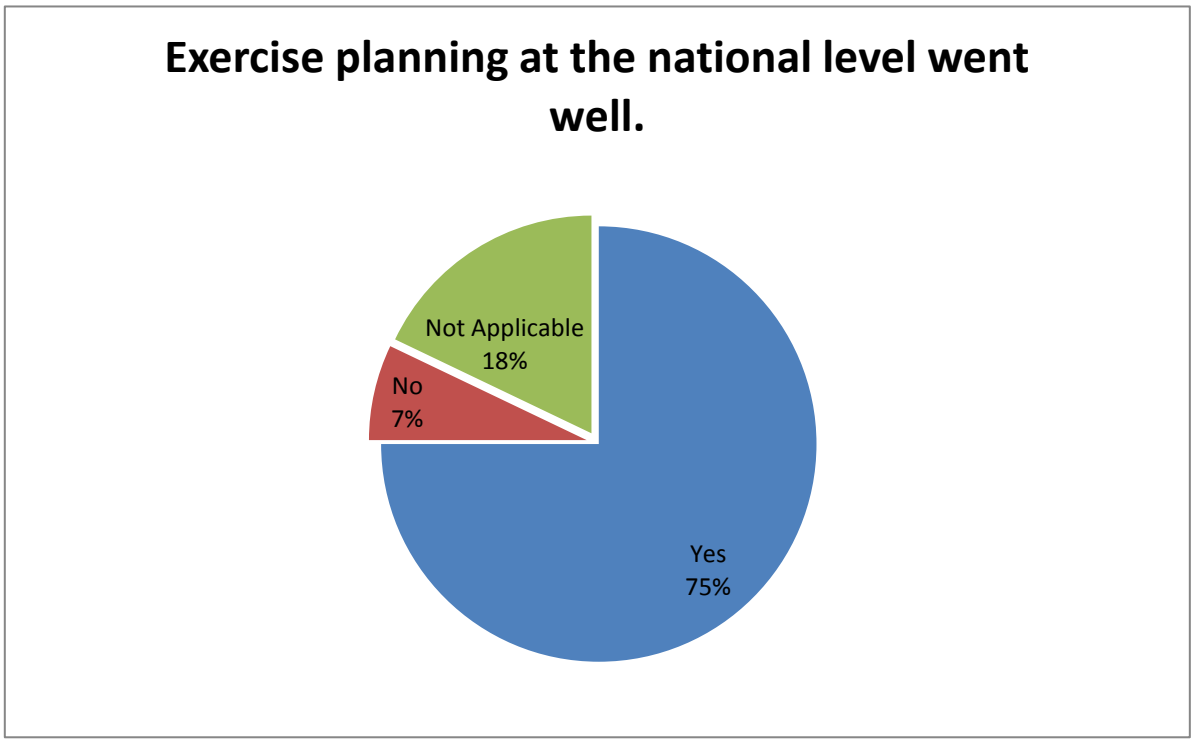

Figure I–65. Success of the exercise planning at national level

The countries who answered **YES** to the above question were: Anguilla, Aruba, Barbados, Bermuda, British Virgin Islands, Cayman Islands, Colombia, Costa Rica, Dominican Republic, Guatemala, Haiti, Honduras, Mexico, Nicaragua, Puerto Rico, Saint Lucia, Saint Vincent and The Grenadines, Saint Kitts and Nevis, The Bahamas, US Virgin Islands, and Venezuela.

The countries who answered **NO** to the above question were: Belize, and Dominica.

The countries who answered **NOT APPLICABLE** to the above question were: Brazil, French West Indies, Jamaica, Sint Maarten, and Turks and Caicos.

The comments received from the participant Tsunami National Contacts (TNC) were:

- Turks and Caicos: Exercise was conducted at a local level.
- Colombia: Sólo a nivel de las entidades técnicas del Sistema Nacional de Detección y Alerta de Tsunamis responsables de la evaluación de la amenaza.
- Antigua and Barbuda: Could be strengthened.
- French West Indies: The national level (Paris) did not participate.

Question 67 Exercise planning at the state/local level went well.		
Answer Options	**Response Percent**	**Response Count**
Yes	66.7%	18
No	7.4%	2
Not Applicable	25.9%	7
Comments:		4
answered question		**27**
skipped question		**9**

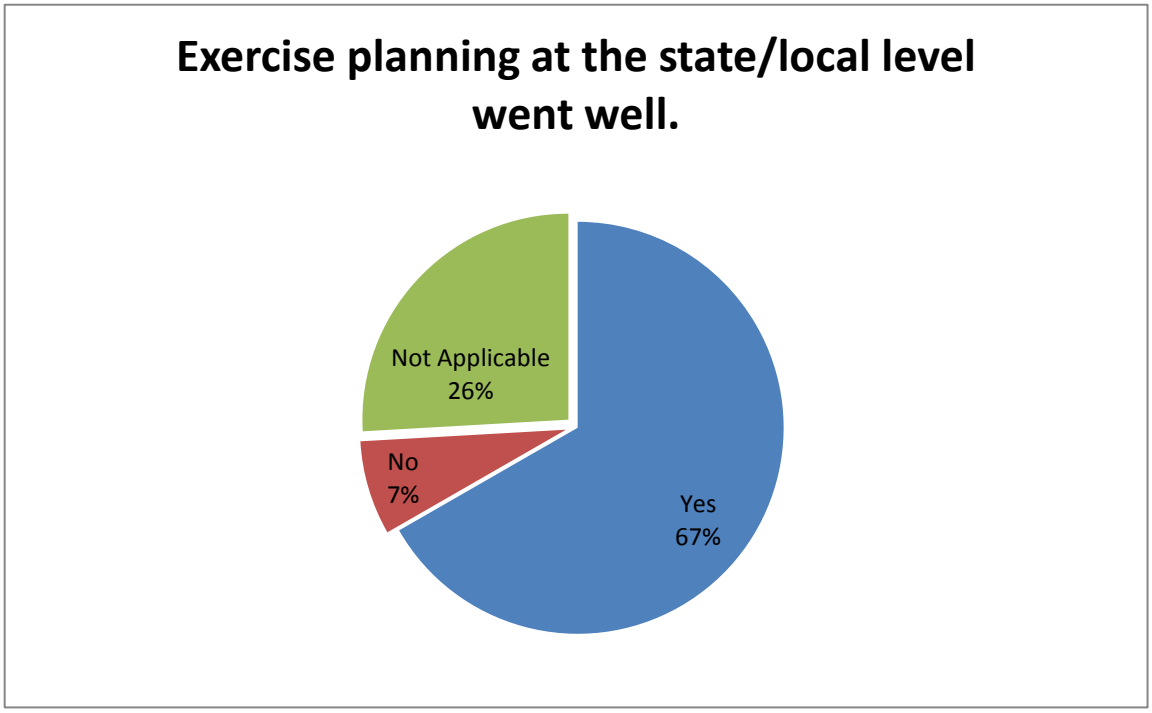

Figure I–66. Success of the exercise planning at state/local level

The countries who answered yes to the above question were: Anguilla, Aruba, Barbados, British Virgin Islands, Costa Rica, Dominican Republic, French West Indies, Honduras, Jamaica Mexico, Nicaragua, Puerto Rico, Saint Lucia, Saint Vincent and The Grenadines, The Bahamas, Turks and Caicos, US Virgin Islands, and Venezuela.

The countries who answered **NO** to the above question were: Belize, and Dominica

The countries who answered **NOT APPLICABLE** to the above question were: Bermuda, Brazil, Cayman Islands, Colombia, Haiti, Sint Maarten, and Saint Kitts and Nevis.

The comments received from the participant Tsunami National Contacts (TNC) were:

- Honduras: Es importante a nivel local.
- Turks and Caicos: Very good participation and input from all stakeholders. Schools were eager to participate in the event.
- Nicaragua: De acuerdo al plan, solamente las instituciones involucradas.
- Antigua and Barbuda: Better addressed by the TNC.

Question 68

The CARIBE WAVE/LANTEX 14 exercise website pages (eg. caribewave.info, prsn.uprm.edu) were useful.

Answer Options	Response Percent	Response Count
Yes	89.3%	25
No	0.0%	0
Not Applicable	10.7%	3
Comments:		2
answered question		**28**
skipped question		**8**

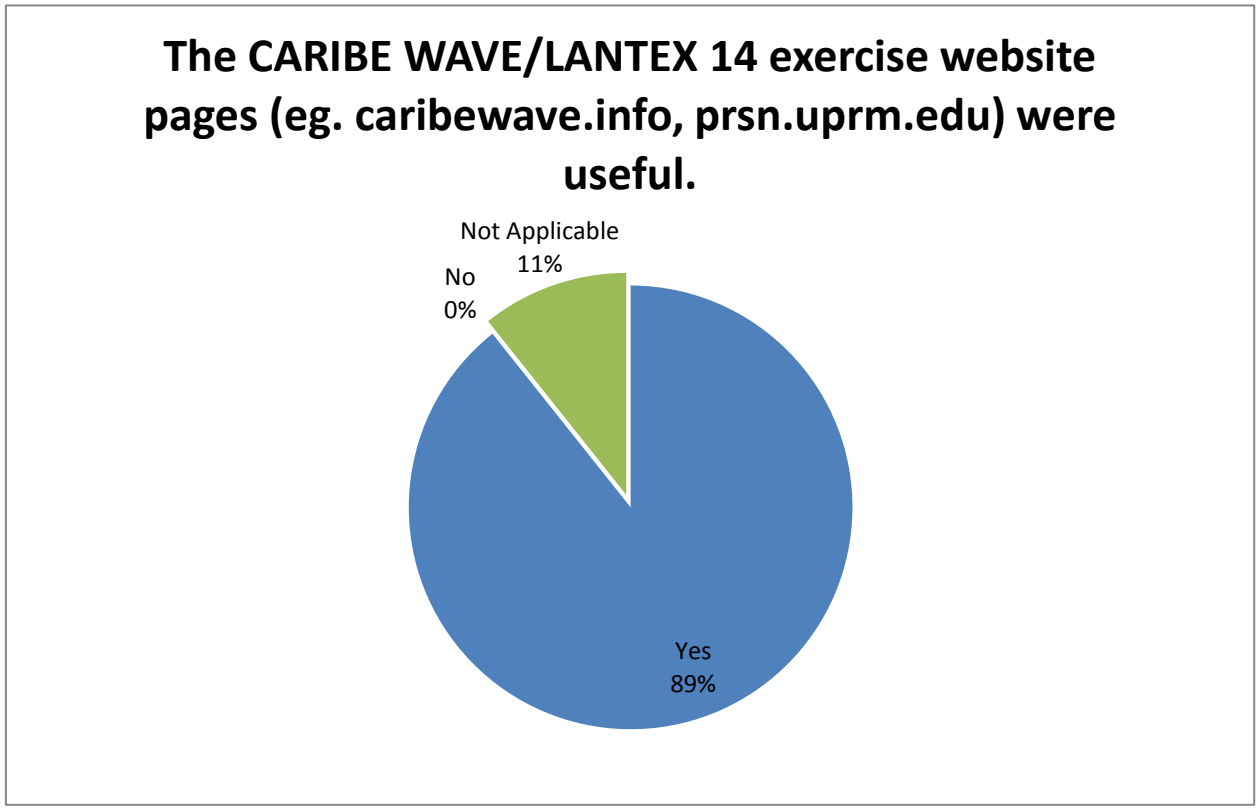

Figure I–67. Utility of Caribe Wave/Lantex 14 exercisewebsite pages

The countries who answered **YES** to the above question were: Anguilla, Antigua and Barbuda, Aruba, Barbados, Bermuda, British Virgin Islands, Cayman Islands, Colombia, Dominica, Costa Rica, Dominican Republic, French West Indies, Guatemala, Haiti, Honduras, Jamaica, Mexico, Puerto Rico, Saint Lucia, Saint Vincent and The Grenadines, Saint Kitts and Nevis, The Bahamas, Turks and Caicos, US Virgin Islands, and Venezuela.

The countries who answered **NO** to the above question were: N/A.

The countries who answered **NOT APPLICABLE** to the above question were: Belize, Brazil, Sint Maarten.

The comments received from the participant Tsunami National Contacts (TNC) were:

- Guatemala: Nos facilitó mucho la conducción del mismo.
- Turks and Caicos: The website pages provided useful products which assisted with the preparation of the exercise.

Question 69 This evaluation form was appropriate.		
Answer Options	**Response Percent**	**Response Count**
Yes	89.7%	26
No	6.9%	2
Not Applicable	3.4%	1
Comments:		9
answered question		**29**
skipped question		**7**

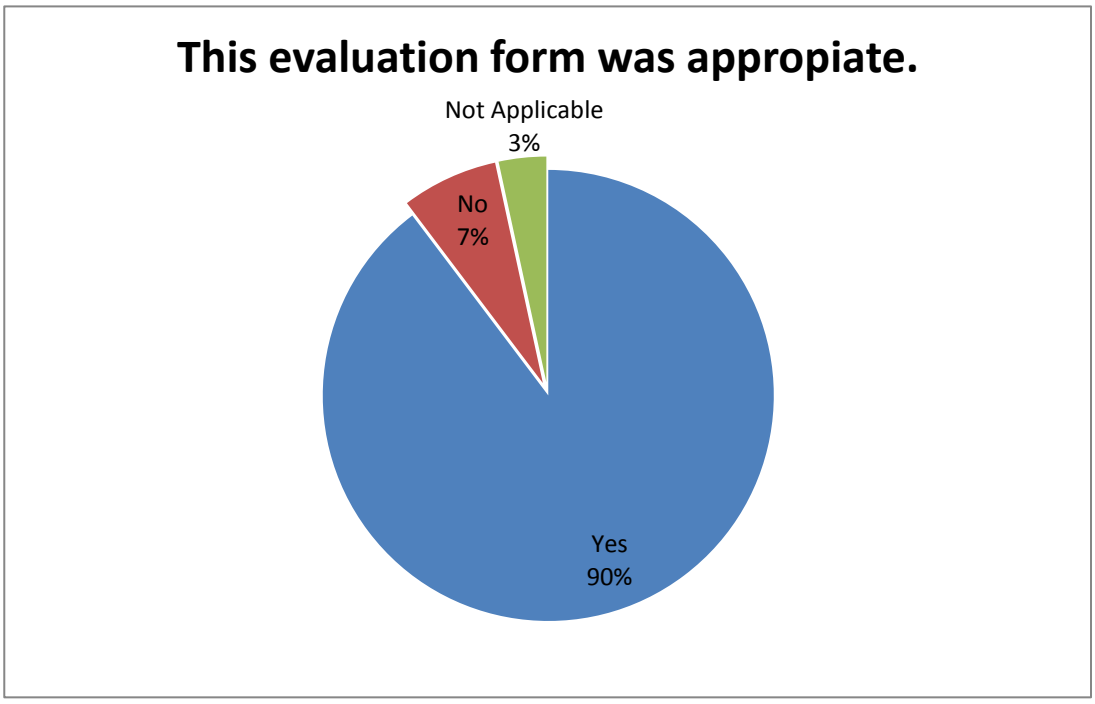

Figure I–68. Suitability of the evaluation form

The countries who answered **YES** to the above question were: Antigua and Barbuda, Aruba, Belize, Bermuda, British Virgin Islands, Cayman Islands, Colombia, Dominica, Costa Rica, Dominican Republic, French West Indies, Guatemala, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Puerto Rico, Saint Lucia, Saint Vincent and The Grenadines, Sint Maarten, Saint Kitts and Nevis, The Bahamas, Turks and Caicos, US Virgin Islands, and Venezuela.

The countries who answered **NO** to the above question were: Anguilla and Barbados.

The countries who answered **NOT APPLICABLE** to the above question were: Brazil.

The comments received from the participant Tsunami National Contacts (TNC) were:

- US Virgin Islands: Difficulty to submit new evaluation using same computer.
- Honduras: Pero debe de ser más corta.
- Bermuda: It is rather long though!

- Saint Vincent and the Grenadines: A little too long.
- Saint Kitts and Nevis: In general.
- Anguilla: Emphasis placed on the TWFP and some Country's protocols give the TNC greater role.
- Dominican Republic: Yes, but nevertheless it should be taken into consideration planning to fill in Spanish.
- French West Indies: However, very long and impossible to save the form if you need to stop and want to come back later.
- Barbados: Evaluation form should be reviewed.

Question 70 CARIBE WAVE/ LANTEX 14 Handbook provided an appropriate level of detail.		
Answer Options	**Response Percent**	**Response Count**
Yes	93.1%	27
No	0.0%	0
Not Applicable	6.9%	2
Comments:		3
	answered question	**29**
	skipped question	**7**

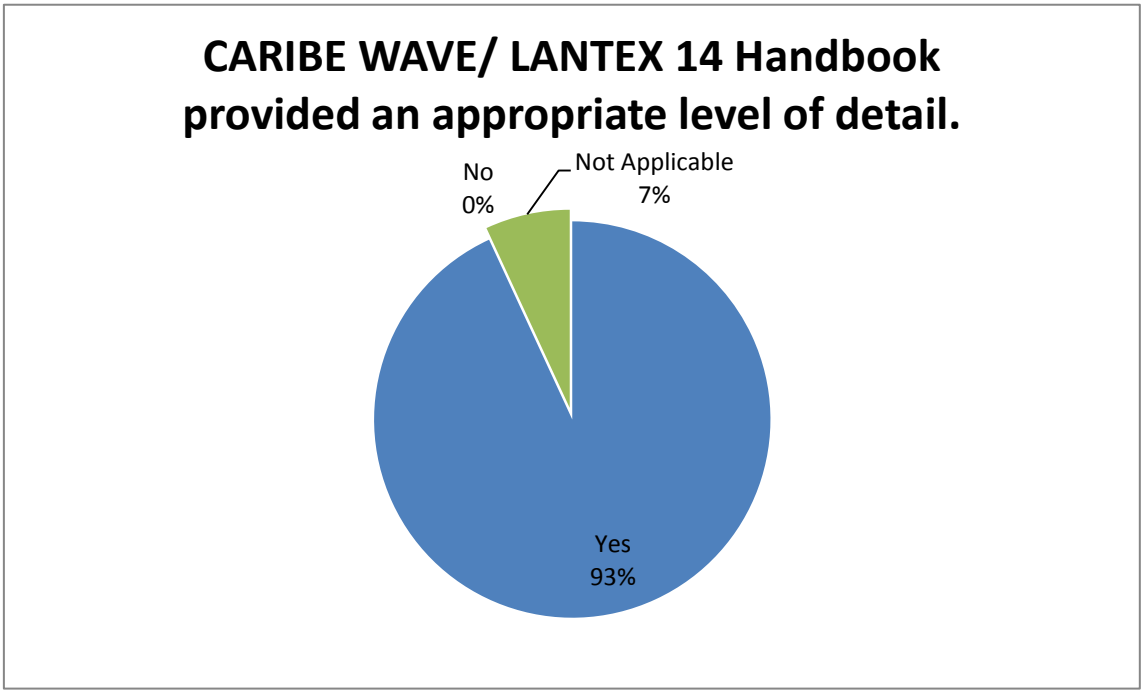

Figure I–69. Caribe Wave/Lantex 14 provided an appropriate level of detail

The countries who answered **YES** to the above question were: Anguilla, Antigua and Barbuda, Aruba, Barbados, Belize, Bermuda, British Virgin Islands, Cayman Islands, Colombia, Dominica, Costa Rica, Dominican Republic, French West Indies, Guatemala, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Puerto Rico, Saint Lucia, Saint Vincent and The Grenadines, Saint Kitts and Nevis, The Bahamas, Turks and Caicos, US Virgin Islands, and Venezuela.

The countries who answered **NO** to the above question were: N/A.

The countries who answered **NOT APPLICABLE** to the above question were: Brazil and Sint Maarten.

The comments received from the participant Tsunami National Contacts (TNC) were:

- US Virgin Islands: Agencies were able to create injects based on the Handbook for role playing.

- Bermuda: Found this very thorough.

- Turks and Caicos: Handbook was clean and suitable. However, mire information could have been provided as it relates to the TCI.

Question 71 CARIBE WAVE/LANTEX 14 Webinars were helpful in preparing for the exercise.		
Answer Options	**Response Percent**	**Response Count**
Yes	79.3%	23
No	0.0%	0
Not Applicable	20.7%	6
Comments:		2
	answered question	**29**
	skipped question	**7**

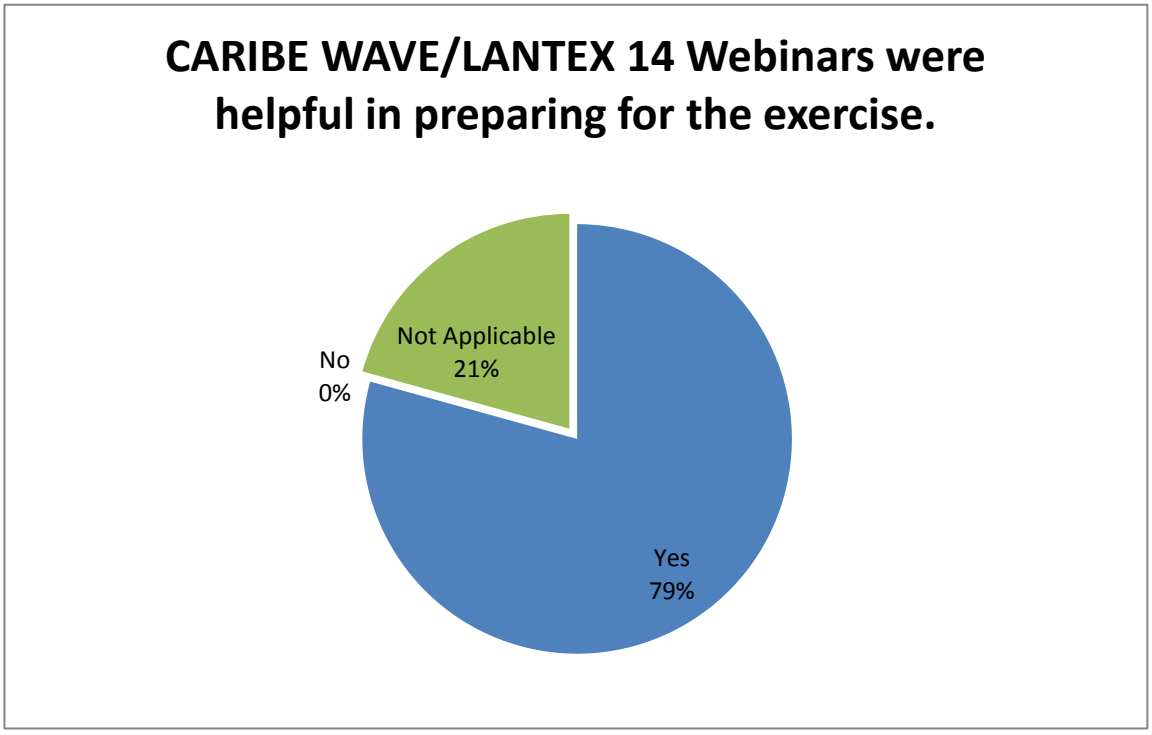

Figure I–70. Usefulness of Caribe Wave/Lantex 14 webinars in preparing for the exercise

The countries who answered **YES** to the above question were: Anguilla, Antigua and Barbuda, Aruba, Barbados, Bermuda, British Virgin Islands, Cayman Islands, Colombia, Dominica, Costa Rica, Dominican Republic, French West Indies, Guatemala, Haiti, Honduras, Mexico, Nicaragua, Puerto Rico, Saint Lucia, Saint Kitts and Nevis, Turks and Caicos, US Virgin Islands, and Venezuela.

The countries who answered **NO** to the above question were: N/A.

The countries who answered **NOT APPLICABLE** to the above question were: Belize, Brazil, Jamaica, Saint Vincent and The Grenadines, and The Bahamas.

The comments received from the participant Tsunami National Contacts (TNC) were:

- Bermuda: More in the future please. The more communication the better.
- Turks and Caicos: Webinars allowed for any queries/questions concerning the exercise to be addressed/highlighted.

Question 72

Was the IOC How to Plan, Conduct, and Evaluate Tsunami Exercises guideline (http://www.srh.noaa.gov/srh/ctwp/?n=caribewave2014) used in preparing for the exercise?

Answer Options	Response Percent	Response Count
Yes	67.9%	19
No	21.4%	6
Not Familiar with the Guideline	10.7%	3
Comments:		3
answered question		**28**
skipped question		**8**

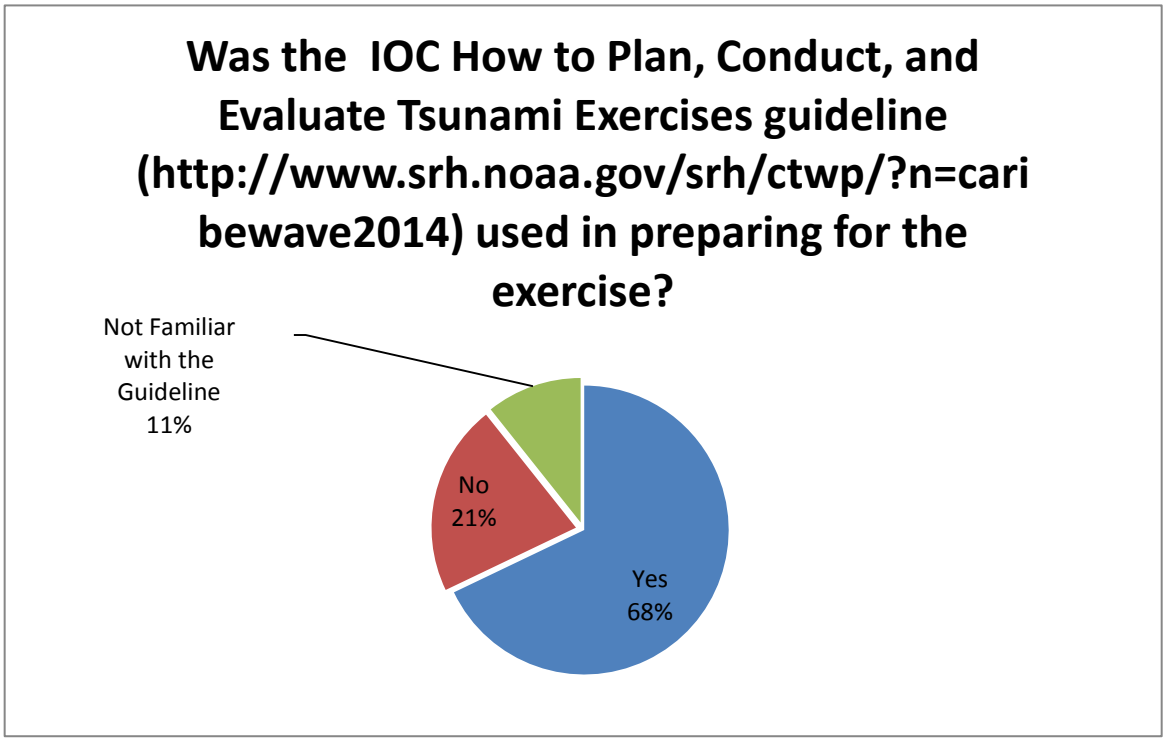

Figure I–71. Use of the guideline *How to plan, conduct, and evaluate tsunami exercises* during the preparation of the exercise

The countries who answered **YES** to the above question were: Anguilla, Antigua and Barbuda, Bermuda, British Virgin Islands, Cayman Islands, Colombia, Costa Rica, Dominican Republic, French West Indies, Guatemala, Honduras, Mexico, Puerto Rico, Saint Lucia, Saint Vincent and The Grenadines, Turks and Caicos, US Virgin Islands, and Venezuela.

The countries who answered **NO** to the above question were: Barbados, Belize, Dominica, Sint Maarten, Saint Kitts and Nevis, and The Bahamas,

The countries who answered **NOT FAMILIAR** with the guideline to the above question were: Barbados, Haiti, and Jamaica.

The comments received from the participant Tsunami National Contacts (TNC) were:

- Turks and Caicos: To some extent; specifically when designing the exercise for the TCI.

- Dominica: Due to human resource constraints - the exercise was limited in scope and therefore did not require making reference to most of the guidelines as articulated in the IOC guidelines.

- Saint Kitts and Nevis: Considering that our focus was on communication and education.

Question 73

Please provide a general statement about what went well, about what did not go well and what could be improved, in aspects of exercise planning, as well as exercise conduct.

Answer Options	Response Count
	24
answered question	**24**
skipped question	**12**

The comments received form the participants Tsunami National Contact (TNC) were:

- Cayman Islands: The notification procedure went well despite identifying one area that redundancy needs to be created.

- Honduras: Para Honduras el ejercicio fue un éxito pero creo que el escenario debería ser más regional, utilizar más el idioma español y no complicar mucho los procedimientos de envío de información y de comunicación.

- Bermuda: As always this is a very useful exercise. The main problem we have here in Bermuda is the fact that although a tsunami could be a high impact event, it is a very low probability event. This makes it difficult for our community (both government agencies and the public) to seriously engage in such exercises. The public have several false impressions, i.) the tsunami will just go around the island, not affecting us, ii.) if it happens it will be a disaster movie-type scenario, and we will all be wiped out whatever we do, and iii.) they just don't think it will happen. Another hurdle that we have had to face is a false event which occurred in December 2006, when large swells hit our northern reef, imitating the look of an approaching tsunami. Due to poor communication, mass panic ensued which could have caused needless injuries. We hope recent LANTEX exercise have now mitigated the risk of this happening again. BWS as the TWFC has tried to confront some of the issues above by showcasing the Grandbanks 1929 Tsunami this year, which caused some significant inundation around the Flatts inlet area of the Bermuda. With coastal infrastructure very much increased in the 21st century, such an event could have a significant impact to life and property. Additional modeled scenarios obtained by Dr.Guishard were also showcased to the EMO and other local agencies for further information, as well some footage from the recent Japan tsunami (to give an idea of how inundation may occur in our own Flatt's inlet today). Having showcased these in a couple of pre-exercise seminars, there appears to be a gradual acknowledgement of the risk and being more prepared for it. BWS is hopeful that agencies will write up appropriate SOPs and act on them appropriately. There are significant concerns regarding evacuation of low level areas, especially in an exercise, as this could cause more harm than good. The whole process needs more time to be properly evaluated by the appropriate agencies. Some draft maps have been drawn up, indicating safe areas in each parish. The director Kimberley Zuill is working hard to get a system of sirens set up across the Island, in order to help initiate any evacuation - a suggestion is for an audible voice alert, directing people to various media for more information. SMS text messaging has already been used here in Tropical Season, and this is also something that could be established for Tsunami Warning, although there are concerns about the texts getting out to the whole community in an appropriate timely

fashion. As already mentioned earlier in this survey, communication channels need to be improved with certain agencies, specifically with the EMO and the National Disaster Coordinator. Improvements out of our jurisdiction include forecasting of wave heights (hopeful of receiving these in future products), an idea of how many waves, more buoy data, help to model inundation for Bermuda specifically. Note that BWS found this particular exercise scenario (Portugal 1755) very appropriate for Bermuda, and we would like to suggest a Puerto Rico trench scenario for next year (as reaction times for Bermuda will be much reduced). A final request is to be able to have a copy of this survey I have completed, so that we can have it for our records.

- Sint Marteen: Due to conflicting schedules the country planned only to test the communications, not by actively participating. The sign-up form was rather confusing and mainly in Spanish. Therefore I missed the part where the specific warning messages had to be selected. This resulted in only receiving the initial dummy message. We did not receive any of the exercise messages.

- Saint Vincent and the Grenadines: Had a session the previous day on tsunamis-science, TWFP and TNC need more training in modeling of tsunami wave and calculating arrival times for tsunami waves.

- Haiti: Globally, The CARIBE WAVE/LANTEX 2014 went well in Haiti. The country has chosen to activate the national level of the National System for Risk and Disaster Management. Awareness activity was conducted at municipal level. Next time, evacuation drill should be included. The media coverage of the next exercise should be enhanced too.

- Belize: The Emergency Management Organization was occupied with other activities at the time and could not partake fully.

- British Virgin Islands: We at the DDM were pleased with the interest we received from the private sector compared to previous year and the support shown by the Governor and Premier with their participation.

- Venezuela: In general terms the exercise was successful, you should correct some details of communication such as cell phone use is not reliable for these cases, further prepare coastal populations is another task that needs more training.

- Guatemala: Creo que todo está bien, nos ayudó mucho todo el material puesto a la disposición, lástima que los mensajes no son en español esto nos daría mejores resultados.

- Turks and Caicos: Overall observations/feedback - All schools participating evacuated in a timely manner (under 40 minutes). - Generally, for the primary schools, students and staff response to their in-house alerting mechanism (i.e. school bell, whistles) was prompt. - Most children were able to cope with the distance. Whilst, some teachers struggled. - Vehicles were allocated to transport small kids (age 4 and under). - Primary schools used the buddy system to evacuate students. - Students were well disciplined, energized and encouraged by their peers and teachers to keep moving. - Evacuation of schools was well organized and controlled by school personnel and volunteers. - Most schools carried out roll call for students prior to evacuating. Less carried out roll call once at the assembly point. - Medical team was present to provided assistance where necessary. The following gap were highlighted during the exercise and debriefing which followed: - Church bells on the islands were not heard by the schools. - Alerting (i.e. police sirens, bells) needs to extend for longer period. - Emails were received. However, messages were a bit

misleading resulting in some schools evacuating earlier than anticipated. Hence, no police or volunteers were present. - Handheld radios did not work well due to problems with repeaters. Radio communication should have been tested the day before the exercise. Three key recommendations coming of the exercise were noted: - There is a need to for increased education and awareness as it relates to evacuating procedures at all levels. - There is a need for a formalized alerting system with some form of verification system in the TCI. - There is a need for a standardized warning communication system; with standardize messages disseminated. This will help alleviate the miscommunication issue which was a common issue during this exercise. Messages received from international notification agencies should be tailored to the TCI and also clearly indicate if to STANDBY and wait on next message before responding/evacuating.

- Dominica: Dominica was not fully prepared for the exercise due to many constraints both in terms of human and other resources. There were also a lot of other competing activities that reduced the commitment from the role players and agencies and that certainly had a bearing on how low keyed our participation turned out to be this year as compared to last year's exercise. The awareness went well however and the volunteered participation of one public school on the west coast and an entire health district on the North East Coast gave us some satisfaction that the exercise if properly resourced and planned at the local level can have a much greater impact. There is growing interest in the hazard and in how we can mitigate against the impact although among the general population it is a hazard that is still believed to be low probability event.

- Nicaragua: Todo salió a como fue planificado en el plan de realización del ejercicio. Nicaragua inscribió la dirección de correo egcw2014@gf.ineter.gob.ni donde estaban todos participantes del ejercicio. Esta dirección de correo no recibió ningún mensaje del PTWC. Los correos del ejercicio solamente fueron recibidos por le TWFP.

- Saint Kitts and Nevis: We were able to test and discuss aspects of the draft SOPs. Key stakeholders had a better appreciation of their roles and responsibilities and the need for and importance to put SOPs in place for their entities. There was a high level of motivation, seriousness and expressed intention to follow up action within entities. Gaps were identified and related recommendations made to address same. The need for training of employees at the TWFP was identified. Not enough Permanent Secretaries participated. Enough media did not confirm receipt of the alert issued.

- Colombia: En Colombia el ejercicio se realizó usando el escenario de Portugal en tiempo comprimido y tuvo una duración total de 4 horas. Durante el ejercicio se socializo con las entidades participantes los nuevos productos del PTWC con el objetivo que se familiaricen con ellos, así como puedan ajustar los protocolos internos a la información que suministran. El ejercicio probar el sistema de comunicaciones entre las entidades técnicas del Sistema Nacional e identificar puntos a mejorar.

- Dominican Republic: Definitely this year's exercise was much greater involvement of the community, as the media, despite being a Telesunamis, or a distant tsunami, helped us to test communications between ONAMET as focal point and the COE as emergency managers at the highest level, we implemented the ability of some communities of dealing with a phenomenon of this magnitude, at least where he has been working on the issue, for example. Puerto Plata, where UNDP dare DIPECHO is making efforts to take resilient communities to earthquakes and Tsunamis.

- Antigua and Barbuda: Local response still needs to be strengthened even for the exercise

- French West Indies: An exercise based on a trans-oceanic scenario is actually very useful to activate and test (it was the first time for a tsunami) our EOC and to involve many stakeholders (e.g. network operators) who had never been present during the previous Caribe Wave exercises. It appears that this kind of trans-oceanic scenario is also important to change the idea that there is nothing to do in case of tsunami, because it will always strike the island quite instantaneously after a great and destructive earthquake. Our PTWC regrets that the whole set of messages are not disseminated through usual way, i.e. OMM, to better test its transmission procedure to the DMO.

- Saint Lucia: The tsunami plan for SLU is a draft document. It is not written from experience of a tsunami. CaribeWave14 was the closest to the real thing that allowed for a testing and there is more work to be done. There is always more work to be done.

- Puerto Rico: At the level of communications all went as anticipated. We were able to verify the effectiveness of the protocol. There were problems with the transmission of the Emergency Alert System message on some radio stations. We could test the response time of the Emergency Operations Center for a distant tsunami. This scenario served as an ideal opportunity to discuss the response strategies to a tsunami from different primary agencies. For CARIBE WAVE/LANTEX 2015 exercise we like to work with a major earthquake in the Puerto Rico Trench considering the consequences that such an event would bring to the Caribbean and the short period of time for evacuation in most countries.

- Costa Rica: Everything went as planned we have started to plan the exercise for next year. We are asking the institutions that participated this year to elaborate their SOP so they can be tested next year.

- Barbados: The exercise generally went well in terms of receipt of messages via email from PTWC. There were noticeable delays in messages received via GTS. We are still having technical issues relating to the extraction and storage of Barbados specific alert information via ENWIN. Nationally we need to further refine SOPs and ensure that agency specific SOPs are properly developed, documented, exercised and communicated to all agency personnel. The TWFP needs to utilise any additional modes of communications as stipulated in SOPs. A regional component of exercise would need to be included to test region-wide communications. The exercise exposed a number of deficiencies in the local system which will be tackled through (1) retraining (2)further exercising (3)further refinement of SOPs (4) continued general sensitisation of responders and the public.

- Jamaica: STRENGTHS Enhanced Products and maps were generally very useful A very good learning platform LIMITATIONS Forecast should have been extended to include wider Caribbean Greater clarity need to be given with some messages In instances it was unclear if "dummy advisories" were initiated by specific countries or were just recommendations Provision of models and simulation applications.

- Aruba: It would be recommendable that when a tsunami message text is sent to put the countries listed in the “a tsunami watch remains in effect for" section in alphabetical order. That way we can find our country faster.

ANNEX II

SEA LEVEL STATUS

Tsunami Warning Center Stations Availability

NATIONAL TSUNAMI WARNING CENTER				
STATION NAME	COUNTRY	MAX HEIGHT	AVAILABILITY CARIBE WAVE 14	
			NOAA CO-OPS	IOC SEA LEVEL
Huelva	Spain	7.1 ft	*	X
Tarifa	Spain	5.9 ft	*	X
Cascais	Portugal	9.9 ft	**	X
La Palma	Spain	2.1 ft	*	X
Arrecife	Spain	3.1 ft	*	X
Point Delgada, Azores	Portugal	5.6 ft	*	X
Ferrol	Spain	1.7 ft	*	X
Dakar	Senegal	0.4 ft	*	X
Christiansted	USVI	1.3 ft	X	X
Lameshur Bay	USVI	3.2 ft	X	X
Charlotte Amalie	USVI	4.1 ft	X	X
Limetree Bay	USVI	1.1 ft	X	X
Mayaguez	Puerto Rico	2.7 ft	X	X Gap 11:00
Fajardo	Puerto Rico	2.7 ft	X	X
Arecibo	Puerto Rico	5.2 ft	X	X
Bermuda	UK	2.9 ft	Down	Down
Saint Johns	Canada	2.9 ft	*	Down
Halifax	Canada	1.9 ft	*	Down
Montauk, NY	USA	0.9 ft	X	X Gap 14:00
Ocean City, MD	USA	1.1 ft	X	Down
Nantucket, MA	USA	1.9 ft	X	
Atlantic City, NJ	USA	2.6 ft	X	X Gap 13:00
Virginia Beach, VA	USA	2.1 ft	*	
Duck, NC	USA	1.3 ft	X	X
Watch Hill, RI	USA	0.7 ft	*	
Portland, ME	USA	0.2 ft	X	Down
Trident Pier, FL	USA	2.1 ft	X	Down
Charleston, SC	USA	0.4 ft	X	
Key West, FL	USA	0.3 ft	X	X

Table II–1. NTWC Stations availability

Pacific Tsunami Warning Center (PTWC)

PACIFIC TSUNAMI WARNING CENTER					
STATION NAME	COUNTRY	MAX. WAVE HEIGHT	AVAILABILITY CARIBE WAVE 14		
			NOAA CO-OPS	IOC SEA LEVEL	TIDE TOOL
Tuxpan	Mexico	0.01 m / 0.0 ft		X	
Veracruz	Mexico	0.01 m / 0.0 ft		X	X
Cedros Bay	Trinidad & Tobago	0.64 m /2.1 ft		X	X
Grand Isle, LA	USA	0.01 m / 0.0 ft	X	X	X
Pensacola, FL	USA	0.01 m / 0.0 ft	X	X	X
Fort Fourchon, LA	USA	0.01 m / 0.0 ft	X		Down
Point Fortin	Trinidad & Tobago	1.05 m / 3.4ft		Down	
Walvis Bay, NA	USA	0.18 m / 0.6 ft		X	X
Pilots Station, LA	USA	0.01 m / 0.0 ft	X	X	X
Tristan Da Cunha	UK	0.21 m / 0.7 ft		Down	Down
Tacony Palmira Br, NJ	USA	0.68 m / 2.2 ft			
Reedy Point, DE	USA	0.69 m / 2.2 ft	X		
Philadelphia, PA	USA	0.69 m / 2.2 ft	X	Down	
Marcus Hook, PA	USA	0.69 m / 2.2 ft	X	Down	
Delaware City, DE	USA	0.69 m / 2.2 ft	X		
Chesapeake City, MD	USA	0.60 m / 2.0 ft	X		
Ship John Shoal, NJ	USA	0.60 m / 2.0 ft	X		
Woods Hole, MA	USA	0.67 m / 2.2 ft	X	X	
Money Point, VA	USA	0.81 m / 2.6 ft	X		
Salvador	Brazil	0.26 m / 0.9 ft		X	X
Key West, FL	USA	0.10 m / 0.3 ft	X	X	X
DART 42429	Gulf of Mexico	0.00 m / 0.0 ft	Down		
New London, CT	USA	0.73 m / 2.4 ft			
DART 42409	Gulf of Mexico	0.00 m / 0.0 ft	Down		
Sewells Point, VA	USA	0.76 m / 2.5 ft	X		
Vaca Key, FL	USA	0.14 m / 0.5 ft	X	Down	X
Puerto Morelos	Mexico	0.04 m / 0.1 ft		X	
Springmaid Pier, SC	USA	0.63 m / 2.1 ft	Down	Down	
Limon	Costa Rica	0.18 m / 0.6 ft		X	X

PACIFIC TSUNAMI WARNING CENTER					
STATION NAME	COUNTRY	MAX. WAVE HEIGHT	AVAILABILITY CARIBE WAVE 14		
			NOAA CO-OPS	IOC SEA LEVEL	TIDE TOOL
Trident Pier, FL	USA	1.32 m / 4.3 ft	X	Down	X
Charleston, SC	USA	0.70 m / 2.3 ft	X		X
New Bold, PA	USA	0.65 m / 2.1 ft	X	Down	
Bergen Point, NY	USA	0.60 m / 2.0 ft	X		
Kiptopeke, VA	USA	0.74 m / 2.4 ft	X	Down	
El Porvenir	Panama	0.15 m / 0.5 ft		X	X
San Andres	Colombia	0.13 m / 0.4 ft		X	X
Pointe Noire	Congo	0.26m / 0.8 ft		X	X
Wilmington, NC	USA	0.72 m / 2.3 ft	X	Down	X
Brandywine, DE	USA	0.69 m / 2.2 ft			
Chesapeake Bay, VA	USA	0.76 m / 2.5 ft	X	Down	
Wright Beach, NC	USA	0.72 m / 2.3 ft	X	Down	X
Quonset Point, RI	USA	0.53 m / 1.7 ft	X		
Providence, RI	USA	0.53 m / 1.7 ft	X		
Newport, RI	USA	0.53 m / 1.7 ft	X	X	
Conimicut Light, RI	USA	0.53 m / 1.7 ft	X		
Boston, MA	USA	0.67 m / 2.2 ft	X	X	
Sandy Hook, NJ	USA	0.60 m / 2.0 ft	X	Down	
Battery The, NY	USA	0.60 m / 2.0 ft	X	X	
Port Sonara	Cameroon	0.14 m / 0.5 ft		Down	
Burlington, NJ	USA	0.74 m / 2.4 ft	X		
Virginia Key, FL	USA	0.22 m / 0.7 ft	X		X
Lewes, DE	USA	0.69 m / 2.2 ft	X	Down	
Borden Flats Lt, MA	USA	0.57 m / 1.9 ft		Down	
Cape May, NJ	USA	0.60 m / 2.0 ft	X	X	
Kings Point, NY	USA	0.60 m / 2.0 ft	X		
Beaufort, NC	USA	0.68 m / 2.2 ft	X	X	X
Bridgeport, CT	USA	0.73 m / 2.4 ft	X	X	
Atlantic City, NJ	USA	0.69 m / 2.2 ft	X	X Gap 13:00	
Wachapreague, VA	USA	0.64 m /2.1 ft	X	Down	
Montauk, NY	USA	0.73 m / 2.4 ft	X	X Gap 14:00	
Settlement Point	Bahamas	0.60 m / 2.0 ft		X	X
Santa Marta	Colombia	0.21 m / 0.7 ft		X	X
Oregon Inlet, NC	USA	0.79 m / 2.6 ft	X	Down	

PACIFIC TSUNAMI WARNING CENTER					
STATION NAME	COUNTRY	MAX. WAVE HEIGHT	AVAILABILITY CARIBE WAVE 14		
			NOAA CO-OPS	IOC SEA LEVEL	TIDE TOOL
Port of Spain	Trinidad & Tobago	0.64 m /2.1 ft		X	X
Ocean City, MD	USA	0.74 m / 2.4 ft	X	Down	
New Haven, CT	USA	0.73 m / 2.4 ft	X	X	
Duck Pier, NC	USA	0.76 m / 2.5 ft	X	X	
Nantucket Island, MA	USA	0.57 m / 1.9 ft	X		
Saint Helena	UK	0.28 m / 0.9 ft		Down	
Tortola	UKVI	0.49 m / 1.6 ft		X Gap 14-16	X Gap 1416
Hatteras, NC	USA	0.79 m / 2.6 ft	X		
Port San Andres	Dominican Republic	0.34 m / 1.1 ft		X	X
Lagos	Nigeria	0.14 m / 0.4 ft		Down	
Barahona	Dominican Republic	0.24 m / 0.8 ft		X	X
Ile Royale	French Guiana	1.05 m / 3.5 ft		X	X
Cap Haitien	Haiti	0.71 m / 2.3 ft		X	X
Takoradi	Ghana	0.21 m / 0.7 ft		Down	
Prickley Bay	Grenada	0.45 m / 1.5 ft		X	X
Charlotte Amalie	USVI	0.53 m / 1.7 ft	X	X	X
Culebra Island	Puerto Rico	0.58 m / 1.9 ft	Down	Down	
Charlotteville	Trinidad & Tobago	0.77 m / 2.5 ft		X	X
DART 42407	Caribbean	0.03 m / 0.1 ft	X		X
Fortaleza	Brazil	0.78 m / 2.6 ft		X	X
Magueyes Island	Puerto Rico	0.44 m / 1.4 ft	X	X	X
Fajardo	Puerto Rico	0.74 m / 2.4 ft	X	X	X
Alexandria	Egypt	0.01 m / 0.0 ft		X	X
Puerto Plata	Dominican Republic	0.78 m / 2.6 ft		X	X
Lameshur Bay	USVI	0.52 m / 1.7 ft	X	X	X
Scarborough	Trinidad & Tobago	0.77 m / 2.5 ft		X	X
Punta Cana	Dominican Republic	0.83 m / 2.7 ft		X	X
Mona Island	Puerto Rico	0.61 m / 2.0 ft	Down	X Gap 13-16	X Gap 13-16
Isabelii Vieques	Puerto Rico	0.58 m / 1.9 ft	X	X	X
Penuelas	Puerto Rico	0.42 m / 1.4 ft	Down	Down	
Aguadilla	Puerto Rico	1.02 m / 3.4 ft	Down		
Mayaguez	Puerto Rico	0.94 m / 3.1 ft	X	X 1 gap 11:00	X
Barbuda	Antigua &	0.96 m / 3.1 ft	Down	Down	Down

PACIFIC TSUNAMI WARNING CENTER					
STATION NAME	COUNTRY	MAX. WAVE HEIGHT	AVAILABILITY CARIBE WAVE 14		
			NOAA CO-OPS	IOC SEA LEVEL	TIDE TOOL
	Barbuda				
Esperanza, Vieques	Puerto Rico	0.46 m / 1.5 ft	Down	Down	Down
Yabucoa	Puerto Rico	0.50 m / 1.7 ft	X	X	X
DART 41424	SC, USA	0.07 m / 0.2 ft	X		X
Arecibo	Puerto Rico	1.23 m / 4.0 ft	X	X	X
Limetree Bay	USVI	0.51 m / 1.7 ft	X	X	X
San Juan	Puerto Rico	1.07 m / 3.5 ft	X	X	X
Fort de France	Martinique	0.49 m / 1.6 ft		X	X
Bridgetown	Barbados	0.97 m / 3.2 ft		Down	
Ascencion	UK	0.30 m / 1.0 ft		X	
Roseau	Dominica	0.61 m / 2.0 ft		X	X
DART 41420	Northwest PR	0.11 m / 0.4 ft	X NDBC		X
Le Robert	Martinique	0.91 m / 3.0 ft		X	X
Point a Pitre	Guadeloupe	0.94 m / 3.1 ft		X	X
Le Precheur	Martinique	0.56 m / 1.8 ft		Down	Down
Deshaies	Guadeloupe	0.72 m / 2.4 ft		X	X
Port St. Charles	Barbados	1.31 m / 4.3 ft		X Gap 10-12	X
DART 44402	NY, USA	0.07 m / 0.2 ft	Down NDBC		
Parham	Antigua & Barbuda	0.96 m / 3.1 ft		X	X
Desirade Island	Guadeloupe	0.89 m / 2.9 ft		X	X
DART 41421	Northeast PR	0.11 m / 0.3 ft	X NDBC		X
Bermuda	UK	1.83 m / 6.0 ft	Down	Down	
DART 44401	Bermuda	0.09 m / 0.3 ft	Down NDBC		
Malin Head	Ireland	0.49 m / 1.6 ft		X Gap 10:00	
Dakar	Senegal	0.76 m / 2.5 ft		X	X
Nouakchott	Mauritania	0.68 m / 2.2 ft		X	X
Palmeira	Cape Verde	0.94m / 3.1 ft		X	X
Ponta Delgada	Portugal	3.73 m / 12.2 ft		X	X
Ferrol	Spain	1.19 m / 3.9 ft		X	
La Palma	Spain	2.35 m / 7.7 ft		X	
Tarifa	Spain	1.82 m / 5.9 ft		X	
Algeciras	Spain	0.89 m / 2.9 ft		X	
Huelva	Spain	2.18 m / 7.1 ft		X	

Table II–2. PTWC Stations availability

Instituto Portugues do Mar e da Atmosfera (IPMA)

INSTITUTO PORTUGUES DO MAR E DA ATMOSFERA				
STATION NAME	COUNTRY	MAX. WAVE HEIGHT	AVAILABILITY CARIBE WAVE 14	
			IOC SEALEVEL	
Lagos	Portugal	7.0 m / 23.0 ft	X	
Sines	Portugal	4.02 m / 13.2 ft		
Cascais	Portugal	3.00 m / 9.8 ft	X	
Setubal	Portugal	1.93 m / 6.3 ft		
Peniche	Portugal	2.21 m / 7.3 ft		
Funchal	Portugal	2.51 m / 8.2 ft		
Gibraltar	UK	1.00 m / 3.3 ft	X Gap 11:00	
Casablanca	Morocco	3.90 m / 12.8 ft		
Huelva	Spain	4.00 m / 13.1 ft	X	
Leixoes	Portugal	1.50 m / 4.9 ft		
Santa Maria	Portugal	1.30 m / 4.3 ft		
Ferrol	Spain	0.94 m / 3.1 ft	X	
Ponta Delgada	Portugal	1.10 m / 3.6 ft	X	
Castletownbere	Ireland	0.42 m / 1.4 ft	X	
Brest	France	0.33 m / 1.1 ft	X	
Ballyglass Pier	Ireland	0.43 m / 1.4 ft	X Gap 14:00	
Newlyn	UK	0.33 m / 1.1 ft	X	
Saint Nazaire	France	0.70 m / 2.3 ft	X	
Qaqortoq	Denmark	1.04 m / 3.4 ft	X	
Reykjavik	Iceland	0.40 m / 1.3 ft	X	

Table II–3. IPMA Stations availability

Tsunami Warning Center Stations Statistics (NTWC Statistics)

NTWC STATISTICS		
IOC	Stations in Real Time	19
	Stations Down	6
	Stations Not Available	4
	Total Stations	29
	Percentage in RTX	66%
CO-OPS	Stations in Real Time	16
	Stations Down	1
	Stations Not Available	12
	Total Stations	29
	Percentage in RTX	55%

Table II–4. NTWC Statistics

PTWC Statistics

PTWC STATISTICS		
IOC	Stations in Real Time	70
	Stations Down	29
	Stations Not Available	29
	Total Stations	128
	Percentage in RTX	55%
CO-OPS	Stations in Real Time	60
	Stations Down	12
	Stations Not Available	56
	Total Stations	128
	Percentage in RTX	47%
Tide Tool	Stations in Real Time	61
	Stations Down	5
	Stations Not Available	62
	Total Stations	128
	Percentage in RTX	48%

Table II–5. PTWC Statistics

IPMA Statistics

IPMA STATISTICS		
IOC	Stations in Real Time	13
	Stations Down	0
	Stations Not Available	7
	Total Stations	20
	Percentage in RTX	65%

Table II–6.IPMA Statistics

IOC Stations Performances

IOC STATIONS PERFORMANCE FOR NTWC	
Contributing in RTX	19
Down	6
Total	25
Percentage	76%

Table II–7. IOC Stations performance for NTWC

IOC STATIONS PERFORMANCE FOR PTWC	
Contributing in RTX	70
Down	29
Total	99
Percentage	71%

Table II–8.IOC Stations performance for PTWC

IOC STATIONS PERFORMANCE FOR IPMA	
Contributing in RTX	13
Down	0
Total	13
Percentage	100%

Table II–9. IOC Stations performance for IPMA

CO-OPS Stations Performances

CO-OPS STATIONS PERFORMANCE FOR NTWC	
Contributing in RTX	16
Down	1
Total	17
Percentage	94%

Table II–10. CO-OPS Stations performance for NTWC

CO-OPS STATIONS PERFORMANCE FOR PTWC	
Contributing in RTX	60
Down	12
Total	72
Percentage	83%

Table II–11. CO-OPS Stations performance for PTWC

TIDE TOOL STATIONS PERFORMANCE FOR PTWC	
Contributing in RTX	61
Down	5
Total	66
Percentage	92%

Table II–12. Tide tool Stations performance for PTWC

Wave Height Models Differences

WAVE HEIGHT MODEL DIFFERENCES						
Station Name	NTWC Wave Heigth	PTWC Wave Height	IPMA Wave Height	Wave Height Differences between PTWC and NTWC	Wave Height Differences between PTWC and IPMA	Wave Height Differences between NTWC and IPMA
Cascais	9.9 ft		9.8 ft			0.1 ft
Huelva	7.1 ft	7.1 ft	13.1 ft	0.0 ft	6.0 ft	6.0 ft
Ferrol	1.7 ft	3.9 ft	3.1 ft	2.2 ft	0.8 ft	1.4 ft
Ponta Delgada	5.6 ft	12.2 ft	3.6 ft	6.6 ft	8.6 ft	2.0 ft
Tarifa	5.9 ft	5.9 ft		0.0 ft		
La Palma	2.1 ft	7.7 ft		5.6 ft		
Dakar	0.4 ft	2.5 ft		2.1 ft		
Lameshur Bay	3.2 ft	1.7 ft		1.5 ft		
Charlotte Amalie	4.1 ft	1.7 ft		2.4 ft		
Limetree Bay	1.1 ft	1.7 ft		0.6 ft		
Mayaguez	2.7 ft	3.1 ft		0.4 ft		
Fajardo	2.7 ft	2.4 ft		0.3 ft		
Arecibo	5.2 ft	4.0 ft		1.2 ft		
Bermuda	2.9 ft	6.0 ft		3.1 ft		
Montauk, NY	0.9 ft	2.4 ft		1.5 ft		
Ocean City, MD	1.1 ft	2.4 ft		1.3 ft		
Nantucket , MA	1.9 ft	1.9 ft		0.0 ft		
Atlantic City, NJ	2.6 ft	2.2 ft		0.4 ft		
Duck, NC	1.3 ft	2.5 ft		1.2 ft		
Trident Pier, FL	2.1 ft	4.3 ft		2.2 ft		
Charlesto n, SC	0.4 ft	2.3 ft		1.9 ft		
Key West, FL	0.3 ft	0.3 ft		0.0 ft		

Table II–13. Wave height model differences

Legend

<1 ft difference
Between 1-2 ft
> 2 ft difference

ANNEX III

ENHANCED PRODUCTS

GRAPHICAL PRODUCTS

The three graphical products and the accompanying text products were prepared for the Caribe Wave/Lantex 14 Exercise. For the forecasted wave heights, PTWC used the RIFT Tsunami Forecast Model. These products are based on the following earthquake parameters: Origin: 03/26/2014 10:00:00 UTC and Coordinates: 36.04 N 10.75 W Depth: 5 km Magnitude: 8.58.

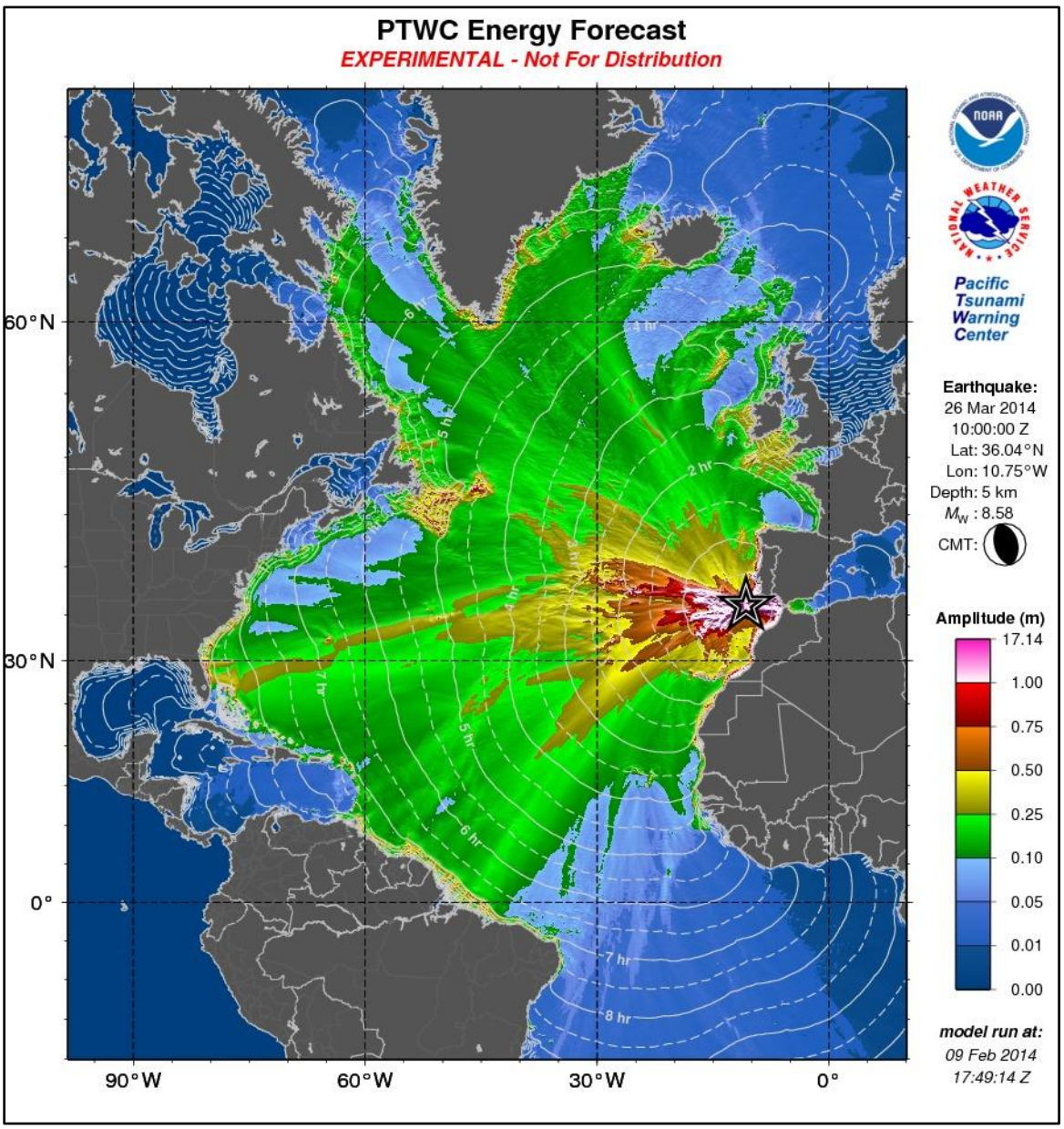

Figure III–1. Energy Forecast map for 26 March 2014 Caribe Wave/Lantex Scenario earthquake/tsunami.

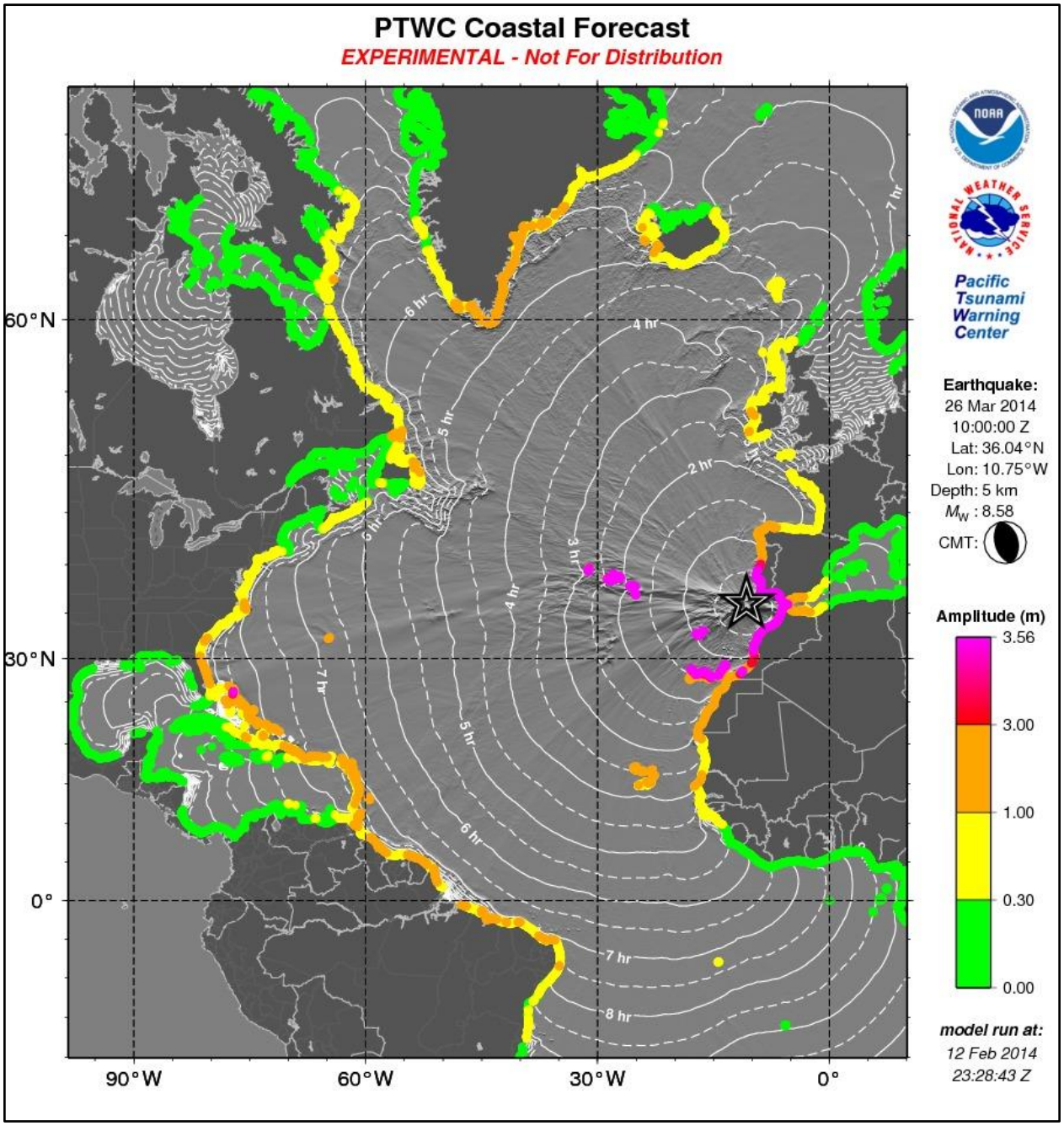

Figure III–2. Coastal forecasts
for Caribe Wave/Lantex 14 Scenario earthquake/tsunami

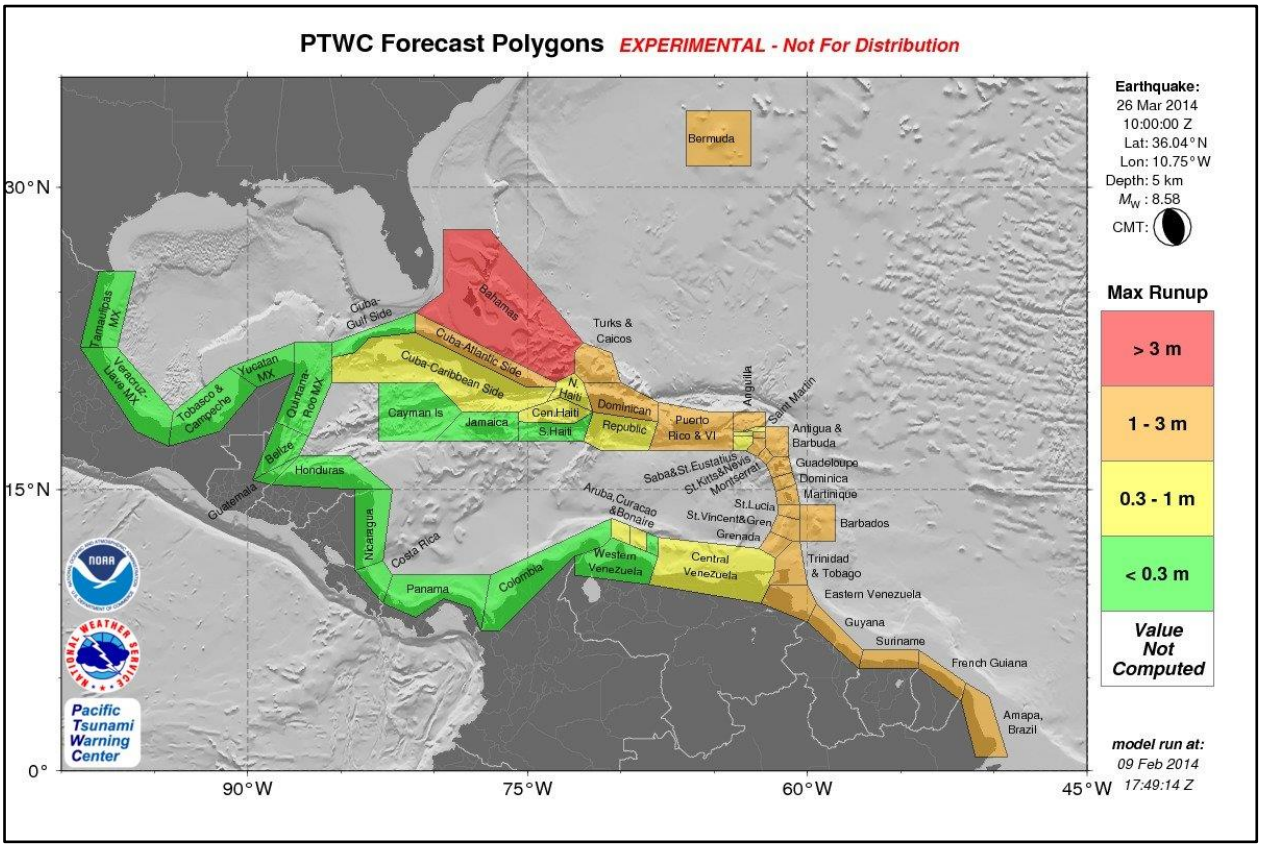

Figure III–3. PTWC Forecast Polygons
for Caribe Wave/Lantex 14 Scenario earthquake/tsunami.

TEXT PRODUCTS

ZCZC
WECA41 PHEB 261005
TSUCAX

EXPERIMENTAL TSUNAMI MESSAGE NUMBER 1
NOT FOR DISTRIBUTION
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
1005 UCT WED MAR 26 2014

...TSUNAMI THREAT MESSAGE...

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE *****

THIS MESSAGE IS ISSUED FOR INFORMATION ONLY IN SUPPORT OF THE UNESCO/IOC TSUNAMI AND OTHER COASTAL HAZARDS WARNING SYSTEM FOR THE CARIBBEAN AND ADJACENT REGIONS... THE CARIBE-EWS... AND IS MEANT FOR NATIONAL AUTHORITIES IN EACH COUNTRY OF THAT SYSTEM.

NATIONAL AUTHORITIES WILL DETERMINE THE TSUNAMI THREAT AND APPROPRIATE LEVEL OF ALERT FOR EACH COUNTRY.

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE *****

PRELIMINARY EARTHQUAKE PARAMETERS
---

* MAGNITUDE 8.0
* ORIGIN TIME 1000 UTC MAR 26 2014
* COORDINATES 36.0 NORTH 10.8 WEST
* DEPTH 5 KM / 3 MILES
* LOCATION AZORES-CAPE ST. VINCENT RIDGE

EVALUATION
---

* AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 8.0 OCCURRED NEAR THE AZORES-CAPE SAINT VINCENT RIDGE AT 1000 UTC ON WEDNESDAY MARCH 26 2014.

* BASED ON THE PRELIMINARY EARTHQUAKE PARAMETERS... HAZARDOUS TSUNAMI WAVES ARE POSSIBLE FOR SOME COASTS OF THE CARIBE-EWS.

* THE EARTHQUAKE AND POTENTIAL TSUNAMI ARE STILL BEING EVALUATED.

TSUNAMI THREAT FORECAST
---

* THERE ARE INSUFFICIENT DATA AT THIS TIME TO GENERATE A TSUNAMI FORECAST. A FORECAST WILL BE DISSEMINATED AS SOON AS THE DATA PERMIT.

* IF A TSUNAMI WAS GENERATED... THE EARLIEST ESTIMATED TIME OF ARRIVAL OF THE TSUNAMI IN THE CARIBE-EWS IS 1647 UTC AT RUTHS BAY... BERMUDA.

RECOMMENDED ACTIONS
---

* GOVERNMENT AGENCIES RESPONSIBLE FOR TSUNAMIS SHOULD TAKE APPROPRIATE ACTION IN RESPONSE TO THIS POTENTIAL TSUNAMI THREAT AND STAY ALERT FOR ADDITIONAL INFORMATION.

* PERSONS LOCATED IN COASTAL AREAS OF THE CARIBE-EWS SHOULD FOLLOW INSTRUCTIONS FROM NATIONAL AND LOCAL AUTHORITIES.

ESTIMATED TIMES OF ARRIVAL
---

* ESTIMATED TIMES OF ARRIVAL -ETA- OF THE TSUNAMI... IF ONE WAS GENERATED... FOR POINTS WITHIN THE CARIBE-EWS.

LOCATION	REGION	COORDINATES	ETA(UTC)
RUTHS BAY	BERMUDA	32.4N 64.6W	1647 03/26
ROSEAU	DOMINICA	15.3N 61.4W	1718 03/26
PLYMOUTH	MONTSERRAT	16.7N 62.2W	1718 03/26
BRIDGETOWN	BARBADOS	13.1N 59.6W	1718 03/26
CASTRIES	SAINT LUCIA	14.0N 61.0W	1719 03/26
BASSE TERRE	GUADELOUPE	16.0N 61.7W	1722 03/26
SINT EUSTATIUS	SINT EUSTATIUS	17.5N 63.0W	1723 03/26
SABA	SABA	17.6N 63.2W	1724 03/26
FORT DE FRANCE	MARTINIQUE	14.6N 61.1W	1725 03/26
THE VALLEY	ANGUILLA	18.3N 63.1W	1727 03/26
SAINT JOHNS	ANTIGUA	17.1N 61.9W	1727 03/26
BASSETERRE	SAINT KITTS	17.3N 62.7W	1728 03/26
PALMETTO POINT	BARBUDA	17.6N 61.9W	1728 03/26
SIMPSON BAAI	SINT MAARTEN	18.0N 63.1W	1731 03/26
KINGSTOWN	SAINT VINCENT	13.1N 61.2W	1736 03/26
CABO ENGANO	DOMINICAN REP	18.6N 68.3W	1751 03/26
GRAND TURK	TURKS N CAICOS	21.5N 71.1W	1752 03/26
PUERTO PLATA	DOMINICAN REP	19.8N 70.7W	1753 03/26
SAINT BARTHELEM	SAINT BARTHELEMY	17.9N 62.8W	1754 03/26
PIRATES BAY	TRINIDAD TOBAGO	11.3N 60.6W	1801 03/26
MAYAGUANA	BAHAMAS	22.3N 73.0W	1802 03/26
SAINT GEORGES	GRENADA	12.0N 61.8W	1803 03/26
BAIE BLANCHE	SAINT MARTIN	18.1N 63.0W	1805 03/26
WEST CAICOS	TURKS N CAICOS	21.7N 72.5W	1805 03/26
SAN SALVADOR	BAHAMAS	24.1N 74.5W	1808 03/26
CAP HAITEN	HAITI	19.8N 72.2W	1809 03/26
SANTO DOMINGO	DOMINICAN REP	18.5N 69.9W	1816 03/26
LONG ISLAND	BAHAMAS	23.3N 75.1W	1821 03/26
GREAT INAGUA	BAHAMAS	20.9N 73.7W	1823 03/26
EXUMA	BAHAMAS	23.6N 75.9W	1824 03/26
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CAYENNE	FRENCH GUIANA	4.9N 52.3W	1847 03/26
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PORT AU PRINCE	HAITI	18.5N 72.4W	1934 03/26
CIENFUEGOS	CUBA	22.0N 80.5W	1937 03/26
GEORGETOWN	GUYANA	6.8N 58.2W	2033 03/26
PARAMARIBO	SURINAME	5.9N 55.2W	2033 03/26
PORLAMAR	VENEZUELA	10.9N 63.8W	2157 03/26
SANTA CRZ D SUR	CUBA	20.7N 78.0W	2201 03/26
ILHA DE MARACA	BRAZIL	2.2N 50.5W	2210 03/26
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POTENTIAL IMPACTS

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ZCZC
WECA41 PHEB 261103
TSUCAX

EXPERIMENTAL TSUNAMI MESSAGE NUMBER 1
NOT FOR DISTRIBUTION
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
1103 UCT WED MAR 26 2014

...TSUNAMI THREAT MESSAGE...

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UNESCO/IOC TSUNAMI AND OTHER COASTAL HAZARDS WARNING SYSTEM FOR
THE CARIBBEAN AND ADJACENT REGIONS... THE CARIBE-EWS... AND IS
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NATIONAL AUTHORITIES WILL DETERMINE THE TSUNAMI THREAT AND
APPROPRIATE LEVEL OF ALERT FOR EACH COUNTRY.

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE *****

UPDATES
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* THE EARTHQUAKE MAGNITUDE HAS BEEN UPGRADED FROM 8.0 TO 8.5.
* A FORECAST OF THE TSUNAMI THREAT IS NOW INCLUDED.

PRELIMINARY EARTHQUAKE PARAMETERS - UPDATED
---

* MAGNITUDE 8.5
* ORIGIN TIME 1000 UTC MAR 26 2014
* COORDINATES 36.0 NORTH 10.8 WEST

* DEPTH 5 KM / 3 MILES
* LOCATION AZORES-CAPE ST. VINCENT RIDGE

EVALUATION
---

* AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 8.5 OCCURRED NEAR THE AZORES-CAPE SAINT VINCENT RIDGE AT 1000 UTC ON WEDNESDAY MARCH 26 2014.

* BASED ON THE PRELIMINARY EARTHQUAKE PARAMETERS... HAZARDOUS TSUNAMI WAVES ARE FORECAST FOR SOME COASTS.

TSUNAMI THREAT FORECAST
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RECOMMENDED ACTIONS
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SABA	SABA	17.6N 63.2W	1724 03/26
FORT DE FRANCE	MARTINIQUE	14.6N 61.1W	1725 03/26
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BASSETERRE	SAINT KITTS	17.3N 62.7W	1728 03/26
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SIMPSON BAAI	SINT MAARTEN	18.0N 63.1W	1731 03/26
KINGSTOWN	SAINT VINCENT	13.1N 61.2W	1736 03/26
CABO ENGANO	DOMINICAN REP	18.6N 68.3W	1751 03/26
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PIRATES BAY	TRINIDAD TOBAGO	11.3N 60.6W	1801 03/26
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WECA41 PHEB 261204
TSUCAX

EXPERIMENTAL TSUNAMI MESSAGE NUMBER 1
NOT FOR DISTRIBUTION
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
1204 UCT WED MAR 26 2014

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* MAGNITUDE 8.5
* ORIGIN TIME 1000 UTC MAR 26 2014
* COORDINATES 36.0 NORTH 10.8 WEST
* DEPTH 5 KM / 3 MILES

* LOCATION AZORES-CAPE ST. VINCENT RIDGE

EVALUATION
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TSUNAMI OBSERVATIONS

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* THE FOLLOWING ARE TSUNAMI WAVE OBSERVATIONS FROM COASTAL AND/OR DEEP-OCEAN SEA LEVEL GAUGES AT THE INDICATED LOCATIONS. THE MAXIMUM TSUNAMI HEIGHT IS MEASURED WITH RESPECT TO THE TIDE LEVEL.

GAUGE LOCATION	GAUGE COORDINATES LAT LON	TIME OF MEASURE (UTC)	MAXIMUM TSUNAMI HEIGHT	WAVE PERIOD (MIN)
TARIFA ES	36.0N 5.6W	1145	1.82M/ 5.9FT	21
ALGECIRAS ES	36.2N 5.4W	1138	0.89M/ 2.9FT	27
HUELVA ES	37.1N 6.8W	1130	2.18M/ 7.1FT	19

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WECA41 PHEB 261300
TSUCAX

EXPERIMENTAL TSUNAMI MESSAGE NUMBER 1
NOT FOR DISTRIBUTION
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
1300 UCT WED MAR 26 2014

...TSUNAMI THREAT MESSAGE...

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE *****

THIS MESSAGE IS ISSUED FOR INFORMATION ONLY IN SUPPORT OF THE UNESCO/IOC TSUNAMI AND OTHER COASTAL HAZARDS WARNING SYSTEM FOR THE CARIBBEAN AND ADJACENT REGIONS... THE CARIBE-EWS... AND IS MEANT FOR NATIONAL AUTHORITIES IN EACH COUNTRY OF THAT SYSTEM.

NATIONAL AUTHORITIES WILL DETERMINE THE TSUNAMI THREAT AND APPROPRIATE LEVEL OF ALERT FOR EACH COUNTRY.

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE *****

UPDATES
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* ADDITIONAL TSUNAMI OBSERVATIONS ARE NOW INCLUDED.

PRELIMINARY EARTHQUAKE PARAMETERS
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* MAGNITUDE 8.5
* ORIGIN TIME 1000 UTC MAR 26 2014
* COORDINATES 36.0 NORTH 10.8 WEST
* DEPTH 5 KM / 3 MILES

* LOCATION AZORES-CAPE ST. VINCENT RIDGE

EVALUATION
---

* AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 8.5 OCCURRED NEAR THE AZORES-CAPE SAINT VINCENT RIDGE AT 1000 UTC ON WEDNESDAY MARCH 26 2014.

* TSUNAMI WAVES HAVE BEEN OBSERVED.

* BASED ON THE PRELIMINARY EARTHQUAKE PARAMETERS... HAZARDOUS TSUNAMI WAVES ARE FORECAST FOR SOME COASTS.

TSUNAMI THREAT FORECAST
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* TSUNAMI WAVES REACHING MORE THAN 3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE ALONG SOME COASTS OF

BAHAMAS.

* TSUNAMI WAVES REACHING 1 TO 3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE ALONG SOME COASTS OF

BRAZIL... CUBA... DOMINICAN REPUBLIC... GUYANA... SURINAME... ANGUILLA... ANTIGUA AND BARBUDA... BARBADOS... BERMUDA... DOMINICA... FRENCH GUIANA... GRENADA... GUADELOUPE... MARTINIQUE... MONTSERRAT... SAINT KITTS AND NEVIS... SAINT LUCIA... SAINT BARTHELEMY... SAINT VINCENT AND THE GRENADINES... TRINIDAD AND TOBAGO... TURKS AND CAICOS ISLANDS... AND VENEZUELA.

* TSUNAMI WAVES REACHING 0.3 TO 1 METERS ABOVE THE TIDE LEVEL

ARE POSSIBLE FOR SOME COASTS OF

HAITI... ARUBA... CURACAO... SINT MAARTEN... SABA AND SINT EUSTATIUS... AND SAINT MARTIN.

* TSUNAMI WAVES LESS THAN 0.3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE FOR SOME COASTS OF

COLOMBIA... COSTA RICA... HONDURAS... GUATEMALA... MEXICO... NICARAGUA... PANAMA... BELIZE... CAYMAN ISLANDS... JAMAICA... AND BONAIRE.

* ACTUAL AMPLITUDES AT THE COAST MAY VARY FROM FORECAST AMPLITUDES DUE TO UNCERTAINTIES IN THE FORECAST AND LOCAL FEATURES. IN PARTICULAR MAXIMUM TSUNAMI AMPLITUDES ON ATOLLS WILL LIKELY BE MUCH SMALLER THAN THE FORECAST INDICATES.

* FOR OTHER AREAS COVERED BY THIS PRODUCT A FORECAST HAS NOT YET BEEN COMPUTED. THE FORECAST WILL BE EXPANDED AS NECESSARY IN SUBSEQUENT PRODUCTS.

RECOMMENDED ACTIONS
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* GOVERNMENT AGENCIES RESPONSIBLE FOR THREATENED COASTAL AREAS SHOULD TAKE ACTION TO INFORM AND INSTRUCT ANY COASTAL POPULATIONS AT RISK IN ACCORDANCE WITH THEIR OWN EVALUATION... PROCEDURES AND THE LEVEL OF THREAT.

* PERSONS LOCATED IN THREATENED COASTAL AREAS SHOULD STAY ALERT FOR INFORMATION AND FOLLOW INSTRUCTIONS FROM NATIONAL AND LOCAL AUTHORITIES.

ESTIMATED TIMES OF ARRIVAL

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* ESTIMATED TIMES OF ARRIVAL -ETA- OF THE INITIAL TSUNAMI WAVE FOR POINTS WITHIN THREATENED REGIONS ARE GIVEN BELOW. ACTUAL ARRIVAL TIMES MAY DIFFER AND THE INITIAL WAVE MAY NOT BE THE LARGEST. A TSUNAMI IS A SERIES OF WAVES AND THE TIME BETWEEN WAVES CAN BE FIVE MINUTES TO ONE HOUR.

LOCATION	REGION	COORDINATES	ETA(UTC)
RUTHS BAY	BERMUDA	32.4N 64.6W	1647 03/26
ROSEAU	DOMINICA	15.3N 61.4W	1718 03/26
PLYMOUTH	MONTSERRAT	16.7N 62.2W	1718 03/26
BRIDGETOWN	BARBADOS	13.1N 59.6W	1718 03/26
CASTRIES	SAINT LUCIA	14.0N 61.0W	1719 03/26
BASSE TERRE	GUADELOUPE	16.0N 61.7W	1722 03/26
SINT EUSTATIUS	SINT EUSTATIUS	17.5N 63.0W	1723 03/26
SABA	SABA	17.6N 63.2W	1724 03/26
FORT DE FRANCE	MARTINIQUE	14.6N 61.1W	1725 03/26
THE VALLEY	ANGUILLA	18.3N 63.1W	1727 03/26
SAINT JOHNS	ANTIGUA	17.1N 61.9W	1727 03/26
BASSETERRE	SAINT KITTS	17.3N 62.7W	1728 03/26
PALMETTO POINT	BARBUDA	17.6N 61.9W	1728 03/26
SIMPSON BAAI	SINT MAARTEN	18.0N 63.1W	1731 03/26
KINGSTOWN	SAINT VINCENT	13.1N 61.2W	1736 03/26
CABO ENGANO	DOMINICAN REP	18.6N 68.3W	1751 03/26
GRAND TURK	TURKS N CAICOS	21.5N 71.1W	1752 03/26
PUERTO PLATA	DOMINICAN REP	19.8N 70.7W	1753 03/26
SAINT BARTHELEM	SAINT BARTHELEMY	17.9N 62.8W	1754 03/26
PIRATES BAY	TRINIDAD TOBAGO	11.3N 60.6W	1801 03/26
MAYAGUANA	BAHAMAS	22.3N 73.0W	1802 03/26
SAINT GEORGES	GRENADA	12.0N 61.8W	1803 03/26
BAIE BLANCHE	SAINT MARTIN	18.1N 63.0W	1805 03/26
WEST CAICOS	TURKS N CAICOS	21.7N 72.5W	1805 03/26
SAN SALVADOR	BAHAMAS	24.1N 74.5W	1808 03/26
CAP HAITEN	HAITI	19.8N 72.2W	1809 03/26
SANTO DOMINGO	DOMINICAN REP	18.5N 69.9W	1816 03/26
LONG ISLAND	BAHAMAS	23.3N 75.1W	1821 03/26

GREAT INAGUA	BAHAMAS	20.9N 73.7W	1823 03/26
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SANTIAGO D CUBA	CUBA	19.9N 75.8W	1844 03/26
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BIMINI	BAHAMAS	25.8N 79.3W	1912 03/26
PORT AU PRINCE	HAITI	18.5N 72.4W	1934 03/26
CIENFUEGOS	CUBA	22.0N 80.5W	1937 03/26
GEORGETOWN	GUYANA	6.8N 58.2W	2033 03/26
PARAMARIBO	SURINAME	5.9N 55.2W	2033 03/26
PORLAMAR	VENEZUELA	10.9N 63.8W	2157 03/26
SANTA CRZ D SUR	CUBA	20.7N 78.0W	2201 03/26
ILHA DE MARACA	BRAZIL	2.2N 50.5W	2210 03/26
NUEVA GERONA	CUBA	21.9N 82.8W	2339 03/26

POTENTIAL IMPACTS

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* A TSUNAMI IS A SERIES OF WAVES. THE TIME BETWEEN WAVE CRESTS CAN VARY FROM 5 MINUTES TO AN HOUR. THE HAZARD MAY PERSIST FOR MANY HOURS OR LONGER AFTER THE INITIAL WAVE.

* IMPACTS CAN VARY SIGNIFICANTLY FROM ONE SECTION OF COAST TO THE NEXT DUE TO LOCAL BATHYMETRY AND THE SHAPE AND ELEVATION OF THE SHORELINE.

* IMPACTS CAN ALSO VARY DEPENDING UPON THE STATE OF THE TIDE AT THE TIME OF THE MAXIMUM TSUNAMI WAVES.

* PERSONS CAUGHT IN THE WATER OF A TSUNAMI MAY DROWN... BE CRUSHED BY DEBRIS IN THE WATER... OR BE SWEPT OUT TO SEA.

TSUNAMI OBSERVATIONS

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* THE FOLLOWING ARE TSUNAMI WAVE OBSERVATIONS FROM COASTAL AND/OR DEEP-OCEAN SEA LEVEL GAUGES AT THE INDICATED LOCATIONS. THE MAXIMUM TSUNAMI HEIGHT IS MEASURED WITH RESPECT TO THE TIDE LEVEL.

GAUGE LOCATION	GAUGE COORDINATES LAT	LON	TIME OF MEASURE (UTC)	MAXIMUM TSUNAMI HEIGHT	WAVE PERIOD (MIN)
PONTA DELGADA PT	37.7N	25.7W	1214	3.73M/12.2FT	23
FERROL ES	43.5N	8.3W	1207	1.19M/ 3.9FT	22
LA PALMA ES	28.7N	17.8W	1148	2.35M/ 7.7FT	15
TARIFA ES	36.0N	5.6W	1145	1.82M/ 5.9FT	21
ALGECIRAS ES	36.2N	5.4W	1138	0.89M/ 2.9FT	27
HUELVA ES	37.1N	6.8W	1130	2.18M/ 7.1FT	19

NEXT UPDATE AND ADDITIONAL INFORMATION

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* THE NEXT MESSAGE WILL BE ISSUED IN ONE HOUR... OR SOONER IF THE SITUATION WARRANTS.

* AUTHORITATIVE INFORMATION ABOUT THE EARTHQUAKE FROM THE U.S.

GEOLOGICAL SURVEY CAN BE FOUND ON THE INTERNET AT
EARTHQUAKE.USGS.GOV/EARTHQUAKES -ALL IN SMALL LETTERS-.

* FURTHER INFORMATION ABOUT THIS EVENT MAY BE FOUND AT
PTWC.WEATHER.GOV AND AT WWW.TSUNAMI.GOV.

* COASTAL REGIONS OF PUERTO RICO... THE U.S. VIRGIN ISLANDS AND
THE BRITISH VIRGIN ISLANDS SHOULD REFER TO WEST COAST AND
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TSUCAX

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	GAUGE COORDINATES		TIME OF MEASURE	MAXIMUM TSUNAMI	WAVE PERIOD
GAUGE LOCATION	LAT	LON	(UTC)	HEIGHT	(MIN)
PALMEIRA CAPE VERDE	16.8N	23.0W	1344	0.94M/ 3.1FT	30
PONTA DELGADA PT	37.7N	25.7W	1214	3.73M/12.2FT	23
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WECA41 PHEB 261500
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RECOMMENDED ACTIONS
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* GOVERNMENT AGENCIES RESPONSIBLE FOR THREATENED COASTAL AREAS SHOULD TAKE ACTION TO INFORM AND INSTRUCT ANY COASTAL POPULATIONS AT RISK IN ACCORDANCE WITH THEIR OWN EVALUATION... PROCEDURES AND THE LEVEL OF THREAT.

* PERSONS LOCATED IN THREATENED COASTAL AREAS SHOULD STAY ALERT FOR INFORMATION AND FOLLOW INSTRUCTIONS FROM NATIONAL AND LOCAL AUTHORITIES.

ESTIMATED TIMES OF ARRIVAL
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* ESTIMATED TIMES OF ARRIVAL -ETA- OF THE INITIAL TSUNAMI WAVE FOR POINTS WITHIN THREATENED REGIONS ARE GIVEN BELOW. ACTUAL ARRIVAL TIMES MAY DIFFER AND THE INITIAL WAVE MAY NOT BE THE LARGEST. A TSUNAMI IS A SERIES OF WAVES AND THE TIME BETWEEN WAVES CAN BE FIVE MINUTES TO ONE HOUR.

LOCATION	REGION	COORDINATES	ETA(UTC)
RUTHS BAY	BERMUDA	32.4N 64.6W	1647 03/26
ROSEAU	DOMINICA	15.3N 61.4W	1718 03/26
PLYMOUTH	MONTSERRAT	16.7N 62.2W	1718 03/26
BRIDGETOWN	BARBADOS	13.1N 59.6W	1718 03/26
CASTRIES	SAINT LUCIA	14.0N 61.0W	1719 03/26
BASSE TERRE	GUADELOUPE	16.0N 61.7W	1722 03/26
SINT EUSTATIUS	SINT EUSTATIUS	17.5N 63.0W	1723 03/26
SABA	SABA	17.6N 63.2W	1724 03/26
FORT DE FRANCE	MARTINIQUE	14.6N 61.1W	1725 03/26
THE VALLEY	ANGUILLA	18.3N 63.1W	1727 03/26
SAINT JOHNS	ANTIGUA	17.1N 61.9W	1727 03/26
BASSETERRE	SAINT KITTS	17.3N 62.7W	1728 03/26
PALMETTO POINT	BARBUDA	17.6N 61.9W	1728 03/26
SIMPSON BAAI	SINT MAARTEN	18.0N 63.1W	1731 03/26
KINGSTOWN	SAINT VINCENT	13.1N 61.2W	1736 03/26
CABO ENGANO	DOMINICAN REP	18.6N 68.3W	1751 03/26
GRAND TURK	TURKS N CAICOS	21.5N 71.1W	1752 03/26
PUERTO PLATA	DOMINICAN REP	19.8N 70.7W	1753 03/26
SAINT BARTHELEM	SAINT BARTHELEMY	17.9N 62.8W	1754 03/26
PIRATES BAY	TRINIDAD TOBAGO	11.3N 60.6W	1801 03/26
MAYAGUANA	BAHAMAS	22.3N 73.0W	1802 03/26
SAINT GEORGES	GRENADA	12.0N 61.8W	1803 03/26
BAIE BLANCHE	SAINT MARTIN	18.1N 63.0W	1805 03/26
WEST CAICOS	TURKS N CAICOS	21.7N 72.5W	1805 03/26
SAN SALVADOR	BAHAMAS	24.1N 74.5W	1808 03/26
CAP HAITEN	HAITI	19.8N 72.2W	1809 03/26
SANTO DOMINGO	DOMINICAN REP	18.5N 69.9W	1816 03/26
LONG ISLAND	BAHAMAS	23.3N 75.1W	1821 03/26
GREAT INAGUA	BAHAMAS	20.9N 73.7W	1823 03/26
EXUMA	BAHAMAS	23.6N 75.9W	1824 03/26

CAT ISLAND	BAHAMAS	24.4N 75.5W	1824 03/26
BARACOA	CUBA	20.4N 74.5W	1827 03/26
ELEUTHERA ISLAN	BAHAMAS	25.2N 76.1W	1829 03/26
CROOKED ISLAND	BAHAMAS	22.7N 74.1W	1834 03/26
JACAMEL	HAITI	18.1N 72.5W	1835 03/26
ANDROS ISLAND	BAHAMAS	25.0N 77.9W	1835 03/26
GIBARA	CUBA	21.1N 76.1W	1837 03/26
ORANJESTAD	ARUBA	12.5N 70.0W	1837 03/26
JEREMIE	HAITI	18.6N 74.1W	1841 03/26
SANTIAGO D CUBA	CUBA	19.9N 75.8W	1844 03/26
NASSAU	BAHAMAS	25.1N 77.4W	1847 03/26
CAYENNE	FRENCH GUIANA	4.9N 52.3W	1847 03/26
MAIQUETIA	VENEZUELA	10.6N 67.0W	1850 03/26
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ABACO ISLAND	BAHAMAS	26.6N 77.1W	1858 03/26
FREEPORT	BAHAMAS	26.5N 78.8W	1859 03/26
CUMANA	VENEZUELA	10.5N 64.2W	1903 03/26
PORT OF SPAIN	TRINIDAD TOBAGO	10.6N 61.5W	1908 03/26
BIMINI	BAHAMAS	25.8N 79.3W	1912 03/26
PORT AU PRINCE	HAITI	18.5N 72.4W	1934 03/26
CIENFUEGOS	CUBA	22.0N 80.5W	1937 03/26
GEORGETOWN	GUYANA	6.8N 58.2W	2033 03/26
PARAMARIBO	SURINAME	5.9N 55.2W	2033 03/26
PORLAMAR	VENEZUELA	10.9N 63.8W	2157 03/26
SANTA CRZ D SUR	CUBA	20.7N 78.0W	2201 03/26
ILHA DE MARACA	BRAZIL	2.2N 50.5W	2210 03/26
NUEVA GERONA	CUBA	21.9N 82.8W	2339 03/26

POTENTIAL IMPACTS

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* A TSUNAMI IS A SERIES OF WAVES. THE TIME BETWEEN WAVE CRESTS CAN VARY FROM 5 MINUTES TO AN HOUR. THE HAZARD MAY PERSIST FOR MANY HOURS OR LONGER AFTER THE INITIAL WAVE.

* IMPACTS CAN VARY SIGNIFICANTLY FROM ONE SECTION OF COAST TO THE NEXT DUE TO LOCAL BATHYMETRY AND THE SHAPE AND ELEVATION

OF THE SHORELINE.

* IMPACTS CAN ALSO VARY DEPENDING UPON THE STATE OF THE TIDE AT THE TIME OF THE MAXIMUM TSUNAMI WAVES.

* PERSONS CAUGHT IN THE WATER OF A TSUNAMI MAY DROWN... BE CRUSHED BY DEBRIS IN THE WATER... OR BE SWEPT OUT TO SEA.

TSUNAMI OBSERVATIONS

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* THE FOLLOWING ARE TSUNAMI WAVE OBSERVATIONS FROM COASTAL AND/OR DEEP-OCEAN SEA LEVEL GAUGES AT THE INDICATED LOCATIONS. THE MAXIMUM TSUNAMI HEIGHT IS MEASURED WITH RESPECT TO THE TIDE LEVEL.

GAUGE LOCATION	GAUGE COORDINATES LAT	LON	TIME OF MEASURE (UTC)	MAXIMUM TSUNAMI HEIGHT	WAVE PERIOD (MIN)
DAKAR SN	14.7N	17.4W	1437	0.76M/ 2.5FT	27
NOUAKCHOTT MA	18.1N	15.9W	1422	0.68M/ 2.2FT	14
PALMEIRA CAPE VERDE	16.8N	23.0W	1344	0.94M/ 3.1FT	30
PONTA DELGADA PT	37.7N	25.7W	1214	3.73M/12.2FT	23
FERROL ES	43.5N	8.3W	1207	1.19M/ 3.9FT	22
LA PALMA ES	28.7N	17.8W	1148	2.35M/ 7.7FT	15
TARIFA ES	36.0N	5.6W	1145	1.82M/ 5.9FT	21
ALGECIRAS ES	36.2N	5.4W	1138	0.89M/ 2.9FT	27
HUELVA ES	37.1N	6.8W	1130	2.18M/ 7.1FT	19

NEXT UPDATE AND ADDITIONAL INFORMATION

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* THE NEXT MESSAGE WILL BE ISSUED IN ONE HOUR... OR SOONER IF THE SITUATION WARRANTS.

* AUTHORITATIVE INFORMATION ABOUT THE EARTHQUAKE FROM THE U.S. GEOLOGICAL SURVEY CAN BE FOUND ON THE INTERNET AT EARTHQUAKE.USGS.GOV/EARTHQUAKES -ALL IN SMALL LETTERS-.

* FURTHER INFORMATION ABOUT THIS EVENT MAY BE FOUND AT PTWC.WEATHER.GOV AND AT WWW.TSUNAMI.GOV.

* COASTAL REGIONS OF PUERTO RICO... THE U.S. VIRGIN ISLANDS AND THE BRITISH VIRGIN ISLANDS SHOULD REFER TO WEST COAST AND ALASKA TSUNAMI WARNING CENTER MESSAGES THAT CAN BE FOUND AT WCATWC.ARH.NOAA.GOV.

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ZCZC
WECA41 PHEB 261602
TSUCAX

EXPERIMENTAL TSUNAMI MESSAGE NUMBER 1
NOT FOR DISTRIBUTION
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
1602 UCT WED MAR 26 2014

...TSUNAMI THREAT MESSAGE...

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE *****

THIS MESSAGE IS ISSUED FOR INFORMATION ONLY IN SUPPORT OF THE
UNESCO/IOC TSUNAMI AND OTHER COASTAL HAZARDS WARNING SYSTEM FOR
THE CARIBBEAN AND ADJACENT REGIONS... THE CARIBE-EWS... AND IS
MEANT FOR NATIONAL AUTHORITIES IN EACH COUNTRY OF THAT SYSTEM.

NATIONAL AUTHORITIES WILL DETERMINE THE TSUNAMI THREAT AND
APPROPRIATE LEVEL OF ALERT FOR EACH COUNTRY.

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE *****

UPDATES
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* ADDITIONAL TSUNAMI OBSERVATIONS ARE NOW INCLUDED.

PRELIMINARY EARTHQUAKE PARAMETERS
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* MAGNITUDE 8.5
* ORIGIN TIME 1000 UTC MAR 26 2014
* COORDINATES 36.0 NORTH 10.8 WEST
* DEPTH 5 KM / 3 MILES

* LOCATION AZORES-CAPE ST. VINCENT RIDGE

EVALUATION
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* AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 8.5 OCCURRED NEAR THE AZORES-CAPE SAINT VINCENT RIDGE AT 1000 UTC ON WEDNESDAY MARCH 26 2014.

* BASED ON THE PRELIMINARY EARTHQUAKE PARAMETERS... HAZARDOUS TSUNAMI WAVES ARE FORECAST FOR SOME COASTS.

TSUNAMI THREAT FORECAST
---

* TSUNAMI WAVES REACHING MORE THAN 3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE ALONG SOME COASTS OF

BAHAMAS.

* TSUNAMI WAVES REACHING 1 TO 3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE ALONG SOME COASTS OF

BRAZIL... CUBA... DOMINICAN REPUBLIC... GUYANA... SURINAME... ANGUILLA... ANTIGUA AND BARBUDA... BARBADOS... BERMUDA... DOMINICA... FRENCH GUIANA... GRENADA... GUADELOUPE... MARTINIQUE... MONTSERRAT... SAINT KITTS AND NEVIS... SAINT LUCIA... SAINT BARTHELEMY... SAINT VINCENT AND THE GRENADINES... TRINIDAD AND TOBAGO... TURKS AND CAICOS ISLANDS... AND VENEZUELA.

* TSUNAMI WAVES REACHING 0.3 TO 1 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE FOR SOME COASTS OF

HAITI... ARUBA... CURACAO... SINT MAARTEN... SABA AND SINT EUSTATIUS... AND SAINT MARTIN.

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SABA	SABA	17.6N 63.2W	1724 03/26
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SAINT BARTHELEM	SAINT BARTHELEMY	17.9N 62.8W	1754 03/26
PIRATES BAY	TRINIDAD TOBAGO	11.3N 60.6W	1801 03/26
MAYAGUANA	BAHAMAS	22.3N 73.0W	1802 03/26
SAINT GEORGES	GRENADA	12.0N 61.8W	1803 03/26
BAIE BLANCHE	SAINT MARTIN	18.1N 63.0W	1805 03/26
WEST CAICOS	TURKS N CAICOS	21.7N 72.5W	1805 03/26
SAN SALVADOR	BAHAMAS	24.1N 74.5W	1808 03/26
CAP HAITEN	HAITI	19.8N 72.2W	1809 03/26
SANTO DOMINGO	DOMINICAN REP	18.5N 69.9W	1816 03/26
LONG ISLAND	BAHAMAS	23.3N 75.1W	1821 03/26
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ABACO ISLAND	BAHAMAS	26.6N 77.1W	1858 03/26
FREEPORT	BAHAMAS	26.5N 78.8W	1859 03/26
CUMANA	VENEZUELA	10.5N 64.2W	1903 03/26
PORT OF SPAIN	TRINIDAD TOBAGO	10.6N 61.5W	1908 03/26
BIMINI	BAHAMAS	25.8N 79.3W	1912 03/26
PORT AU PRINCE	HAITI	18.5N 72.4W	1934 03/26
CIENFUEGOS	CUBA	22.0N 80.5W	1937 03/26
GEORGETOWN	GUYANA	6.8N 58.2W	2033 03/26
PARAMARIBO	SURINAME	5.9N 55.2W	2033 03/26
PORLAMAR	VENEZUELA	10.9N 63.8W	2157 03/26
SANTA CRZ D SUR	CUBA	20.7N 78.0W	2201 03/26
ILHA DE MARACA	BRAZIL	2.2N 50.5W	2210 03/26
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POTENTIAL IMPACTS

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OF THE SHORELINE.

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TSUNAMI OBSERVATIONS

---

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GAUGE LOCATION	GAUGE COORDINATES LAT	LON	TIME OF MEASURE (UTC)	MAXIMUM TSUNAMI HEIGHT	WAVE PERIOD (MIN)
DART 44401	37.6N	50.0W	1511	0.09M/ 0.3FT	28
MALIN HEAD IE	55.4N	7.3W	1458	0.49M/ 1.6FT	27
DAKAR SN	14.7N	17.4W	1437	0.76M/ 2.5FT	27
NOUAKCHOTT MA	18.1N	15.9W	1422	0.68M/ 2.2FT	14
PALMEIRA CAPE VERDE	16.8N	23.0W	1344	0.94M/ 3.1FT	30
PONTA DELGADA PT	37.7N	25.7W	1214	3.73M/12.2FT	23
FERROL ES	43.5N	8.3W	1207	1.19M/ 3.9FT	22
LA PALMA ES	28.7N	17.8W	1148	2.35M/ 7.7FT	15
TARIFA ES	36.0N	5.6W	1145	1.82M/ 5.9FT	21
ALGECIRAS ES	36.2N	5.4W	1138	0.89M/ 2.9FT	27
HUELVA ES	37.1N	6.8W	1130	2.18M/ 7.1FT	19

NEXT UPDATE AND ADDITIONAL INFORMATION

---

* THE NEXT MESSAGE WILL BE ISSUED IN ONE HOUR... OR SOONER IF

THE SITUATION WARRANTS.

* AUTHORITATIVE INFORMATION ABOUT THE EARTHQUAKE FROM THE U.S. GEOLOGICAL SURVEY CAN BE FOUND ON THE INTERNET AT EARTHQUAKE.USGS.GOV/EARTHQUAKES -ALL IN SMALL LETTERS-.

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ZCZC
WECA41 PHEB 261805
TSUCAX

EXPERIMENTAL TSUNAMI MESSAGE NUMBER 1
NOT FOR DISTRIBUTION
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
1805 UCT WED MAR 26 2014

...TSUNAMI THREAT MESSAGE...

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THIS MESSAGE IS ISSUED FOR INFORMATION ONLY IN SUPPORT OF THE UNESCO/IOC TSUNAMI AND OTHER COASTAL HAZARDS WARNING SYSTEM FOR THE CARIBBEAN AND ADJACENT REGIONS... THE CARIBE-EWS... AND IS MEANT FOR NATIONAL AUTHORITIES IN EACH COUNTRY OF THAT SYSTEM.

NATIONAL AUTHORITIES WILL DETERMINE THE TSUNAMI THREAT AND APPROPRIATE LEVEL OF ALERT FOR EACH COUNTRY.

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE *****

UPDATES
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* ADDITIONAL TSUNAMI OBSERVATIONS ARE NOW INCLUDED.

PRELIMINARY EARTHQUAKE PARAMETERS
---

* MAGNITUDE 8.5
* ORIGIN TIME 1000 UTC MAR 26 2014
* COORDINATES 36.0 NORTH 10.8 WEST
* DEPTH 5 KM / 3 MILES

* LOCATION AZORES-CAPE ST. VINCENT RIDGE

EVALUATION
---

* AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 8.5 OCCURRED NEAR THE AZORES-CAPE SAINT VINCENT RIDGE AT 1000 UTC ON WEDNESDAY MARCH 26 2014.

* TSUNAMI WAVES HAVE BEEN OBSERVED ALONG SOME COASTS OF THE CARIBE-EWS.

* BASED ON ALL AVAILABLE DATA... HAZARDOUS TSUNAMI WAVES ARE FORECAST FOR SOME COASTS.

TSUNAMI THREAT FORECAST
---

* TSUNAMI WAVES REACHING MORE THAN 3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE ALONG SOME COASTS OF

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* TSUNAMI WAVES REACHING 1 TO 3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE ALONG SOME COASTS OF

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THE VALLEY	ANGUILLA	18.3N 63.1W	1727 03/26
SAINT JOHNS	ANTIGUA	17.1N 61.9W	1727 03/26
BASSETERRE	SAINT KITTS	17.3N 62.7W	1728 03/26
PALMETTO POINT	BARBUDA	17.6N 61.9W	1728 03/26
SIMPSON BAAI	SINT MAARTEN	18.0N 63.1W	1731 03/26
KINGSTOWN	SAINT VINCENT	13.1N 61.2W	1736 03/26
CABO ENGANO	DOMINICAN REP	18.6N 68.3W	1751 03/26
GRAND TURK	TURKS N CAICOS	21.5N 71.1W	1752 03/26
PUERTO PLATA	DOMINICAN REP	19.8N 70.7W	1753 03/26
SAINT BARTHELEM	SAINT BARTHELEMY	17.9N 62.8W	1754 03/26
PIRATES BAY	TRINIDAD TOBAGO	11.3N 60.6W	1801 03/26
MAYAGUANA	BAHAMAS	22.3N 73.0W	1802 03/26
SAINT GEORGES	GRENADA	12.0N 61.8W	1803 03/26
BAIE BLANCHE	SAINT MARTIN	18.1N 63.0W	1805 03/26
WEST CAICOS	TURKS N CAICOS	21.7N 72.5W	1805 03/26
SAN SALVADOR	BAHAMAS	24.1N 74.5W	1808 03/26
CAP HAITEN	HAITI	19.8N 72.2W	1809 03/26
SANTO DOMINGO	DOMINICAN REP	18.5N 69.9W	1816 03/26
LONG ISLAND	BAHAMAS	23.3N 75.1W	1821 03/26

GREAT INAGUA	BAHAMAS	20.9N 73.7W	1823 03/26
EXUMA	BAHAMAS	23.6N 75.9W	1824 03/26
CAT ISLAND	BAHAMAS	24.4N 75.5W	1824 03/26
BARACOA	CUBA	20.4N 74.5W	1827 03/26
ELEUTHERA ISLAN	BAHAMAS	25.2N 76.1W	1829 03/26
CROOKED ISLAND	BAHAMAS	22.7N 74.1W	1834 03/26
JACAMEL	HAITI	18.1N 72.5W	1835 03/26
ANDROS ISLAND	BAHAMAS	25.0N 77.9W	1835 03/26
GIBARA	CUBA	21.1N 76.1W	1837 03/26
ORANJESTAD	ARUBA	12.5N 70.0W	1837 03/26
JEREMIE	HAITI	18.6N 74.1W	1841 03/26
SANTIAGO D CUBA	CUBA	19.9N 75.8W	1844 03/26
NASSAU	BAHAMAS	25.1N 77.4W	1847 03/26
CAYENNE	FRENCH GUIANA	4.9N 52.3W	1847 03/26
MAIQUETIA	VENEZUELA	10.6N 67.0W	1850 03/26
WILLEMSTAD	CURACAO	12.1N 68.9W	1857 03/26
ABACO ISLAND	BAHAMAS	26.6N 77.1W	1858 03/26
FREEPORT	BAHAMAS	26.5N 78.8W	1859 03/26
CUMANA	VENEZUELA	10.5N 64.2W	1903 03/26
PORT OF SPAIN	TRINIDAD TOBAGO	10.6N 61.5W	1908 03/26
BIMINI	BAHAMAS	25.8N 79.3W	1912 03/26
PORT AU PRINCE	HAITI	18.5N 72.4W	1934 03/26
CIENFUEGOS	CUBA	22.0N 80.5W	1937 03/26
GEORGETOWN	GUYANA	6.8N 58.2W	2033 03/26
PARAMARIBO	SURINAME	5.9N 55.2W	2033 03/26
PORLAMAR	VENEZUELA	10.9N 63.8W	2157 03/26
SANTA CRZ D SUR	CUBA	20.7N 78.0W	2201 03/26
ILHA DE MARACA	BRAZIL	2.2N 50.5W	2210 03/26
NUEVA GERONA	CUBA	21.9N 82.8W	2339 03/26

POTENTIAL IMPACTS

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* A TSUNAMI IS A SERIES OF WAVES. THE TIME BETWEEN WAVE CRESTS CAN VARY FROM 5 MINUTES TO AN HOUR. THE HAZARD MAY PERSIST FOR MANY HOURS OR LONGER AFTER THE INITIAL WAVE.

* IMPACTS CAN VARY SIGNIFICANTLY FROM ONE SECTION OF COAST TO THE NEXT DUE TO LOCAL BATHYMETRY AND THE SHAPE AND ELEVATION OF THE SHORELINE.

* IMPACTS CAN ALSO VARY DEPENDING UPON THE STATE OF THE TIDE AT THE TIME OF THE MAXIMUM TSUNAMI WAVES.

* PERSONS CAUGHT IN THE WATER OF A TSUNAMI MAY DROWN... BE CRUSHED BY DEBRIS IN THE WATER... OR BE SWEPT OUT TO SEA.

TSUNAMI OBSERVATIONS

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* THE FOLLOWING ARE TSUNAMI WAVE OBSERVATIONS FROM COASTAL AND/OR DEEP-OCEAN SEA LEVEL GAUGES AT THE INDICATED LOCATIONS. THE MAXIMUM TSUNAMI HEIGHT IS MEASURED WITH RESPECT TO THE TIDE LEVEL.

GAUGE LOCATION	GAUGE COORDINATES LAT	LON	TIME OF MEASURE (UTC)	MAXIMUM TSUNAMI HEIGHT	WAVE PERIOD (MIN)
ESPERANZA VIEQUES P	18.1N	65.5W	1749	0.46M/ 1.5FT	29
YABUCOA PR	18.1N	65.8W	1747	0.50M/ 1.7FT	28
DART 41424	32.9N	72.5W	1745	0.07M/ 0.2FT	22
ARECIBO PR	18.5N	66.7W	1744	1.23M/ 4.0FT	31
LIMETREE VI	17.7N	64.8W	1744	0.51M/ 1.7FT	25
SAN JUAN PR	18.5N	66.1W	1740	1.07M/ 3.5FT	22
FORT DE FRANCE MQ	14.6N	61.1W	1740	0.49M/ 1.6FT	29
BRIDGEPORT BB	13.1N	59.6W	1733	0.97M/ 3.2FT	26
ASCENSION UK	7.9S	14.4W	1733	0.30M/ 1.0FT	27
ROSEAU DM	15.3N	61.4W	1733	0.61M/ 2.0FT	32
DART 41420	23.5N	67.3W	1730	0.11M/ 0.4FT	31
LE ROBERT MQ	14.7N	60.9W	1730	0.91M/ 3.0FT	29
POINT A PITRE GP	16.2N	61.5W	1730	0.94M/ 3.1FT	19
LE PRECHEUR MQ	14.8N	61.2W	1730	0.56M/ 1.8FT	24
DESHAIES GP	16.3N	61.8W	1729	0.72M/ 2.4FT	23

PORT ST CHARLES BB	13.3N	59.6W	1728	1.31M/ 4.3FT	16
DART 44402	39.5N	70.6W	1728	0.07M/ 0.2FT	21
PARHAM AG	17.1N	61.8W	1724	0.96M/ 3.1FT	24
DESIRADE GP	16.3N	61.1W	1715	0.89M/ 2.9FT	30
DART 41421	23.4N	63.9W	1708	0.11M/ 0.3FT	22
BERMUDA UK	32.4N	64.7W	1706	1.83M/ 6.0FT	27
DART 44401	37.6N	50.0W	1511	0.09M/ 0.3FT	28
MALIN HEAD IE	55.4N	7.3W	1458	0.49M/ 1.6FT	27
DAKAR SN	14.7N	17.4W	1437	0.76M/ 2.5FT	27
NOUAKCHOTT MA	18.1N	15.9W	1422	0.68M/ 2.2FT	14
PALMEIRA CAPE VERDE	16.8N	23.0W	1344	0.94M/ 3.1FT	30
PONTA DELGADA PT	37.7N	25.7W	1214	3.73M/12.2FT	23
FERROL ES	43.5N	8.3W	1207	1.19M/ 3.9FT	22
LA PALMA ES	28.7N	17.8W	1148	2.35M/ 7.7FT	15
TARIFA ES	36.0N	5.6W	1145	1.82M/ 5.9FT	21
ALGECIRAS ES	36.2N	5.4W	1138	0.89M/ 2.9FT	27
HUELVA ES	37.1N	6.8W	1130	2.18M/ 7.1FT	19

NEXT UPDATE AND ADDITIONAL INFORMATION

---

* THE NEXT MESSAGE WILL BE ISSUED IN ONE HOUR... OR SOONER IF THE SITUATION WARRANTS.

* AUTHORITATIVE INFORMATION ABOUT THE EARTHQUAKE FROM THE U.S. GEOLOGICAL SURVEY CAN BE FOUND ON THE INTERNET AT EARTHQUAKE.USGS.GOV/EARTHQUAKES -ALL IN SMALL LETTERS-.

* FURTHER INFORMATION ABOUT THIS EVENT MAY BE FOUND AT PTWC.WEATHER.GOV AND AT WWW.TSUNAMI.GOV.

* COASTAL REGIONS OF PUERTO RICO... THE U.S. VIRGIN ISLANDS AND THE BRITISH VIRGIN ISLANDS SHOULD REFER TO WEST COAST AND ALASKA TSUNAMI WARNING CENTER MESSAGES THAT CAN BE FOUND AT WCATWC.ARH.NOAA.GOV.

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ZCZC
WECA41 PHEB 261905
TSUCAX

EXPERIMENTAL TSUNAMI MESSAGE NUMBER 1
NOT FOR DISTRIBUTION
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
1905 UCT WED MAR 26 2014

...TSUNAMI THREAT MESSAGE...

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE *****

THIS MESSAGE IS ISSUED FOR INFORMATION ONLY IN SUPPORT OF THE
UNESCO/IOC TSUNAMI AND OTHER COASTAL HAZARDS WARNING SYSTEM FOR
THE CARIBBEAN AND ADJACENT REGIONS... THE CARIBE-EWS... AND IS
MEANT FOR NATIONAL AUTHORITIES IN EACH COUNTRY OF THAT SYSTEM.

NATIONAL AUTHORITIES WILL DETERMINE THE TSUNAMI THREAT AND
APPROPRIATE LEVEL OF ALERT FOR EACH COUNTRY.

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE *****

UPDATES
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* ADDITIONAL TSUNAMI OBSERVATIONS ARE NOW INCLUDED.

PRELIMINARY EARTHQUAKE PARAMETERS
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* MAGNITUDE 8.5
* ORIGIN TIME 1000 UTC MAR 26 2014
* COORDINATES 36.0 NORTH 10.8 WEST
* DEPTH 5 KM / 3 MILES

* LOCATION AZORES-CAPE ST. VINCENT RIDGE

EVALUATION
---

* AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 8.5 OCCURRED NEAR THE AZORES-CAPE SAINT VINCENT RIDGE AT 1000 UTC ON WEDNESDAY MARCH 26 2014.

* TSUNAMI WAVES HAVE NOW BEEN OBSERVED ALONG SOME COASTS OF THE CARIBE-EWS.

* BASED ON ALL AVAILABLE DATA... HAZARDOUS TSUNAMI WAVES ARE FORECAST FOR SOME COASTS.

TSUNAMI THREAT FORECAST
---

* TSUNAMI WAVES REACHING MORE THAN 3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE ALONG SOME COASTS OF

BAHAMAS.

* TSUNAMI WAVES REACHING 1 TO 3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE ALONG SOME COASTS OF

BRAZIL... CUBA... DOMINICAN REPUBLIC... GUYANA... SURINAME... ANGUILLA... ANTIGUA AND BARBUDA... BARBADOS... BERMUDA... DOMINICA... FRENCH GUIANA... GRENADA... GUADELOUPE... MARTINIQUE... MONTSERRAT... SAINT KITTS AND NEVIS... SAINT LUCIA... SAINT BARTHELEMY... SAINT VINCENT AND THE GRENADINES... TRINIDAD AND TOBAGO... TURKS AND CAICOS ISLANDS... AND VENEZUELA.

* TSUNAMI WAVES REACHING 0.3 TO 1 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE FOR SOME COASTS OF

HAITI... ARUBA... CURACAO... SINT MAARTEN... SABA AND SINT EUSTATIUS... AND SAINT MARTIN.

* TSUNAMI WAVES LESS THAN 0.3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE FOR SOME COASTS OF

COLOMBIA... COSTA RICA... HONDURAS... GUATEMALA... MEXICO... NICARAGUA... PANAMA... BELIZE... CAYMAN ISLANDS... JAMAICA... AND BONAIRE.

* ACTUAL AMPLITUDES AT THE COAST MAY VARY FROM FORECAST AMPLITUDES DUE TO UNCERTAINTIES IN THE FORECAST AND LOCAL FEATURES. IN PARTICULAR MAXIMUM TSUNAMI AMPLITUDES ON ATOLLS WILL LIKELY BE MUCH SMALLER THAN THE FORECAST INDICATES.

* FOR OTHER AREAS COVERED BY THIS PRODUCT A FORECAST HAS NOT YET BEEN COMPUTED. THE FORECAST WILL BE EXPANDED AS NECESSARY IN SUBSEQUENT PRODUCTS.

RECOMMENDED ACTIONS
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* GOVERNMENT AGENCIES RESPONSIBLE FOR THREATENED COASTAL AREAS SHOULD TAKE ACTION TO INFORM AND INSTRUCT ANY COASTAL POPULATIONS AT RISK IN ACCORDANCE WITH THEIR OWN EVALUATION... PROCEDURES AND THE LEVEL OF THREAT.

* PERSONS LOCATED IN THREATENED COASTAL AREAS SHOULD STAY ALERT FOR INFORMATION AND FOLLOW INSTRUCTIONS FROM NATIONAL AND LOCAL AUTHORITIES.

ESTIMATED TIMES OF ARRIVAL

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* ESTIMATED TIMES OF ARRIVAL -ETA- OF THE INITIAL TSUNAMI WAVE FOR POINTS WITHIN THREATENED REGIONS ARE GIVEN BELOW. ACTUAL ARRIVAL TIMES MAY DIFFER AND THE INITIAL WAVE MAY NOT BE THE LARGEST. A TSUNAMI IS A SERIES OF WAVES AND THE TIME BETWEEN WAVES CAN BE FIVE MINUTES TO ONE HOUR.

LOCATION	REGION	COORDINATES	ETA(UTC)
BAIE BLANCHE	SAINT MARTIN	18.1N 63.0W	1805 03/26
WEST CAICOS	TURKS N CAICOS	21.7N 72.5W	1805 03/26
SAN SALVADOR	BAHAMAS	24.1N 74.5W	1808 03/26
CAP HAITEN	HAITI	19.8N 72.2W	1809 03/26
SANTO DOMINGO	DOMINICAN REP	18.5N 69.9W	1816 03/26
LONG ISLAND	BAHAMAS	23.3N 75.1W	1821 03/26
GREAT INAGUA	BAHAMAS	20.9N 73.7W	1823 03/26
EXUMA	BAHAMAS	23.6N 75.9W	1824 03/26
CAT ISLAND	BAHAMAS	24.4N 75.5W	1824 03/26
BARACOA	CUBA	20.4N 74.5W	1827 03/26
ELEUTHERA ISLAN	BAHAMAS	25.2N 76.1W	1829 03/26
CROOKED ISLAND	BAHAMAS	22.7N 74.1W	1834 03/26
JACAMEL	HAITI	18.1N 72.5W	1835 03/26
ANDROS ISLAND	BAHAMAS	25.0N 77.9W	1835 03/26
GIBARA	CUBA	21.1N 76.1W	1837 03/26
ORANJESTAD	ARUBA	12.5N 70.0W	1837 03/26
JEREMIE	HAITI	18.6N 74.1W	1841 03/26
SANTIAGO D CUBA	CUBA	19.9N 75.8W	1844 03/26
NASSAU	BAHAMAS	25.1N 77.4W	1847 03/26
CAYENNE	FRENCH GUIANA	4.9N 52.3W	1847 03/26
MAIQUETIA	VENEZUELA	10.6N 67.0W	1850 03/26
WILLEMSTAD	CURACAO	12.1N 68.9W	1857 03/26
ABACO ISLAND	BAHAMAS	26.6N 77.1W	1858 03/26
FREEPORT	BAHAMAS	26.5N 78.8W	1859 03/26
CUMANA	VENEZUELA	10.5N 64.2W	1903 03/26
PORT OF SPAIN	TRINIDAD TOBAGO	10.6N 61.5W	1908 03/26
BIMINI	BAHAMAS	25.8N 79.3W	1912 03/26

PORT AU PRINCE	HAITI	18.5N 72.4W	1934 03/26
CIENFUEGOS	CUBA	22.0N 80.5W	1937 03/26
GEORGETOWN	GUYANA	6.8N 58.2W	2033 03/26
PARAMARIBO	SURINAME	5.9N 55.2W	2033 03/26
PORLAMAR	VENEZUELA	10.9N 63.8W	2157 03/26
SANTA CRZ D SUR	CUBA	20.7N 78.0W	2201 03/26
ILHA DE MARACA	BRAZIL	2.2N 50.5W	2210 03/26
NUEVA GERONA	CUBA	21.9N 82.8W	2339 03/26

POTENTIAL IMPACTS

---

* A TSUNAMI IS A SERIES OF WAVES. THE TIME BETWEEN WAVE CRESTS CAN VARY FROM 5 MINUTES TO AN HOUR. THE HAZARD MAY PERSIST FOR MANY HOURS OR LONGER AFTER THE INITIAL WAVE.

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* IMPACTS CAN ALSO VARY DEPENDING UPON THE STATE OF THE TIDE AT THE TIME OF THE MAXIMUM TSUNAMI WAVES.

* PERSONS CAUGHT IN THE WATER OF A TSUNAMI MAY DROWN... BE CRUSHED BY DEBRIS IN THE WATER... OR BE SWEPT OUT TO SEA.

TSUNAMI OBSERVATIONS

---

* THE FOLLOWING ARE TSUNAMI WAVE OBSERVATIONS FROM COASTAL AND/OR DEEP-OCEAN SEA LEVEL GAUGES AT THE INDICATED LOCATIONS. THE MAXIMUM TSUNAMI HEIGHT IS MEASURED WITH RESPECT TO THE NORMAL TIDE LEVEL.

	GAUGE COORDINATES	TIME OF MEASURE	MAXIMUM TSUNAMI	WAVE PERIOD

GAUGE LOCATION	LAT	LON	(UTC)	HEIGHT	(MIN)
LAGOS NG	6.4N	3.4E	1849	0.14M/ 0.4FT	21
BARAHONA DO	18.2N	71.1W	1839	0.24M/ 0.8FT	16
ILE ROYAL GUIANA FR	5.3N	52.6W	1837	1.05M/ 3.5FT	30
CAP HAITIEN HT	19.8N	72.2W	1824	0.71M/ 2.3FT	16
TAKORADI GA	4.9N	1.7W	1821	0.21M/ 0.7FT	17
PRICKLEY BAY GD	12.0N	61.8W	1818	0.45M/ 1.5FT	15
CHARLOTTE-AMALIE VI	18.3N	64.9W	1818	0.53M/ 1.7FT	21
CULEBRA IS PR	18.3N	65.3W	1817	0.58M/ 1.9FT	19
CHARLOTTEVILLE TT	11.3N	60.5W	1816	0.77M/ 2.5FT	16
DART 42407	15.3N	68.2W	1815	0.03M/ 0.1FT	28
FORTALEZA BR	3.7S	38.5W	1815	0.78M/ 2.6FT	22
MAGUEYES ISLAND PR	18.0N	67.0W	1814	0.44M/ 1.4FT	20
FAJARDO PR	18.3N	65.6W	1813	0.74M/ 2.4FT	22
ALEXANDRIA EG	31.2N	29.9E	1808	0.01M/ 0.0FT	29
PUERTO PLATA DO	19.8N	70.7W	1808	0.78M/ 2.6FT	31
LAMESHUR BAY VI	18.3N	64.7W	1807	0.52M/ 1.7FT	26
SCARBOROUGH TT	11.2N	60.7W	1807	0.77M/ 2.5FT	18
PUNTA CANA DO	18.5N	68.4W	1805	0.83M/ 2.7FT	26
MONA ISLAND PR	18.1N	67.9W	1802	0.61M/ 2.0FT	30
ISABELII VIEQUES PR	18.2N	65.4W	1801	0.58M/ 1.9FT	19
PENUELAS PR	18.0N	66.8W	1800	0.42M/ 1.4FT	29
AGUADILLA PR	18.5N	67.2W	1753	1.02M/ 3.4FT	22
MAYAGUEZ PR	18.2N	67.2W	1752	0.94M/ 3.1FT	23
BARBUDA AG	17.6N	61.8W	1752	0.96M/ 3.1FT	25
ESPERANZA VIEQUES P	18.1N	65.5W	1749	0.46M/ 1.5FT	29
YABUCOA PR	18.1N	65.8W	1747	0.50M/ 1.7FT	28
DART 41424	32.9N	72.5W	1745	0.07M/ 0.2FT	22
ARECIBO PR	18.5N	66.7W	1744	1.23M/ 4.0FT	31
LIMETREE VI	17.7N	64.8W	1744	0.51M/ 1.7FT	25
SAN JUAN PR	18.5N	66.1W	1740	1.07M/ 3.5FT	22
FORT DE FRANCE MQ	14.6N	61.1W	1740	0.49M/ 1.6FT	29
BRIDGEPORT BB	13.1N	59.6W	1733	0.97M/ 3.2FT	26
ASCENSION UK	7.9S	14.4W	1733	0.30M/ 1.0FT	27
ROSEAU DM	15.3N	61.4W	1733	0.61M/ 2.0FT	32
DART 41420	23.5N	67.3W	1730	0.11M/ 0.4FT	31
LE ROBERT MQ	14.7N	60.9W	1730	0.91M/ 3.0FT	29

POINT A PITRE GP	16.2N	61.5W	1730	0.94M/ 3.1FT	19
LE PRECHEUR MQ	14.8N	61.2W	1730	0.56M/ 1.8FT	24
DESHAIES GP	16.3N	61.8W	1729	0.72M/ 2.4FT	23
PORT ST CHARLES BB	13.3N	59.6W	1728	1.31M/ 4.3FT	16
DART 44402	39.5N	70.6W	1728	0.07M/ 0.2FT	21
PARHAM AG	17.1N	61.8W	1724	0.96M/ 3.1FT	24
DESIRADE GP	16.3N	61.1W	1715	0.89M/ 2.9FT	30
DART 41421	23.4N	63.9W	1708	0.11M/ 0.3FT	22
BERMUDA UK	32.4N	64.7W	1706	1.83M/ 6.0FT	27
DART 44401	37.6N	50.0W	1511	0.09M/ 0.3FT	28
MALIN HEAD IE	55.4N	7.3W	1458	0.49M/ 1.6FT	27
DAKAR SN	14.7N	17.4W	1437	0.76M/ 2.5FT	27
NOUAKCHOTT MA	18.1N	15.9W	1422	0.68M/ 2.2FT	14
PALMEIRA CAPE VERDE	16.8N	23.0W	1344	0.94M/ 3.1FT	30
PONTA DELGADA PT	37.7N	25.7W	1214	3.73M/12.2FT	23
FERROL ES	43.5N	8.3W	1207	1.19M/ 3.9FT	22
LA PALMA ES	28.7N	17.8W	1148	2.35M/ 7.7FT	15
TARIFA ES	36.0N	5.6W	1145	1.82M/ 5.9FT	21
ALGECIRAS ES	36.2N	5.4W	1138	0.89M/ 2.9FT	27
HUELVA ES	37.1N	6.8W	1130	2.18M/ 7.1FT	19

NEXT UPDATE AND ADDITIONAL INFORMATION

---

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* FURTHER INFORMATION ABOUT THIS EVENT MAY BE FOUND AT PTWC.WEATHER.GOV AND AT WWW.TSUNAMI.GOV.

* COASTAL REGIONS OF PUERTO RICO... THE U.S. VIRGIN ISLANDS AND THE BRITISH VIRGIN ISLANDS SHOULD REFER TO WEST COAST AND ALASKA TSUNAMI WARNING CENTER MESSAGES THAT CAN BE FOUND AT

WCATWC.ARH.NOAA.GOV.

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ZCZC
WECA41 PHEB 262002
TSUCAX

EXPERIMENTAL TSUNAMI MESSAGE NUMBER 1
NOT FOR DISTRIBUTION
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
2002 UCT WED MAR 26 2014

...TSUNAMI THREAT MESSAGE...

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UNESCO/IOC TSUNAMI AND OTHER COASTAL HAZARDS WARNING SYSTEM FOR
THE CARIBBEAN AND ADJACENT REGIONS... THE CARIBE-EWS... AND IS
MEANT FOR NATIONAL AUTHORITIES IN EACH COUNTRY OF THAT SYSTEM.

NATIONAL AUTHORITIES WILL DETERMINE THE TSUNAMI THREAT AND
APPROPRIATE LEVEL OF ALERT FOR EACH COUNTRY.

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE *****

UPDATES
---

* ADDITIONAL TSUNAMI OBSERVATIONS ARE NOW INCLUDED.

PRELIMINARY EARTHQUAKE PARAMETERS
---

* MAGNITUDE 8.5
* ORIGIN TIME 1000 UTC MAR 26 2014
* COORDINATES 36.0 NORTH 10.8 WEST
* DEPTH 5 KM / 3 MILES

* LOCATION AZORES-CAPE ST. VINCENT RIDGE

EVALUATION
---

* AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 8.5 OCCURRED NEAR THE AZORES-CAPE SAINT VINCENT RIDGE AT 1000 UTC ON WEDNESDAY MARCH 26 2014.

* TSUNAMI WAVES HAVE BEEN OBSERVED.

* BASED ON ALL AVAILABLE DATA... HAZARDOUS TSUNAMI WAVES ARE FORECAST FOR SOME COASTS.

TSUNAMI THREAT FORECAST
---

* TSUNAMI WAVES REACHING MORE THAN 3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE ALONG SOME COASTS OF

BAHAMAS.

* TSUNAMI WAVES REACHING 1 TO 3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE ALONG SOME COASTS OF

BRAZIL... CUBA... DOMINICAN REPUBLIC... GUYANA... SURINAME... ANGUILLA... ANTIGUA AND BARBUDA... BARBADOS... BERMUDA... DOMINICA... FRENCH GUIANA... GRENADA... GUADELOUPE... MARTINIQUE... MONTSERRAT... SAINT KITTS AND NEVIS... SAINT LUCIA... SAINT BARTHELEMY... SAINT VINCENT AND THE GRENADINES... TRINIDAD AND TOBAGO... TURKS AND CAICOS ISLANDS... AND VENEZUELA.

* TSUNAMI WAVES REACHING 0.3 TO 1 METERS ABOVE THE TIDE LEVEL

ARE POSSIBLE FOR SOME COASTS OF

HAITI... ARUBA... CURACAO... SINT MAARTEN... SABA AND SINT EUSTATIUS... AND SAINT MARTIN.

* TSUNAMI WAVES LESS THAN 0.3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE FOR SOME COASTS OF

COLOMBIA... COSTA RICA... HONDURAS... GUATEMALA... MEXICO... NICARAGUA... PANAMA... BELIZE... CAYMAN ISLANDS... JAMAICA... AND BONAIRE.

* ACTUAL AMPLITUDES AT THE COAST MAY VARY FROM FORECAST AMPLITUDES DUE TO UNCERTAINTIES IN THE FORECAST AND LOCAL FEATURES. IN PARTICULAR MAXIMUM TSUNAMI AMPLITUDES ON ATOLLS WILL LIKELY BE MUCH SMALLER THAN THE FORECAST INDICATES.

* FOR OTHER AREAS COVERED BY THIS PRODUCT A FORECAST HAS NOT YET BEEN COMPUTED. THE FORECAST WILL BE EXPANDED AS NECESSARY IN SUBSEQUENT PRODUCTS.

RECOMMENDED ACTIONS
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* GOVERNMENT AGENCIES RESPONSIBLE FOR THREATENED COASTAL AREAS SHOULD TAKE ACTION TO INFORM AND INSTRUCT ANY COASTAL POPULATIONS AT RISK IN ACCORDANCE WITH THEIR OWN EVALUATION... PROCEDURES AND THE LEVEL OF THREAT.

* PERSONS LOCATED IN THREATENED COASTAL AREAS SHOULD STAY ALERT FOR INFORMATION AND FOLLOW INSTRUCTIONS FROM NATIONAL AND LOCAL AUTHORITIES.

ESTIMATED TIMES OF ARRIVAL

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* ESTIMATED TIMES OF ARRIVAL -ETA- OF THE INITIAL TSUNAMI WAVE FOR POINTS WITHIN THREATENED REGIONS ARE GIVEN BELOW. ACTUAL ARRIVAL TIMES MAY DIFFER AND THE INITIAL WAVE MAY NOT BE THE LARGEST. A TSUNAMI IS A SERIES OF WAVES AND THE TIME BETWEEN WAVES CAN BE FIVE MINUTES TO ONE HOUR.

LOCATION	REGION	COORDINATES	ETA(UTC)
CUMANA	VENEZUELA	10.5N 64.2W	1903 03/26
PORT OF SPAIN	TRINIDAD TOBAGO	10.6N 61.5W	1908 03/26
BIMINI	BAHAMAS	25.8N 79.3W	1912 03/26
PORT AU PRINCE	HAITI	18.5N 72.4W	1934 03/26
CIENFUEGOS	CUBA	22.0N 80.5W	1937 03/26
GEORGETOWN	GUYANA	6.8N 58.2W	2033 03/26
PARAMARIBO	SURINAME	5.9N 55.2W	2033 03/26
PORLAMAR	VENEZUELA	10.9N 63.8W	2157 03/26
SANTA CRZ D SUR	CUBA	20.7N 78.0W	2201 03/26
ILHA DE MARACA	BRAZIL	2.2N 50.5W	2210 03/26
NUEVA GERONA	CUBA	21.9N 82.8W	2339 03/26

POTENTIAL IMPACTS

---

* A TSUNAMI IS A SERIES OF WAVES. THE TIME BETWEEN WAVE CRESTS CAN VARY FROM 5 MINUTES TO AN HOUR. THE HAZARD MAY PERSIST FOR MANY HOURS OR LONGER AFTER THE INITIAL WAVE.

* IMPACTS CAN VARY SIGNIFICANTLY FROM ONE SECTION OF COAST TO THE NEXT DUE TO LOCAL BATHYMETRY AND THE SHAPE AND ELEVATION OF THE SHORELINE.

* IMPACTS CAN ALSO VARY DEPENDING UPON THE STATE OF THE TIDE AT THE TIME OF THE MAXIMUM TSUNAMI WAVES.

* PERSONS CAUGHT IN THE WATER OF A TSUNAMI MAY DROWN... BE

CRUSHED BY DEBRIS IN THE WATER... OR BE SWEPT OUT TO SEA.

TSUNAMI OBSERVATIONS

---

* THE FOLLOWING ARE TSUNAMI WAVE OBSERVATIONS FROM COASTAL AND/OR DEEP-OCEAN SEA LEVEL GAUGES AT THE INDICATED LOCATIONS. THE MAXIMUM TSUNAMI HEIGHT IS MEASURED WITH RESPECT TO THE NORMAL TIDE LEVEL.

GAUGE LOCATION	GAUGE COORDINATES LAT	LON	TIME OF MEASURE (UTC)	MAXIMUM TSUNAMI HEIGHT	WAVE PERIOD (MIN)
BORDEN FLATS LT MA	41.7N	71.2W	1952	0.57M/ 1.9FT	23
CAPE MAY NJ	39.0N	74.9W	1949	0.60M/ 2.0FT	22
KINGS POINT NY	40.8N	73.8W	1948	0.60M/ 2.0FT	31
BEAUFORT NC	34.7N	76.7W	1946	0.68M/ 2.2FT	16
BRIDGEPORT CT	41.2N	73.2W	1945	0.73M/ 2.4FT	18
ATLANTIC CITY NJ	39.4N	74.4W	1944	0.69M/ 2.2FT	20
WACHAPREAGUE VA	37.6N	75.7W	1943	0.64M/ 2.1FT	25
MONTAUK NY	41.0N	72.0W	1940	0.73M/ 2.4FT	16
SETTLEMENT PT BS	26.7N	79.0W	1939	0.60M/ 2.0FT	26
SANTA MARTA CO	11.2N	74.2W	1937	0.21M/ 0.7FT	25
OREGON INLET NC	35.8N	75.5W	1932	0.79M/ 2.6FT	28
PORT OF SPAIN TT	10.6N	61.5W	1923	0.64M/ 2.1FT	18
OCEAN CITY MD	38.3N	75.1W	1920	0.74M/ 2.4FT	23
NEW HAVEN CT	41.3N	72.9W	1917	0.73M/ 2.4FT	21
DUCK PIER NC	36.2N	75.7W	1914	0.76M/ 2.5FT	18
NANTUCKET ISLAND MA	41.3N	70.1W	1913	0.57M/ 1.9FT	15
SAINT HELENA UK	15.9S	5.7W	1910	0.28M/ 0.9FT	30
TORTOLA VI UK	18.4N	64.6W	1855	0.49M/ 1.6FT	22
HATTERAS NC	35.2N	75.7W	1854	0.79M/ 2.6FT	17
PORT SAN ANDRES DO	18.4N	69.6W	1852	0.34M/ 1.1FT	31
LAGOS NG	6.4N	3.4E	1849	0.14M/ 0.4FT	21
BARAHONA DO	18.2N	71.1W	1839	0.24M/ 0.8FT	16
ILE ROYAL GUIANA FR	5.3N	52.6W	1837	1.05M/ 3.5FT	30

CAP HAITIEN HT	19.8N	72.2W	1824	0.71M/ 2.3FT 16
TAKORADI GA	4.9N	1.7W	1821	0.21M/ 0.7FT 17
PRICKLEY BAY GD	12.0N	61.8W	1818	0.45M/ 1.5FT 15
CHARLOTTE-AMALIE VI	18.3N	64.9W	1818	0.53M/ 1.7FT 21
CULEBRA IS PR	18.3N	65.3W	1817	0.58M/ 1.9FT 19
CHARLOTTEVILLE TT	11.3N	60.5W	1816	0.77M/ 2.5FT 16
DART 42407	15.3N	68.2W	1815	0.03M/ 0.1FT 28
FORTALEZA BR	3.7S	38.5W	1815	0.78M/ 2.6FT 22
MAGUEYES ISLAND PR	18.0N	67.0W	1814	0.44M/ 1.4FT 20
FAJARDO PR	18.3N	65.6W	1813	0.74M/ 2.4FT 22
ALEXANDRIA EG	31.2N	29.9E	1808	0.01M/ 0.0FT 29
PUERTO PLATA DO	19.8N	70.7W	1808	0.78M/ 2.6FT 31
LAMESHUR BAY VI	18.3N	64.7W	1807	0.52M/ 1.7FT 26
SCARBOROUGH TT	11.2N	60.7W	1807	0.77M/ 2.5FT 18
PUNTA CANA DO	18.5N	68.4W	1805	0.83M/ 2.7FT 26
MONA ISLAND PR	18.1N	67.9W	1802	0.61M/ 2.0FT 30
ISABELII VIEQUES PR	18.2N	65.4W	1801	0.58M/ 1.9FT 19
PENUELAS PR	18.0N	66.8W	1800	0.42M/ 1.4FT 29
AGUADILLA PR	18.5N	67.2W	1753	1.02M/ 3.4FT 22
MAYAGUEZ PR	18.2N	67.2W	1752	0.94M/ 3.1FT 23
BARBUDA AG	17.6N	61.8W	1752	0.96M/ 3.1FT 25
ESPERANZA VIEQUES P	18.1N	65.5W	1749	0.46M/ 1.5FT 29
YABUCOA PR	18.1N	65.8W	1747	0.50M/ 1.7FT 28
DART 41424	32.9N	72.5W	1745	0.07M/ 0.2FT 22
ARECIBO PR	18.5N	66.7W	1744	1.23M/ 4.0FT 31
LIMETREE VI	17.7N	64.8W	1744	0.51M/ 1.7FT 25
SAN JUAN PR	18.5N	66.1W	1740	1.07M/ 3.5FT 22
FORT DE FRANCE MQ	14.6N	61.1W	1740	0.49M/ 1.6FT 29
BRIDGEPORT BB	13.1N	59.6W	1733	0.97M/ 3.2FT 26
ASCENSION UK	7.9S	14.4W	1733	0.30M/ 1.0FT 27
ROSEAU DM	15.3N	61.4W	1733	0.61M/ 2.0FT 32
DART 41420	23.5N	67.3W	1730	0.11M/ 0.4FT 31
LE ROBERT MQ	14.7N	60.9W	1730	0.91M/ 3.0FT 29
POINT A PITRE GP	16.2N	61.5W	1730	0.94M/ 3.1FT 19
LE PRECHEUR MQ	14.8N	61.2W	1730	0.56M/ 1.8FT 24
DESHAIES GP	16.3N	61.8W	1729	0.72M/ 2.4FT 23
PORT ST CHARLES BB	13.3N	59.6W	1728	1.31M/ 4.3FT 16
DART 44402	39.5N	70.6W	1728	0.07M/ 0.2FT 21

PARHAM AG	17.1N	61.8W	724	0.96M/ 3.1FT	24
DESIRADE GP	16.3N	61.1W	1715	0.89M/ 2.9FT	30
DART 41421	23.4N	63.9W	1708	0.11M/ 0.3FT	22
BERMUDA UK	32.4N	64.7W	1706	1.83M/ 6.0FT	27
DART 44401	37.6N	50.0W	1511	0.09M/ 0.3FT	28
MALIN HEAD IE	55.4N	7.3W	1458	0.49M/ 1.6FT	27
DAKAR SN	14.7N	17.4W	1437	0.76M/ 2.5FT	27
NOUAKCHOTT MA	18.1N	15.9W	1422	0.68M/ 2.2FT	14
PALMEIRA CAPE VERDE	16.8N	23.0W	1344	0.94M/ 3.1FT	30
PONTA DELGADA PT	37.7N	25.7W	1214	3.73M/12.2FT	23
FERROL ES	43.5N	8.3W	1207	1.19M/ 3.9FT	22
LA PALMA ES	28.7N	17.8W	1148	2.35M/ 7.7FT	15
TARIFA ES	36.0N	5.6W	1145	1.82M/ 5.9FT	21
ALGECIRAS ES	36.2N	5.4W	1138	0.89M/ 2.9FT	27
HUELVA ES	37.1N	6.8W	1130	2.18M/ 7.1FT	19

NEXT UPDATE AND ADDITIONAL INFORMATION

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* THE NEXT MESSAGE WILL BE ISSUED IN ONE HOUR... OR SOONER IF THE SITUATION WARRANTS.

* AUTHORITATIVE INFORMATION ABOUT THE EARTHQUAKE FROM THE U.S. GEOLOGICAL SURVEY CAN BE FOUND ON THE INTERNET AT EARTHQUAKE.USGS.GOV/EARTHQUAKES -ALL IN SMALL LETTERS-.

* FURTHER INFORMATION ABOUT THIS EVENT MAY BE FOUND AT PTWC.WEATHER.GOV AND AT WWW.TSUNAMI.GOV.

* COASTAL REGIONS OF PUERTO RICO... THE U.S. VIRGIN ISLANDS AND THE BRITISH VIRGIN ISLANDS SHOULD REFER TO WEST COAST AND ALASKA TSUNAMI WARNING CENTER MESSAGES THAT CAN BE FOUND AT WCATWC.ARH.NOAA.GOV.

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ZCZC
WECA41 PHEB 262101
TSUCAX

EXPERIMENTAL TSUNAMI MESSAGE NUMBER 1
NOT FOR DISTRIBUTION
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
2101 UCT WED MAR 26 2014

...TSUNAMI THREAT MESSAGE...

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE *****

THIS MESSAGE IS ISSUED FOR INFORMATION ONLY IN SUPPORT OF THE UNESCO/IOC TSUNAMI AND OTHER COASTAL HAZARDS WARNING SYSTEM FOR THE CARIBBEAN AND ADJACENT REGIONS... THE CARIBE-EWS... AND IS MEANT FOR NATIONAL AUTHORITIES IN EACH COUNTRY OF THAT SYSTEM.

NATIONAL AUTHORITIES WILL DETERMINE THE TSUNAMI THREAT AND APPROPRIATE LEVEL OF ALERT FOR EACH COUNTRY.

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE *****

UPDATES
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* ADDITIONAL TSUNAMI OBSERVATIONS ARE NOW INCLUDED.

PRELIMINARY EARTHQUAKE PARAMETERS
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* MAGNITUDE 8.5
* ORIGIN TIME 1000 UTC MAR 26 2014
* COORDINATES 36.0 NORTH 10.8 WEST
* DEPTH 5 KM / 3 MILES

* LOCATION AZORES-CAPE ST. VINCENT RIDGE

EVALUATION
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* AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 8.5 OCCURRED NEAR THE AZORES-CAPE SAINT VINCENT RIDGE AT 1000 UTC ON WEDNESDAY MARCH 26 2014.

* TSUNAMI WAVES HAVE BEEN OBSERVED.

* BASED ON ALL AVAILABLE DATA... HAZARDOUS TSUNAMI WAVES ARE FORECAST FOR SOME COASTS.

TSUNAMI THREAT FORECAST
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* TSUNAMI WAVES REACHING MORE THAN 3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE ALONG SOME COASTS OF

BAHAMAS.

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PORLAMAR	VENEZUELA	10.9N 63.8W	2157 03/26
SANTA CRZ D SUR	CUBA	20.7N 78.0W	2201 03/26
ILHA DE MARACA	BRAZIL	2.2N 50.5W	2210 03/26
NUEVA GERONA	CUBA	21.9N 82.8W	2339 03/26

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GAUGE LOCATION	GAUGE COORDINATES LAT LON	TIME OF MEASURE (UTC)	MAXIMUM TSUNAMI HEIGHT	WAVE PERIOD (MIN)
TRIDENT PIER FL	28.4N 80.6W	2047	1.32M/ 4.3FT	31
CHARLESTON SC	32.8N 79.9W	2046	0.70M/ 2.3FT	18
NEW BOLD PA	40.1N 74.8W	2035	0.65M/ 2.1FT	17
BERGEN POINT NY	40.6N 74.1W	2035	0.60M/ 2.0FT	20
KIPTOPEKE VA	37.2N 76.0W	2033	0.74M/ 2.4FT	30
EL PORVENIR PM	9.6N 78.9W	2027	0.15M/ 0.5FT	26
SAN ANDRES CO	12.6N 81.7W	2026	0.13M/ 0.4FT	17
POINTE NOIRE CG	4.8S 11.8E	2026	0.26M/ 0.8FT	26
WILMINGTON NC	34.2N 78.0W	2020	0.72M/ 2.3FT	21
BRANDYWINE DE	39.0N 75.1W	2019	0.69M/ 2.2FT	21
CHESAPEAKE BAY VA	37.0N 76.1W	2017	0.76M/ 2.5FT	23
WRIGHT BEACH NC	34.2N 77.8W	2017	0.72M/ 2.3FT	17
QUONSET POINT RI	41.6N 71.4W	2017	0.53M/ 1.7FT	25
PROVIDENCE RI	41.8N 71.4W	2017	0.53M/ 1.7FT	29
NEWPORT RI	41.5N 71.3W	2007	0.53M/ 1.7FT	25
CONIMICUT LIGHT RI	41.7N 71.3W	2007	0.53M/ 1.7FT	31
BOSTON MA	42.4N 71.1W	2007	0.67M/ 2.2FT	24
SANDY HOOK NJ	40.5N 74.0W	2006	0.60M/ 2.0FT	17
BATTERY THE NY	40.7N 74.0W	2006	0.60M/ 2.0FT	32
PORT SONARA CM	4.0N 9.1E	2005	0.14M/ 0.5FT	21
BURLINGTON NJ	40.1N 74.9W	2001	0.74M/ 2.4FT	17
VIRGINIA KEY FL	25.7N 80.2W	1959	0.22M/ 0.7FT	24
LEWES DE	38.8N 75.1W	1954	0.69M/ 2.2FT	19
BORDEN FLATS LT MA	41.7N 71.2W	1952	0.57M/ 1.9FT	23
CAPE MAY NJ	39.0N 74.9W	1949	0.60M/ 2.0FT	22
KINGS POINT NY	40.8N 73.8W	1948	0.60M/ 2.0FT	31
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LIMETREE VI	17.7N	64.8W	1744	0.51M/ 1.7FT 25
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FORT DE FRANCE MQ	14.6N	61.1W	1740	0.49M/ 1.6FT 29
BRIDGEPORT BB	13.1N	59.6W	1733	0.97M/ 3.2FT 26
ASCENSION UK	7.9S	14.4W	1733	0.30M/ 1.0FT 27
ROSEAU DM	15.3N	61.4W	1733	0.61M/ 2.0FT 32
DART 41420	23.5N	67.3W	1730	0.11M/ 0.4FT 31
LE ROBERT MQ	14.7N	60.9W	1730	0.91M/ 3.0FT 29
POINT A PITRE GP	16.2N	61.5W	1730	0.94M/ 3.1FT 19
LE PRECHEUR MQ	14.8N	61.2W	1730	0.56M/ 1.8FT 24
DESHAIES GP	16.3N	61.8W	1729	0.72M/ 2.4FT 23
PORT ST CHARLES BB	13.3N	59.6W	1728	1.31M/ 4.3FT 16
DART 44402	39.5N	70.6W	1728	0.07M/ 0.2FT 21
PARHAM AG	17.1N	61.8W	1724	0.96M/ 3.1FT 24
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NOUAKCHOTT MA	18.1N	15.9W	1422	0.68M/ 2.2FT 14
PALMEIRA CAPE VERDE	16.8N	23.0W	1344	0.94M/ 3.1FT 30
PONTA DELGADA PT	37.7N	25.7W	1214	3.73M/12.2FT 23
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NEXT UPDATE AND ADDITIONAL INFORMATION

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ZCZC
WECA41 PHEB 262201
TSUCAX

EXPERIMENTAL TSUNAMI MESSAGE NUMBER 1
NOT FOR DISTRIBUTION
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
2201 UCT WED MAR 26 2014

...TSUNAMI THREAT MESSAGE...

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NATIONAL AUTHORITIES WILL DETERMINE THE TSUNAMI THREAT AND APPROPRIATE LEVEL OF ALERT FOR EACH COUNTRY.

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UPDATES
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* ADDITIONAL TSUNAMI OBSERVATIONS ARE NOW INCLUDED.

PRELIMINARY EARTHQUAKE PARAMETERS
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* MAGNITUDE 8.5
* ORIGIN TIME 1000 UTC MAR 26 2014
* COORDINATES 36.0 NORTH 10.8 WEST
* DEPTH 5 KM / 3 MILES

* LOCATION AZORES-CAPE ST. VINCENT RIDGE

EVALUATION
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* AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 8.5 OCCURRED NEAR THE AZORES-CAPE SAINT VINCENT RIDGE AT 1000 UTC ON WEDNESDAY MARCH 26 2014.

* TSUNAMI WAVES HAVE BEEN OBSERVED.

* BASED ON ALL AVAILABLE DATA... HAZARDOUS TSUNAMI WAVES ARE FORECAST FOR SOME COASTS.

TSUNAMI THREAT FORECAST
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* TSUNAMI WAVES REACHING MORE THAN 3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE ALONG SOME COASTS OF

BAHAMAS.

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BRAZIL... CUBA... DOMINICAN REPUBLIC... GUYANA... SURINAME... ANGUILLA... ANTIGUA AND BARBUDA... BARBADOS... BERMUDA... DOMINICA... FRENCH GUIANA... GRENADA... GUADELOUPE... MARTINIQUE... MONTSERRAT... SAINT KITTS AND NEVIS... SAINT LUCIA... SAINT BARTHELEMY... SAINT VINCENT AND THE GRENADINES... TRINIDAD AND TOBAGO... TURKS AND CAICOS ISLANDS... AND VENEZUELA.

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RECOMMENDED ACTIONS
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* GOVERNMENT AGENCIES RESPONSIBLE FOR THREATENED COASTAL AREAS SHOULD TAKE ACTION TO INFORM AND INSTRUCT ANY COASTAL POPULATIONS AT RISK IN ACCORDANCE WITH THEIR OWN EVALUATION... PROCEDURES AND THE LEVEL OF THREAT.

* PERSONS LOCATED IN THREATENED COASTAL AREAS SHOULD STAY ALERT FOR INFORMATION AND FOLLOW INSTRUCTIONS FROM NATIONAL AND LOCAL AUTHORITIES.

ESTIMATED TIMES OF ARRIVAL

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* ESTIMATED TIMES OF ARRIVAL -ETA- OF THE INITIAL TSUNAMI WAVE FOR POINTS WITHIN THREATENED REGIONS ARE GIVEN BELOW. ACTUAL ARRIVAL TIMES MAY DIFFER AND THE INITIAL WAVE MAY NOT BE THE LARGEST. A TSUNAMI IS A SERIES OF WAVES AND THE TIME BETWEEN WAVES CAN BE FIVE MINUTES TO ONE HOUR.

LOCATION	REGION	COORDINATES	ETA(UTC)
PORLAMAR	VENEZUELA	10.9N 63.8W	2157 03/26
SANTA CRZ D SUR	CUBA	20.7N 78.0W	2201 03/26
ILHA DE MARACA	BRAZIL	2.2N 50.5W	2210 03/26
NUEVA GERONA	CUBA	21.9N 82.8W	2339 03/26

POTENTIAL IMPACTS

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* A TSUNAMI IS A SERIES OF WAVES. THE TIME BETWEEN WAVE CRESTS CAN VARY FROM 5 MINUTES TO AN HOUR. THE HAZARD MAY PERSIST FOR MANY HOURS OR LONGER AFTER THE INITIAL WAVE.

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* IMPACTS CAN ALSO VARY DEPENDING UPON THE STATE OF THE TIDE AT THE TIME OF THE MAXIMUM TSUNAMI WAVES.

* PERSONS CAUGHT IN THE WATER OF A TSUNAMI MAY DROWN... BE CRUSHED BY DEBRIS IN THE WATER... OR BE SWEPT OUT TO SEA.

TSUNAMI OBSERVATIONS

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* THE FOLLOWING ARE TSUNAMI WAVE OBSERVATIONS FROM COASTAL

AND/OR DEEP-OCEAN SEA LEVEL GAUGES AT THE INDICATED LOCATIONS. THE MAXIMUM TSUNAMI HEIGHT IS MEASURED WITH RESPECT TO THE NORMAL TIDE LEVEL.

GAUGE LOCATION	GAUGE COORDINATES LAT	LON	TIME OF MEASURE (UTC)	MAXIMUM TSUNAMI HEIGHT	WAVE PERIOD (MIN)
MONEY POINT VA	36.8N	76.3W	2144	0.81M/ 2.6FT	29
SALVADOR BR	12.9S	38.7W	2132	0.26M/ 0.9FT	17
KEY WEST FL	24.6N	81.8W	2126	0.10M/ 0.3FT	18
DART 42429	27.4N	85.7W	2124	0.00M/ 0.0FT	27
NEW LONDON CT	41.4N	72.1W	2122	0.73M/ 2.4FT	16
DART 42409	26.7N	85.8W	2116	0.00M/ 0.0FT	16
SEWELLS POINT VA	36.9N	76.3W	2107	0.76M/ 2.5FT	19
VACA KEY FL	24.7N	81.1W	2106	0.14M/ 0.5FT	14
PUERTO MORELOS MX	21.4N	86.8W	2106	0.04M/ 0.1FT	21
SPRINGMAID PIER SC	33.7N	78.9W	2057	0.63M/ 2.1FT	14
LIMON CR	10.0N	83.0W	2053	0.18M/ 0.6FT	27
TRIDENT PIER FL	28.4N	80.6W	2047	1.32M/ 4.3FT	31
CHARLESTON SC	32.8N	79.9W	2046	0.70M/ 2.3FT	18
NEW BOLD PA	40.1N	74.8W	2035	0.65M/ 2.1FT	17
BERGEN POINT NY	40.6N	74.1W	2035	0.60M/ 2.0FT	20
KIPTOPEKE VA	37.2N	76.0W	2033	0.74M/ 2.4FT	30
EL PORVENIR PM	9.6N	78.9W	2027	0.15M/ 0.5FT	26
SAN ANDRES CO	12.6N	81.7W	2026	0.13M/ 0.4FT	17
POINTE NOIRE CG	4.8S	11.8E	2026	0.26M/ 0.8FT	26
WILMINGTON NC	34.2N	78.0W	2020	0.72M/ 2.3FT	21
BRANDYWINE DE	39.0N	75.1W	2019	0.69M/ 2.2FT	21
CHESAPEAKE BAY VA	37.0N	76.1W	2017	0.76M/ 2.5FT	23
WRIGHT BEACH NC	34.2N	77.8W	2017	0.72M/ 2.3FT	17
QUONSET POINT RI	41.6N	71.4W	2017	0.53M/ 1.7FT	25
PROVIDENCE RI	41.8N	71.4W	2017	0.53M/ 1.7FT	29
NEWPORT RI	41.5N	71.3W	2007	0.53M/ 1.7FT	25
CONIMICUT LIGHT RI	41.7N	71.3W	2007	0.53M/ 1.7FT	31
BOSTON MA	42.4N	71.1W	2007	0.67M/ 2.2FT	24
SANDY HOOK NJ	40.5N	74.0W	2006	0.60M/ 2.0FT	17
BATTERY THE NY	40.7N	74.0W	2006	0.60M/ 2.0FT	32

PORT SONARA CM	4.0N	9.1E	2005	0.14M/ 0.5FT	21
BURLINGTON NJ	40.1N	74.9W	2001	0.74M/ 2.4FT	17
VIRGINIA KEY FL	25.7N	80.2W	1959	0.22M/ 0.7FT	24
LEWES DE	38.8N	75.1W	1954	0.69M/ 2.2FT	19
BORDEN FLATS LT MA	41.7N	71.2W	1952	0.57M/ 1.9FT	23
CAPE MAY NJ	39.0N	74.9W	1949	0.60M/ 2.0FT	22
KINGS POINT NY	40.8N	73.8W	1948	0.60M/ 2.0FT	31
BEAUFORT NC	34.7N	76.7W	1946	0.68M/ 2.2FT	16
BRIDGEPORT CT	41.2N	73.2W	1945	0.73M/ 2.4FT	18
ATLANTIC CITY NJ	39.4N	74.4W	1944	0.69M/ 2.2FT	20
WACHAPREAGUE VA	37.6N	75.7W	1943	0.64M/ 2.1FT	25
MONTAUK NY	41.0N	72.0W	1940	0.73M/ 2.4FT	16
SETTLEMENT PT BS	26.7N	79.0W	1939	0.60M/ 2.0FT	26
SANTA MARTA CO	11.2N	74.2W	1937	0.21M/ 0.7FT	25
OREGON INLET NC	35.8N	75.5W	1932	0.79M/ 2.6FT	28
PORT OF SPAIN TT	10.6N	61.5W	1923	0.64M/ 2.1FT	18
OCEAN CITY MD	38.3N	75.1W	1920	0.74M/ 2.4FT	23
NEW HAVEN CT	41.3N	72.9W	1917	0.73M/ 2.4FT	21
DUCK PIER NC	36.2N	75.7W	1914	0.76M/ 2.5FT	18
NANTUCKET ISLAND MA	41.3N	70.1W	1913	0.57M/ 1.9FT	15
SAINT HELENA UK	15.9S	5.7W	1910	0.28M/ 0.9FT	30
TORTOLA VI UK	18.4N	64.6W	1855	0.49M/ 1.6FT	22
HATTERAS NC	35.2N	75.7W	1854	0.79M/ 2.6FT	17
PORT SAN ANDRES DO	18.4N	69.6W	1852	0.34M/ 1.1FT	31
LAGOS NG	6.4N	3.4E	1849	0.14M/ 0.4FT	21
BARAHONA DO	18.2N	71.1W	1839	0.24M/ 0.8FT	16
ILE ROYAL GUIANA FR	5.3N	52.6W	1837	1.05M/ 3.5FT	30
CAP HAITIEN HT	19.8N	72.2W	1824	0.71M/ 2.3FT	16
TAKORADI GA	4.9N	1.7W	1821	0.21M/ 0.7FT	17
PRICKLEY BAY GD	12.0N	61.8W	1818	0.45M/ 1.5FT	15
CHARLOTTE-AMALIE VI	18.3N	64.9W	1818	0.53M/ 1.7FT	21
CULEBRA IS PR	18.3N	65.3W	1817	0.58M/ 1.9FT	19
CHARLOTTEVILLE TT	11.3N	60.5W	1816	0.77M/ 2.5FT	16
DART 42407	15.3N	68.2W	1815	0.03M/ 0.1FT	28
FORTALEZA BR	3.7S	38.5W	1815	0.78M/ 2.6FT	22
MAGUEYES ISLAND PR	18.0N	67.0W	1814	0.44M/ 1.4FT	20
FAJARDO PR	18.3N	65.6W	1813	0.74M/ 2.4FT	22
ALEXANDRIA EG	31.2N	29.9E	1808	0.01M/ 0.0FT	29

PUERTO PLATA DO	19.8N	70.7W	1808	0.78M/ 2.6FT	31
LAMESHUR BAY VI	18.3N	64.7W	1807	0.52M/ 1.7FT	26
SCARBOROUGH TT	11.2N	60.7W	1807	0.77M/ 2.5FT	18
PUNTA CANA DO	18.5N	68.4W	1805	0.83M/ 2.7FT	26
MONA ISLAND PR	18.1N	67.9W	1802	0.61M/ 2.0FT	30
ISABELII VIEQUES PR	18.2N	65.4W	1801	0.58M/ 1.9FT	19
PENUELAS PR	18.0N	66.8W	1800	0.42M/ 1.4FT	29
AGUADILLA PR	18.5N	67.2W	1753	1.02M/ 3.4FT	22
MAYAGUEZ PR	18.2N	67.2W	1752	0.94M/ 3.1FT	23
BARBUDA AG	17.6N	61.8W	1752	0.96M/ 3.1FT	25
ESPERANZA VIEQUES P	18.1N	65.5W	1749	0.46M/ 1.5FT	29
YABUCOA PR	18.1N	65.8W	1747	0.50M/ 1.7FT	28
DART 41424	32.9N	72.5W	1745	0.07M/ 0.2FT	22
ARECIBO PR	18.5N	66.7W	1744	1.23M/ 4.0FT	31
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* IMPACTS CAN VARY SIGNIFICANTLY FROM ONE SECTION OF COAST TO THE NEXT DUE TO LOCAL BATHYMETRY AND THE SHAPE AND ELEVATION OF THE SHORELINE.

* IMPACTS CAN ALSO VARY DEPENDING UPON THE STATE OF THE TIDE AT THE TIME OF THE MAXIMUM TSUNAMI WAVES.

* PERSONS CAUGHT IN THE WATER OF A TSUNAMI MAY DROWN... BE CRUSHED BY DEBRIS IN THE WATER... OR BE SWEPT OUT TO SEA.

TSUNAMI OBSERVATIONS

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* THE FOLLOWING ARE TSUNAMI WAVE OBSERVATIONS FROM COASTAL AND/OR DEEP-OCEAN SEA LEVEL GAUGES AT THE INDICATED LOCATIONS.

THE MAXIMUM TSUNAMI HEIGHT IS MEASURED WITH RESPECT TO THE NORMAL TIDE LEVEL.

GAUGE LOCATION	GAUGE COORDINATES LAT	LON	TIME OF MEASURE (UTC)	MAXIMUM TSUNAMI HEIGHT	WAVE PERIOD (MIN)
WALVIS BAY NA	22.9S	14.5E	2248	0.18M/ 0.6FT	17
PILOTS STATION LA	28.9N	89.4W	2228	0.01M/ 0.0FT	24
TRISTAN DA CUNHA UK	37.0S	12.3W	2155	0.21M/ 0.7FT	28
TACONY PALMYRA BR NJ	40.0N	75.0W	2154	0.68M/ 2.2FT	15
REEDY POINT DE	39.6N	75.6W	2154	0.69M/ 2.2FT	24
PHILADELPHIA PA	39.9N	75.1W	2154	0.69M/ 2.2FT	23
MARCUS HOOK PA	39.8N	75.4W	2154	0.69M/ 2.2FT	31
DELAWARE CITY DE	39.6N	75.6W	2154	0.69M/ 2.2FT	27
CHESAPEAKE CITY MD	39.5N	75.8W	2154	0.60M/ 2.0FT	24
SHIP JOHN SHOAL NJ	39.3N	75.4W	2149	0.60M/ 2.0FT	30
WOODS HOLE MA	41.5N	70.7W	2149	0.67M/ 2.2FT	25
MONEY POINT VA	36.8N	76.3W	2144	0.81M/ 2.6FT	29
SALVADOR BR	12.9S	38.7W	2132	0.26M/ 0.9FT	17
KEY WEST FL	24.6N	81.8W	2126	0.10M/ 0.3FT	18
DART 42429	27.4N	85.7W	2124	0.00M/ 0.0FT	27
NEW LONDON CT	41.4N	72.1W	2122	0.73M/ 2.4FT	16
DART 42409	26.7N	85.8W	2116	0.00M/ 0.0FT	16
SEWELLS POINT VA	36.9N	76.3W	2107	0.76M/ 2.5FT	19
VACA KEY FL	24.7N	81.1W	2106	0.14M/ 0.5FT	14
PUERTO MORELOS MX	21.4N	86.8W	2106	0.04M/ 0.1FT	21
SPRINGMAID PIER SC	33.7N	78.9W	2057	0.63M/ 2.1FT	14
LIMON CR	10.0N	83.0W	2053	0.18M/ 0.6FT	27
TRIDENT PIER FL	28.4N	80.6W	2047	1.32M/ 4.3FT	31
CHARLESTON SC	32.8N	79.9W	2046	0.70M/ 2.3FT	18
NEW BOLD PA	40.1N	74.8W	2035	0.65M/ 2.1FT	17
BERGEN POINT NY	40.6N	74.1W	2035	0.60M/ 2.0FT	20
KIPTOPEKE VA	37.2N	76.0W	2033	0.74M/ 2.4FT	30
EL PORVENIR PM	9.6N	78.9W	2027	0.15M/ 0.5FT	26
SAN ANDRES CO	12.6N	81.7W	2026	0.13M/ 0.4FT	17
POINTE NOIRE CG	4.8S	11.8E	2026	0.26M/ 0.8FT	26
WILMINGTON NC	34.2N	78.0W	2020	0.72M/ 2.3FT	21

BRANDYWINE DE	39.0N	75.1W	2019	0.69M/ 2.2FT 21
CHESAPEAKE BAY VA	37.0N	76.1W	2017	0.76M/ 2.5FT 23
WRIGHT BEACH NC	34.2N	77.8W	2017	0.72M/ 2.3FT 17
QUONSET POINT RI	41.6N	71.4W	2017	0.53M/ 1.7FT 25
PROVIDENCE RI	41.8N	71.4W	2017	0.53M/ 1.7FT 29
NEWPORT RI	41.5N	71.3W	2007	0.53M/ 1.7FT 25
CONIMICUT LIGHT RI	41.7N	71.3W	2007	0.53M/ 1.7FT 31
BOSTON MA	42.4N	71.1W	2007	0.67M/ 2.2FT 24
SANDY HOOK NJ	40.5N	74.0W	2006	0.60M/ 2.0FT 17
BATTERY THE NY	40.7N	74.0W	2006	0.60M/ 2.0FT 32
PORT SONARA CM	4.0N	9.1E	2005	0.14M/ 0.5FT 21
BURLINGTON NJ	40.1N	74.9W	2001	0.74M/ 2.4FT 17
VIRGINIA KEY FL	25.7N	80.2W	1959	0.22M/ 0.7FT 24
LEWES DE	38.8N	75.1W	1954	0.69M/ 2.2FT 19
BORDEN FLATS LT MA	41.7N	71.2W	1952	0.57M/ 1.9FT 23
CAPE MAY NJ	39.0N	74.9W	1949	0.60M/ 2.0FT 22
KINGS POINT NY	40.8N	73.8W	1948	0.60M/ 2.0FT 31
BEAUFORT NC	34.7N	76.7W	1946	0.68M/ 2.2FT 16
BRIDGEPORT CT	41.2N	73.2W	1945	0.73M/ 2.4FT 18
ATLANTIC CITY NJ	39.4N	74.4W	1944	0.69M/ 2.2FT 20
WACHAPREAGUE VA	37.6N	75.7W	1943	0.64M/ 2.1FT 25
MONTAUK NY	41.0N	72.0W	1940	0.73M/ 2.4FT 16
SETTLEMENT PT BS	26.7N	79.0W	1939	0.60M/ 2.0FT 26
SANTA MARTA CO	11.2N	74.2W	1937	0.21M/ 0.7FT 25
OREGON INLET NC	35.8N	75.5W	1932	0.79M/ 2.6FT 28
PORT OF SPAIN TT	10.6N	61.5W	1923	0.64M/ 2.1FT 18
OCEAN CITY MD	38.3N	75.1W	1920	0.74M/ 2.4FT 23
NEW HAVEN CT	41.3N	72.9W	1917	0.73M/ 2.4FT 21
DUCK PIER NC	36.2N	75.7W	1914	0.76M/ 2.5FT 18
NANTUCKET ISLAND MA	41.3N	70.1W	1913	0.57M/ 1.9FT 15
SAINT HELENA UK	15.9S	5.7W	1910	0.28M/ 0.9FT 30
TORTOLA VI UK	18.4N	64.6W	1855	0.49M/ 1.6FT 22
HATTERAS NC	35.2N	75.7W	1854	0.79M/ 2.6FT 17
PORT SAN ANDRES DO	18.4N	69.6W	1852	0.34M/ 1.1FT 31
LAGOS NG	6.4N	3.4E	1849	0.14M/ 0.4FT 21
BARAHONA DO	18.2N	71.1W	1839	0.24M/ 0.8FT 16
ILE ROYAL GUIANA FR	5.3N	52.6W	1837	1.05M/ 3.5FT 30
CAP HAITIEN HT	19.8N	72.2W	1824	0.71M/ 2.3FT 16

TAKORADI GA	4.9N	1.7W	1821	0.21M/ 0.7FT 17
PRICKLEY BAY GD	12.0N	61.8W	1818	0.45M/ 1.5FT 15
CHARLOTTE-AMALIE VI	18.3N	64.9W	1818	0.53M/ 1.7FT 21
CULEBRA IS PR	18.3N	65.3W	1817	0.58M/ 1.9FT 19
CHARLOTTEVILLE TT	11.3N	60.5W	1816	0.77M/ 2.5FT 16
DART 42407	15.3N	68.2W	1815	0.03M/ 0.1FT 28
FORTALEZA BR	3.7S	38.5W	1815	0.78M/ 2.6FT 22
MAGUEYES ISLAND PR	18.0N	67.0W	1814	0.44M/ 1.4FT 20
FAJARDO PR	18.3N	65.6W	1813	0.74M/ 2.4FT 22
ALEXANDRIA EG	31.2N	29.9E	1808	0.01M/ 0.0FT 29
PUERTO PLATA DO	19.8N	70.7W	1808	0.78M/ 2.6FT 31
LAMESHUR BAY VI	18.3N	64.7W	1807	0.52M/ 1.7FT 26
SCARBOROUGH TT	11.2N	60.7W	1807	0.77M/ 2.5FT 18
PUNTA CANA DO	18.5N	68.4W	1805	0.83M/ 2.7FT 26
MONA ISLAND PR	18.1N	67.9W	1802	0.61M/ 2.0FT 30
ISABELII VIEQUES PR	18.2N	65.4W	1801	0.58M/ 1.9FT 19
PENUELAS PR	18.0N	66.8W	1800	0.42M/ 1.4FT 29
AGUADILLA PR	18.5N	67.2W	1753	1.02M/ 3.4FT 22
MAYAGUEZ PR	18.2N	67.2W	1752	0.94M/ 3.1FT 23
BARBUDA AG	17.6N	61.8W	1752	0.96M/ 3.1FT 25
ESPERANZA VIEQUES P	18.1N	65.5W	1749	0.46M/ 1.5FT 29
YABUCOA PR	18.1N	65.8W	1747	0.50M/ 1.7FT 28
DART 41424	32.9N	72.5W	1745	0.07M/ 0.2FT 22
ARECIBO PR	18.5N	66.7W	1744	1.23M/ 4.0FT 31
LIMETREE VI	17.7N	64.8W	1744	0.51M/ 1.7FT 25
SAN JUAN PR	18.5N	66.1W	1740	1.07M/ 3.5FT 22
FORT DE FRANCE MQ	14.6N	61.1W	1740	0.49M/ 1.6FT 29
BRIDGEPORT BB	13.1N	59.6W	1733	0.97M/ 3.2FT 26
ASCENSION UK	7.9S	14.4W	1733	0.30M/ 1.0FT 27
ROSEAU DM	15.3N	61.4W	1733	0.61M/ 2.0FT 32
DART 41420	23.5N	67.3W	1730	0.11M/ 0.4FT 31
LE ROBERT MQ	14.7N	60.9W	1730	0.91M/ 3.0FT 29
POINT A PITRE GP	16.2N	61.5W	1730	0.94M/ 3.1FT 19
LE PRECHEUR MQ	14.8N	61.2W	1730	0.56M/ 1.8FT 24
DESHAIES GP	16.3N	61.8W	1729	0.72M/ 2.4FT 23
PORT ST CHARLES BB	13.3N	59.6W	1728	1.31M/ 4.3FT 16
DART 44402	39.5N	70.6W	1728	0.07M/ 0.2FT 21
PARHAM AG	17.1N	61.8W	1724	0.96M/ 3.1FT 24

DESIRADE GP	16.3N	61.1W	1715	0.89M/ 2.9FT	30
DART 41421	23.4N	63.9W	1708	0.11M/ 0.3FT	22
BERMUDA UK	32.4N	64.7W	1706	1.83M/ 6.0FT	27
DART 44401	37.6N	50.0W	1511	0.09M/ 0.3FT	28
MALIN HEAD IE	55.4N	7.3W	1458	0.49M/ 1.6FT	27
DAKAR SN	14.7N	17.4W	1437	0.76M/ 2.5FT	27
NOUAKCHOTT MA	18.1N	15.9W	1422	0.68M/ 2.2FT	14
PALMEIRA CAPE VERDE	16.8N	23.0W	1344	0.94M/ 3.1FT	30
PONTA DELGADA PT	37.7N	25.7W	1214	3.73M/12.2FT	23
FERROL ES	43.5N	8.3W	1207	1.19M/ 3.9FT	22
LA PALMA ES	28.7N	17.8W	1148	2.35M/ 7.7FT	15
TARIFA ES	36.0N	5.6W	1145	1.82M/ 5.9FT	21
ALGECIRAS ES	36.2N	5.4W	1138	0.89M/ 2.9FT	27
HUELVA ES	37.1N	6.8W	1130	2.18M/ 7.1FT	19

NEXT UPDATE AND ADDITIONAL INFORMATION

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* THE NEXT MESSAGE WILL BE ISSUED IN ONE HOUR... OR SOONER IF THE SITUATION WARRANTS.

* AUTHORITATIVE INFORMATION ABOUT THE EARTHQUAKE FROM THE U.S. GEOLOGICAL SURVEY CAN BE FOUND ON THE INTERNET AT EARTHQUAKE.USGS.GOV/EARTHQUAKES -ALL IN SMALL LETTERS-.

* FURTHER INFORMATION ABOUT THIS EVENT MAY BE FOUND AT PTWC.WEATHER.GOV AND AT WWW.TSUNAMI.GOV.

* COASTAL REGIONS OF PUERTO RICO... THE U.S. VIRGIN ISLANDS AND THE BRITISH VIRGIN ISLANDS SHOULD REFER TO WEST COAST AND ALASKA TSUNAMI WARNING CENTER MESSAGES THAT CAN BE FOUND AT WCATWC.ARH.NOAA.GOV.

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ZCZC
WECA41 PHEB 262355
TSUCAX

EXPERIMENTAL TSUNAMI MESSAGE NUMBER 1
NOT FOR DISTRIBUTION
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
2355 UCT WED MAR 26 2014

...FINAL TSUNAMI THREAT MESSAGE...

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE *****

THIS MESSAGE IS ISSUED FOR INFORMATION ONLY IN SUPPORT OF THE UNESCO/IOC TSUNAMI AND OTHER COASTAL HAZARDS WARNING SYSTEM FOR THE CARIBBEAN AND ADJACENT REGIONS... THE CARIBE-EWS... AND IS MEANT FOR NATIONAL AUTHORITIES IN EACH COUNTRY OF THAT SYSTEM.

NATIONAL AUTHORITIES WILL DETERMINE THE TSUNAMI THREAT AND APPROPRIATE LEVEL OF ALERT FOR EACH COUNTRY.

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE *****

PRELIMINARY EARTHQUAKE PARAMETERS
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* MAGNITUDE 8.5
* ORIGIN TIME 1000 UTC MAR 26 2014
* COORDINATES 36.0 NORTH 10.8 WEST
* DEPTH 5 KM / 3 MILES
* LOCATION AZORES-CAPE ST. VINCENT RIDGE

EVALUATION
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* AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 8.5 OCCURRED NEAR THE AZORES-CAPE SAINT VINCENT RIDGE AT 1000 UTC ON WEDNESDAY MARCH 26 2014.

* BASED ON ALL AVAILABLE DATA... THE TSUNAMI THREAT FROM THIS EARTHQUAKE HAS PASSED AND THERE IS NO FURTHER THREAT.

TSUNAMI THREAT FORECAST...UPDATED

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* THE TSUNAMI THREAT HAS NOW LARGELY PASSED.

RECOMMENDED ACTIONS

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* GOVERNMENT AGENCIES RESPONSIBLE FOR ANY IMPACTED COASTAL AREAS SHOULD MONITOR CONDITIONS AT THE COAST TO DETERMINE IF AND WHEN IT IS SAFE TO RESUME NORMAL ACTIVITIES.

* PERSONS LOCATED NEAR IMPACTED COASTAL AREAS SHOULD STAY ALERT FOR INFORMATION AND FOLLOW INSTRUCTIONS FROM LOCAL AUTHORITIES.

* REMAIN OBSERVANT AND EXERCISE NORMAL CAUTION NEAR THE SEA.

POTENTIAL IMPACTS

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* MINOR SEA LEVEL FLUCTUATIONS UP TO 30 CM ABOVE AND BELOW THE NORMAL TIDE MAY OCCUR IN COASTAL AREAS NEAR THE EARTHQUAKE OVER THE NEXT FEW HOURS.... AND CONTINUING FOR UP TO SEVERAL HOURS.

TSUNAMI OBSERVATIONS

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* THE FOLLOWING ARE TSUNAMI WAVE OBSERVATIONS FROM COASTAL AND/OR DEEP-OCEAN SEA LEVEL GAUGES AT THE INDICATED LOCATIONS. THE MAXIMUM TSUNAMI HEIGHT IS MEASURED WITH RESPECT TO THE NORMAL TIDE LEVEL.

GAUGE LOCATION	GAUGE COORDINATES LAT	LON	TIME OF MEASURE (UTC)	MAXIMUM TSUNAMI HEIGHT	WAVE PERIOD (MIN)
TUXPAN MX	21.0N	97.4W	2343	0.01M/ 0.0FT	29
VERACRUZ MX	19.2N	96.1W	2328	0.01M/ 0.0FT	19
CEDROS BAY TT	10.1N	61.9W	2322	0.64M/ 2.1FT	21
GRAND ISLE LA	29.3N	90.0W	2322	0.01M/ 0.0FT	24
PENSACOLA FL	30.4N	87.2W	2316	0.01M/ 0.0FT	22
FORT FOURCHON LA	29.1N	90.2W	2311	0.01M/ 0.0FT	19
POINT FORTIN TT	10.2N	61.4W	2253	1.05M/ 3.4FT	17
WALVIS BAY NA	22.9S	14.5E	2248	0.18M/ 0.6FT	17
PILOTS STATION LA	28.9N	89.4W	2228	0.01M/ 0.0FT	24
TRISTAN DA CUNHA UK	37.0S	12.3W	2155	0.21M/ 0.7FT	28
TACONY PALMYRA BR NJ	40.0N	75.0W	2154	0.68M/ 2.2FT	15
REEDY POINT DE	39.6N	75.6W	2154	0.69M/ 2.2FT	24
PHILADELPHIA PA	39.9N	75.1W	2154	0.69M/ 2.2FT	23
MARCUS HOOK PA	39.8N	75.4W	2154	0.69M/ 2.2FT	31
DELAWARE CITY DE	39.6N	75.6W	2154	0.69M/ 2.2FT	27
CHESAPEAKE CITY MD	39.5N	75.8W	2154	0.60M/ 2.0FT	24
SHIP JOHN SHOAL NJ	39.3N	75.4W	2149	0.60M/ 2.0FT	30
WOODS HOLE MA	41.5N	70.7W	2149	0.67M/ 2.2FT	25
MONEY POINT VA	36.8N	76.3W	2144	0.81M/ 2.6FT	29
SALVADOR BR	12.9S	38.7W	2132	0.26M/ 0.9FT	17
KEY WEST FL	24.6N	81.8W	2126	0.10M/ 0.3FT	18
DART 42429	27.4N	85.7W	2124	0.00M/ 0.0FT	27
NEW LONDON CT	41.4N	72.1W	2122	0.73M/ 2.4FT	16
DART 42409	26.7N	85.8W	2116	0.00M/ 0.0FT	16
SEWELLS POINT VA	36.9N	76.3W	2107	0.76M/ 2.5FT	19
VACA KEY FL	24.7N	81.1W	2106	0.14M/ 0.5FT	14
PUERTO MORELOS MX	21.4N	86.8W	2106	0.04M/ 0.1FT	21

SPRINGMAID PIER SC	33.7N	78.9W	2057	0.63M/ 2.1FT	14
LIMON CR	10.0N	83.0W	2053	0.18M/ 0.6FT	27
TRIDENT PIER FL	28.4N	80.6W	2047	1.32M/ 4.3FT	31
CHARLESTON SC	32.8N	79.9W	2046	0.70M/ 2.3FT	18
NEW BOLD PA	40.1N	74.8W	2035	0.65M/ 2.1FT	17
BERGEN POINT NY	40.6N	74.1W	2035	0.60M/ 2.0FT	20
KIPTOPEKE VA	37.2N	76.0W	2033	0.74M/ 2.4FT	30
EL PORVENIR PM	9.6N	78.9W	2027	0.15M/ 0.5FT	26
SAN ANDRES CO	12.6N	81.7W	2026	0.13M/ 0.4FT	17
POINTE NOIRE CG	4.8S	11.8E	2026	0.26M/ 0.8FT	26
WILMINGTON NC	34.2N	78.0W	2020	0.72M/ 2.3FT	21
BRANDYWINE DE	39.0N	75.1W	2019	0.69M/ 2.2FT	21
CHESAPEAKE BAY VA	37.0N	76.1W	2017	0.76M/ 2.5FT	23
WRIGHT BEACH NC	34.2N	77.8W	2017	0.72M/ 2.3FT	17
QUONSET POINT RI	41.6N	71.4W	2017	0.53M/ 1.7FT	25
PROVIDENCE RI	41.8N	71.4W	2017	0.53M/ 1.7FT	29
NEWPORT RI	41.5N	71.3W	2007	0.53M/ 1.7FT	25
CONIMICUT LIGHT RI	41.7N	71.3W	2007	0.53M/ 1.7FT	31
BOSTON MA	42.4N	71.1W	2007	0.67M/ 2.2FT	24
SANDY HOOK NJ	40.5N	74.0W	2006	0.60M/ 2.0FT	17
BATTERY THE NY	40.7N	74.0W	2006	0.60M/ 2.0FT	32
PORT SONARA CM	4.0N	9.1E	2005	0.14M/ 0.5FT	21
BURLINGTON NJ	40.1N	74.9W	2001	0.74M/ 2.4FT	17
VIRGINIA KEY FL	25.7N	80.2W	1959	0.22M/ 0.7FT	24
LEWES DE	38.8N	75.1W	1954	0.69M/ 2.2FT	19
BORDEN FLATS LT MA	41.7N	71.2W	1952	0.57M/ 1.9FT	23
CAPE MAY NJ	39.0N	74.9W	1949	0.60M/ 2.0FT	22
KINGS POINT NY	40.8N	73.8W	1948	0.60M/ 2.0FT	31
BEAUFORT NC	34.7N	76.7W	1946	0.68M/ 2.2FT	16
BRIDGEPORT CT	41.2N	73.2W	1945	0.73M/ 2.4FT	18
ATLANTIC CITY NJ	39.4N	74.4W	1944	0.69M/ 2.2FT	20
WACHAPREAGUE VA	37.6N	75.7W	1943	0.64M/ 2.1FT	25
MONTAUK NY	41.0N	72.0W	1940	0.73M/ 2.4FT	16
SETTLEMENT PT BS	26.7N	79.0W	1939	0.60M/ 2.0FT	26
SANTA MARTA CO	11.2N	74.2W	1937	0.21M/ 0.7FT	25
OREGON INLET NC	35.8N	75.5W	1932	0.79M/ 2.6FT	28
PORT OF SPAIN TT	10.6N	61.5W	1923	0.64M/ 2.1FT	18
OCEAN CITY MD	38.3N	75.1W	1920	0.74M/ 2.4FT	23

NEW HAVEN CT	41.3N	72.9W	1917	0.73M/ 2.4FT 21
DUCK PIER NC	36.2N	75.7W	1914	0.76M/ 2.5FT 18
NANTUCKET ISLAND MA	41.3N	70.1W	1913	0.57M/ 1.9FT 15
SAINT HELENA UK	15.9S	5.7W	1910	0.28M/ 0.9FT 30
TORTOLA VI UK	18.4N	64.6W	1855	0.49M/ 1.6FT 22
HATTERAS NC	35.2N	75.7W	1854	0.79M/ 2.6FT 17
PORT SAN ANDRES DO	18.4N	69.6W	1852	0.34M/ 1.1FT 31
LAGOS NG	6.4N	3.4E	1849	0.14M/ 0.4FT 21
BARAHONA DO	18.2N	71.1W	1839	0.24M/ 0.8FT 16
ILE ROYAL GUIANA FR	5.3N	52.6W	1837	1.05M/ 3.5FT 30
CAP HAITIEN HT	19.8N	72.2W	1824	0.71M/ 2.3FT 16
TAKORADI GA	4.9N	1.7W	1821	0.21M/ 0.7FT 17
PRICKLEY BAY GD	12.0N	61.8W	1818	0.45M/ 1.5FT 15
CHARLOTTE-AMALIE VI	18.3N	64.9W	1818	0.53M/ 1.7FT 21
CULEBRA IS PR	18.3N	65.3W	1817	0.58M/ 1.9FT 19
CHARLOTTEVILLE TT	11.3N	60.5W	1816	0.77M/ 2.5FT 16
DART 42407	15.3N	68.2W	1815	0.03M/ 0.1FT 28
FORTALEZA BR	3.7S	38.5W	1815	0.78M/ 2.6FT 22
MAGUEYES ISLAND PR	18.0N	67.0W	1814	0.44M/ 1.4FT 20
FAJARDO PR	18.3N	65.6W	1813	0.74M/ 2.4FT 22
ALEXANDRIA EG	31.2N	29.9E	1808	0.01M/ 0.0FT 29
PUERTO PLATA DO	19.8N	70.7W	1808	0.78M/ 2.6FT 31
LAMESHUR BAY VI	18.3N	64.7W	1807	0.52M/ 1.7FT 26
SCARBOROUGH TT	11.2N	60.7W	1807	0.77M/ 2.5FT 18
PUNTA CANA DO	18.5N	68.4W	1805	0.83M/ 2.7FT 26
MONA ISLAND PR	18.1N	67.9W	1802	0.61M/ 2.0FT 30
ISABELII VIEQUES PR	18.2N	65.4W	1801	0.58M/ 1.9FT 19
PENUELAS PR	18.0N	66.8W	1800	0.42M/ 1.4FT 29
AGUADILLA PR	18.5N	67.2W	1753	1.02M/ 3.4FT 22
MAYAGUEZ PR	18.2N	67.2W	1752	0.94M/ 3.1FT 23
BARBUDA AG	17.6N	61.8W	1752	0.96M/ 3.1FT 25
ESPERANZA VIEQUES P	18.1N	65.5W	1749	0.46M/ 1.5FT 29
YABUCOA PR	18.1N	65.8W	1747	0.50M/ 1.7FT 28
DART 41424	32.9N	72.5W	1745	0.07M/ 0.2FT 22
ARECIBO PR	18.5N	66.7W	1744	1.23M/ 4.0FT 31
LIMETREE VI	17.7N	64.8W	1744	0.51M/ 1.7FT 25
SAN JUAN PR	18.5N	66.1W	1740	1.07M/ 3.5FT 22
FORT DE FRANCE MQ	14.6N	61.1W	1740	0.49M/ 1.6FT 29

BRIDGEPORT BB	13.1N	59.6W	1733	0.97M/ 3.2FT 26
ASCENSION UK	7.9S	14.4W	1733	0.30M/ 1.0FT 27
ROSEAU DM	15.3N	61.4W	1733	0.61M/ 2.0FT 32
DART 41420	23.5N	67.3W	1730	0.11M/ 0.4FT 31
LE ROBERT MQ	14.7N	60.9W	1730	0.91M/ 3.0FT 29
POINT A PITRE GP	16.2N	61.5W	1730	0.94M/ 3.1FT 19
LE PRECHEUR MQ	14.8N	61.2W	1730	0.56M/ 1.8FT 24
DESHAIES GP	16.3N	61.8W	1729	0.72M/ 2.4FT 23
PORT ST CHARLES BB	13.3N	59.6W	1728	1.31M/ 4.3FT 16
DART 44402	39.5N	70.6W	1728	0.07M/ 0.2FT 21
PARHAM AG	17.1N	61.8W	1724	0.96M/ 3.1FT 24
DESIRADE GP	16.3N	61.1W	1715	0.89M/ 2.9FT 30
DART 41421	23.4N	63.9W	1708	0.11M/ 0.3FT 22
BERMUDA UK	32.4N	64.7W	1706	1.83M/ 6.0FT 27
DART 44401	37.6N	50.0W	1511	0.09M/ 0.3FT 28
MALIN HEAD IE	55.4N	7.3W	1458	0.49M/ 1.6FT 27
DAKAR SN	14.7N	17.4W	1437	0.76M/ 2.5FT 27
NOUAKCHOTT MA	18.1N	15.9W	1422	0.68M/ 2.2FT 14
PALMEIRA CAPE VERDE	16.8N	23.0W	1344	0.94M/ 3.1FT 30
PONTA DELGADA PT	37.7N	25.7W	1214	3.73M/12.2FT 23
FERROL ES	43.5N	8.3W	1207	1.19M/ 3.9FT 22
LA PALMA ES	28.7N	17.8W	1148	2.35M/ 7.7FT 15
TARIFA ES	36.0N	5.6W	1145	1.82M/ 5.9FT 21
ALGECIRAS ES	36.2N	5.4W	1138	0.89M/ 2.9FT 27
HUELVA ES	37.1N	6.8W	1130	2.18M/ 7.1FT 19

NEXT UPDATE AND ADDITIONAL INFORMATION

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* THIS WILL BE THE FINAL STATEMENT ISSUED FOR THIS EVENT UNLESS NEW INFORMATION IS RECEIVED OR THE SITUATION CHANGES.

* AUTHORITATIVE INFORMATION ABOUT THE EARTHQUAKE FROM THE U.S. GEOLOGICAL SURVEY CAN BE FOUND ON THE INTERNET AT EARTHQUAKE.USGS.GOV/EARTHQUAKES -ALL IN SMALL LETTERS-.

* FURTHER INFORMATION ABOUT THIS EVENT MAY BE FOUND AT

PTWC.WEATHER.GOV AND AT WWW.TSUNAMI.GOV.

* COASTAL REGIONS OF PUERTO RICO... THE U.S. VIRGIN ISLANDS AND THE BRITISH VIRGIN ISLANDS SHOULD REFER TO WEST COAST AND ALASKA TSUNAMI WARNING CENTER MESSAGES THAT CAN BE FOUND AT WCATWC.ARH.NOAA.GOV.

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ANNEX IV

LIST OF ACRONYMS

AISR	Aeronautical Information System Replacement
ATFMv2	Alaska Tsunami Forecast Model
AWIPS	Advanced Weather Interactive Processing System
CARIBE-EWS	Tsunami and other Coastal Hazards Warning System for the Caribbean and Adjacent Regions
CTIC	Caribbean Tsunami Information Center
CTWP	Caribbean Tsunami Warning Program
DMO	Disaster Management Organizations
EMO	Emergency Management Organization
EMWIN	Emergency Managers Weather Information Network
GTS	Global Telecommunications Satellite
ICG/CARIBE-EWS	Intergovernmental Coordination Group for the Tsunami and other Coastal Hazards Warning System for the Caribbean and Adjacent Regions
IOC	Intergovernmental Oceanographic Commission
IPMA	Instituto Português do Mar e Atmosfera
ITIC	International Tsunami Information Center
MS	Member States
NDGC	National Geophysical Data Center
NEAMTWS	Tsunami Early Warning and Mitigation System in the North-Eastern Atlantic, the Mediterranean and Connected Seas
NOAA	US National Oceanic and Atmospheric Administration
NTHMP	US National Tsunami Hazard Mitigation Program
PRSN	Puerto Rico Seismic Network
PTWC	Pacific Tsunami Warning Center
SOP	Standard Operating Procedures
TIB	Tsunami Information Bulletin

TIS	Tsunami Information Statement
TNC	Tsunami National Contacts
TT	Task Team
TWFP	Tsunami Warning Focal Point
UNESCO	United Nations Educational, Scientific and Cultural Organization
US NTWC	US National Tsunami Warning Center