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CARIBE WAVE 2020:

Supplement Report

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Summary of CARIBE WAVE

The CARIBE WAVE exercise is conducted within the framework of the UNESCO Intergovernmental Coordination Group for Tsunamis and other Coastal Hazards for the Caribbean and Adjacent Regions (CARIBE-EWS) with the purpose of improving and validating tsunami readiness. Given the COVID-19 pandemic, the exercise which took place on March 19, 2020 was conducted under very different circumstances than previous years. Instead of promoting a full tsunami exercise, the UNESCO IOC ICG/CARIBE-EWS agreed to focus on the communication systems at the regional level. It was left up to the Member States and Territories to decide if any additional activity would be carried out and whether to use the simulated messages for one of the two scenarios: Jamaica and Portugal.

Despite the sudden change in scope of the exercise, CARIBE WAVE 20 was held successfully with a participation of forty-four of its forty-eight Member States and Territories. The high participation rate reflects the importance the countries are giving to tsunami preparedness despite the occurrence of a pandemic. Given the earthquake activity in Puerto Rico, as well as the M 7.8 earthquake off Jamaica, Cuba and the Cayman Islands in January 2020, the expectation was that CARIBE WAVE 20 would surpass the 800,000 participants from 2019. According to TsunamiZone.org, the official registration site, over 102,000 people across the entire Caribbean basin from Bermuda thru Brazil had signed up to participate. Registered participants included designated CARIBE EWS Tsunami Warning Focal Points (TWFPs), National Tsunami Warning Centers (NTWCs), government agencies, preparedness organizations, healthcare, businesses and tourism industry. But, with the Corona Virus outbreak, registrations came to a halt and the number of actual participants was much less than the registered number. According to Member State feedback, 4,602 people were directly engaged in 44 Member States*.

For the exercise, the Pacific Tsunami Warning Center (PTWC), issued a “Dummy” message at 14h00 to all officially designated Tsunami Warning Focal Points (TWFPs) and National Tsunami Warning Centers (NTWCs). The methods of communication used to disseminate the message were: the World Meteorological Organization Warning Information System (Global Telecommunication System), the Aeronautical Information Replacement System (AISR), NOAA Weather Wire, AWIPS, Fax, Email and Social Media. According to feedback, as well as social media and web posts, the dummy message was successfully sent and received, validating the communication platforms.

* Antigua and Barbuda, Aruba, Barbados, Belize, Brazil, Colombia, Costa Rica, Cuba, Curacao, Dominica, Dominican Republic, France (Martinique, Guadeloupe, Guyane, St. 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, Trinidad and Tobago, United Kingdom (Bermuda, British Virgin Islands, Cayman Islands and Turks and Caicos), United States (Puerto Rico and the US Virgin Islands) and Venezuela (Bolivarian Republic of).

Supplement Survey Results

Caribe Wave 2020 Survey Report from TWFP/TNC

This year the Caribe Wave 20 exercise was held under different circumstances due to the COVID-19 pandemic. The scope of the exercise was reduced to test communications only, therefore considering the emergency implications some countries were not able to participate. The survey was available through the Survey Monkey services from the start of the exercise on March 19 and extended through May 11. The following Member States and Territories participated in the post-exercise evaluation:

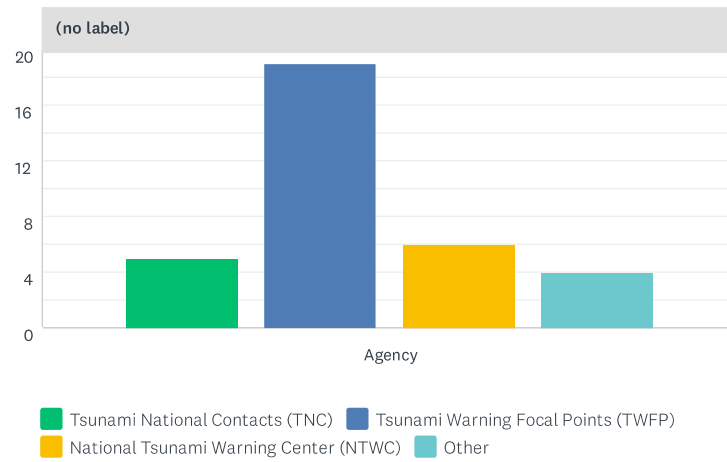
- . Antigua and Barbuda
- . Aruba
- . Barbados
- . Belize
- . Brazil
- . Colombia
- . Costa Rica
- . Cuba
- . Curacao
- . Dominica
- . Dominican Republic
- . France (Martinique, Guadeloupe, St. Barthelemy, St. Martin)*
- . Grenada
- . Guatemala
- . Guyana
- . Haiti
- . Honduras
- . Jamaica
- . Mexico
- . Netherlands (Bonaire, Saba and Sint Eustatius)*
- . Nicaragua
- . Panama
- . Saint Kitts and Nevis
- . Saint Lucia
- . Saint Vincent and the Grenadines
- . Sint Maarten
- . Trinidad and Tobago
- . United Kingdom (Bermuda, British Virgin Islands, Cayman Islands, Turks and Caicos Islands)
- . United States (Puerto Rico, US Virgin Islands)
- . Venezuela (Bolivarian Republic of Venezuela)

* One survey submitted by the Member States for all constituents

Contact Information – Agency

Q2 -

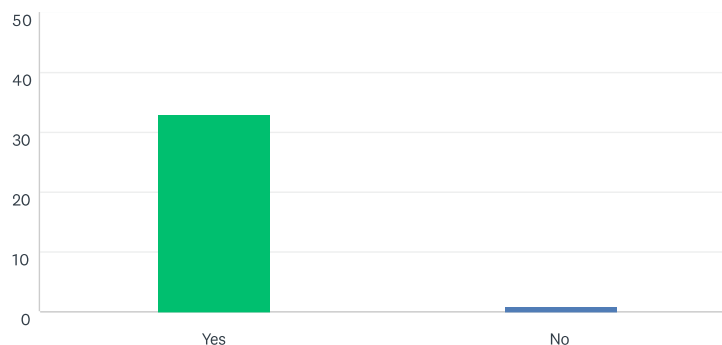
Answered: 34 Skipped: 0



(no label)					
	TSUNAMI NATIONAL CONTACTS (TNC)	TSUNAMI WARNING FOCAL POINTS (TWFP)	NATIONAL TSUNAMI WARNING CENTER (NTWC)	OTHER	TOTAL
Agency	14.71%	55.88%	17.65%	11.76%	
	5	19	6	4	34

Q4 Did your country's Tsunami Warning Focal Points/National Tsunami Warning Center receive the PTWC Caribe Wave 20 Dummy (Start of Exercise) Message?

Answered: 34 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	97.06%	33
No	2.94%	1
TOTAL		34

Comments:

Dominican Republic: On time

NL-Curacao: We did receive the message via email.

NL-Sint Marteen: We did not participate actively.

Trinidad and Tobago: Both the TWFP and the TNC/NTWC received the message by e-mail. However, although the fax was sent and the fax machine at the TNC/NTWC picked up the call and received the data, nothing printed. I have been informed that the same occurred at the TWFP. Fax of the Dummy message received initially by email from the TWFP to the TNC/NTWC worked flawlessly.

Saint Kitts and Nevis: The Deputy National Disaster Coordinator received the message. However, the agency's email did not.

Saint Lucia: Message received at 10:01 a.m.

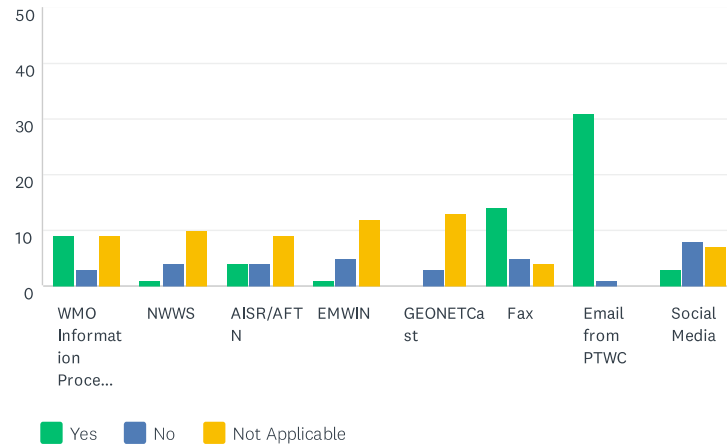
UK-Bermuda: Yes, both the main TWFP (Bermuda Weather Service) and our alternative TWFP, Bermuda Maritime Operation Centre.

UK-Cayman Islands: Nothing came through as far as I can tell – no email.

Venezuela: Received in March 19.

Q5 The PTWC issued the CARIBE WAVE 20 Dummy Message by several methods. Please check all methods through which the message was received by the TWFP/NTWC.

Answered: 33 Skipped: 1



	YES	NO	NOT APPLICABLE	TOTAL RESPONDENTS
WMO Information Process (e.g., GTS, WIS)	42.86% 9	14.29% 3	42.86% 9	21
NWWS	6.67% 1	26.67% 4	66.67% 10	15
AISR/AFTN	23.53% 4	23.53% 4	52.94% 9	17
EMWIN	5.56% 1	27.78% 5	66.67% 12	18
GEONETCast	0.00% 0	18.75% 3	81.25% 13	16
Fax	63.64% 14	22.73% 5	18.18% 4	22
Email from PTWC	96.88% 31	3.13% 1	0.00% 0	32
Social Media	18.75% 3	50.00% 8	43.75% 7	16

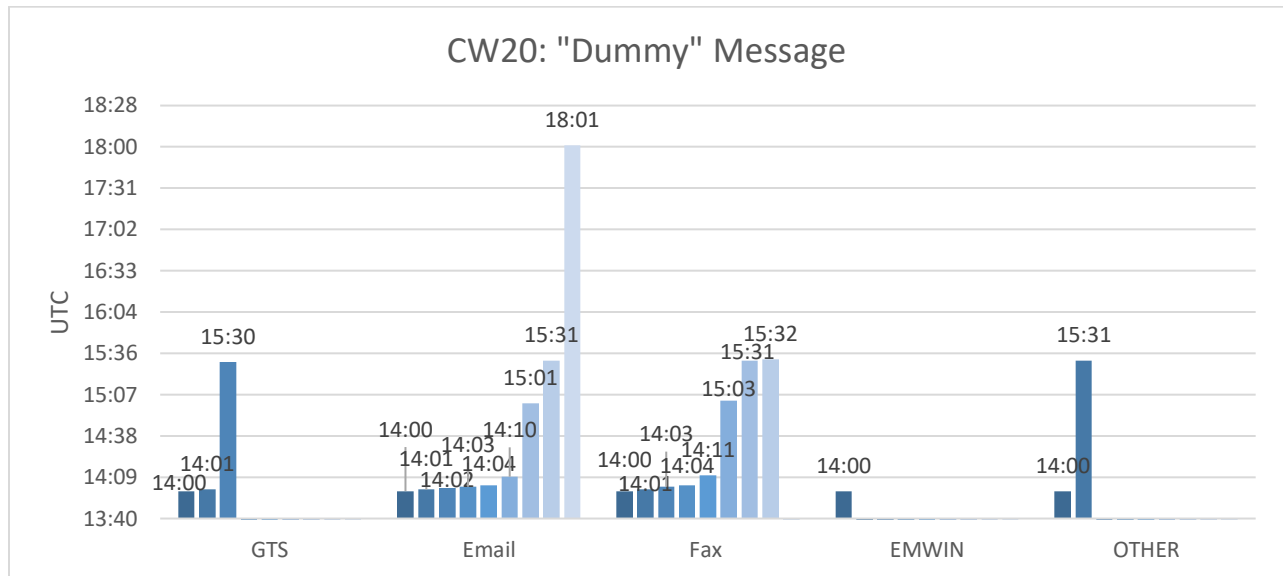
Other:

Dominican Republic: We are having problems with the fax system.

Panama: WhatsApp

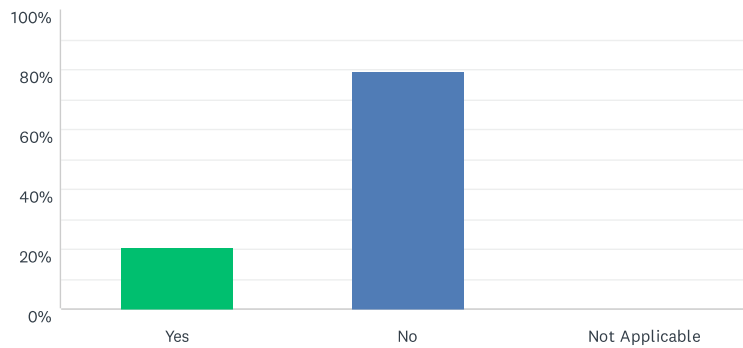
Q6 The PTWC issued the CARIBE WAVE 20 Dummy Message by several methods. Please indicate the time at which the message was received by the TWFP/NTWC in the different systems.

Answered: 31 Skipped: 3



Q7 Were there any problems with the receipt of PTWC CARIBE WAVE 20 Dummy (Start of Exercise) Message?

Answered: 34 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	20.59%	7
No	79.41%	27
Not Applicable	0.00%	0
TOTAL		34

Comments:

Barbados: Neither the alert nor the dummy message was received on the EMWIN, the fax attempted to print the dummy message but was unsuccessful.

Guyana: It came a few hours late.

Jamaica: Not received on Intl AFTN and AISR passworded reset problems. The AISR password scenario needs revisiting.

Nicaragua: The message was received as planned in the exercise.

Panama: I didn't receive by email.

Saint Kitts and Nevis: NEMA's fax machine was down.

Saint Lucia: It is possible that the message was received by other means, but there is no record (archived data) to refer to.

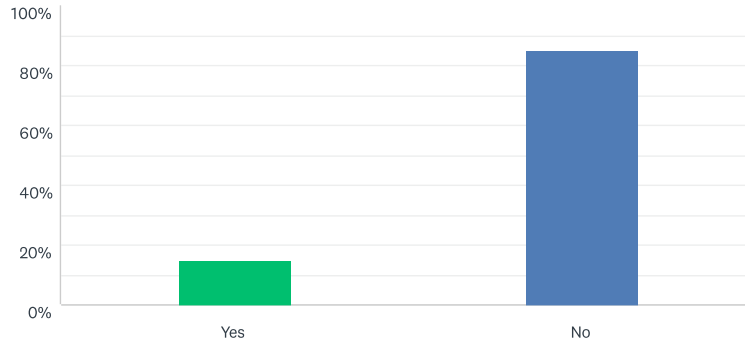
Trinidad and Tobago: We are still not receiving via fax, which is our secondary mode of receiving messages.

UK-British Virgin Islands: I got the message via my email, however the TNC email bviddm@surfbvi.com came in about 10 to 15 min after.

UK-Cayman Islands: Nothing received.

Q8 Did the Tsunami Warning Focal Point / National Tsunami Warning Center receive any message from an organization other than the PTWC (e.g. Puerto Rico Seismic Network, Caribbean Disaster Emergency Management Agency)? If yes, please use the comment box to indicate the agencies you received the message from.

Answered: 34 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	14.71%	5
No	85.29%	29
TOTAL		34

Comments:

Dominican Republic: Puerto Rico Seismic Network

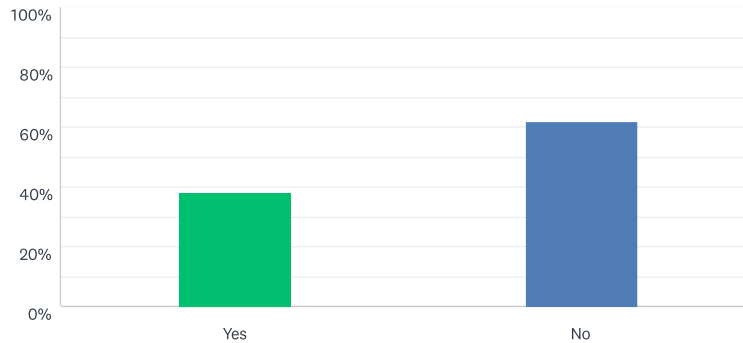
Mexico: Puerto Rico Seismic Network.

UK-British Virgin Islands: Puerto Rico Seismic Network sent a text and they also called and provided information pertaining to the exercise.

USA-Puerto Rico: From Puerto Rico Seismic Network (email, RSS, SMS, automatic call, fax, PREMA radio, Ring Down, Web Page, Social Media).

Q9 Did the TWFP/NTWC prepare and issue messages to relevant in-country agencies for CARIBE WAVE 20? If yes, please mention the agencies.

Answered: 34 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	38.24%	13
No	61.76%	21
TOTAL		34

Comments:

Barbados: Barbados Meteorological Services created their own in-house tsunami watch and warning messages.

Costa Rica: We prepared the messages but didn't send them because the country is under state of emergency and therefore didn't want to overwhelm the CNE.

Cuba: National General Staff of Civil Defense.

Dominican Republic: The emergency and civil protection managers have been taking actions to confront EI COVID-19, and after communicating with them, we decided to conclude not to issue them with test bulletins on this exercise.

France: For Civil Protection

Guatemala: Communication test sent to CONRED (Coordinadora Nacional para la Reducción de Desastres).

Mexico: Civil Protection, Naval Command, Military Command, and Harbor Captains.

Nicaragua: Civil Defense and Executive secretariat of the National System for Care and Prevention of Disasters (SINAPRED).

NL-Bonaire, Saba, Sint Eustatius: We prepared the 23 original messages from the exercise and issued them to local government of Bonaire, St Eustatius and Saba, plus the national crisis department, plus the government's representative on the islands.

NL-Curacao: Yes, we did test our warning system by sending test messages only by WhatsApp due to the COVID-19.

NL-Sint Maarten: Due to the corona crisis we did not organize a local exercise.

Trinidad and Tobago: According to the TWFP, the message was passed on to the NTWC in accordance with our SOP. No new or additional message was prepared or issued. According to the TNC, TNC/NTWC sent WhatsApp message to all ESF's.

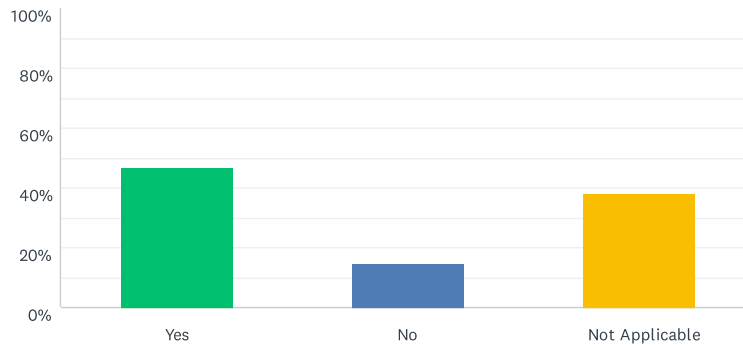
UK-Bermuda: Due to COVID-19, nothing more than noting receipt times of Dummy message.

UK- British Virgin Islands: We only activated our systems and indicated to the population to practice drop cover and hold and provide photos.

USA-Puerto Rico: PREMA did not issue any message. All agencies, including PREMA and NWS-SJ, participated in the PRSN Caribe Wave 2020 Communication Exercise.

Q10 Did the exercise planning at the regional level go well?

Answered: 34 Skipped: 0



ANSWER CHOICES	RESPONSES
Yes	47.06% 16
No	14.71% 5
Not Applicable	38.24% 13
TOTAL	34

Comments:

Belize: No exercise took place due to the pandemic.

Dominican Republic: COVID-19 A series of meetings had been established to organize the exercise in advance, however, the affectation of COVID-19 affected the coordination.

Guatemala: No regional warning was issued.

Jamaica: There was a downscale version that only require acknowledgement that message was received.

Nicaragua: The handbook and the webinars were very useful.

NL-Aruba: Due to COVID-19 issues there was no exercise.

NL-Curacao: Due to the COVID-19 we didn't proceed with the exercise this year.

Trinidad and Tobago: We attempted contact with our sub-regional focal points of Grenada, Guyana and Suriname and also the CDEMA via HF Radio transmission but got no response from any.

UK-Bermuda: Due to COVID-19, all regional plans were cancelled.

UK-Caiman Islands: Full scale activation of the NEOC underway for COVID-19.

USA-Puerto Rico: PRSN coordinated and implement a Communication Test with the emergency management agencies within the Puerto Rico and Virgin Island Region (Puerto Rico, Virgin Islands, British Virgin Islands, and Dominican Republic).

Venezuela: Suspended by the pandemic.

Q11 How many people do you estimate participated in the exercise within your country/territory?

Answered: 30 Skipped: 4

Country	Number of Participants according to Member States
Aruba	No exercise
Belize	to participate, but due to restriction from the Pandemic it was postpone.
Bermuda	6
Brazil	At least 5
British Virgin Islands	to the COVID-19 drastically reduced these figures.
Cayman Islands	Close to 0
Colombia	operator.
Costa Rica	4
Cuba	350 people
Curaçao	We did share the test message with almost 500 people. But no exercise for the public
Dominica	2
Dominican Republic	1,547 people registered on Tsunami Zone
France	French Territories in the Covid-19 context. An approx. quantification will be given later on.
Grenada	Over 1,000 participants
Guatemala	20
Haiti	Estimated 1,000 people

Jamaica	say at this time.
Mexico	811 people
Netherlands	Bonaire, Saba, Sint Eustatius: Around 10
Nicaragua	90
Panama	Not sure
Puerto Rico	webpage tsunamizone.org, Puerto Rico has a preliminary total of 10,986 participants. According to NWS-PR 5 participated.
Saint Kitts and Nevis	Not applicable
Saint Lucia	nil
Saint Martin	0
Saint Vincent and the Grenadines	15
Trinidad and Tobago	As the TWFP, only 1 person participated in accordance with our SOP.
Turks and Caicos	were postponed therefore there was no participation.
U.S. Virgin Islands	10
Venezuela	5

Q12 Please provide a general statement on your CARIBE WAVE 20 Tsunami Exercise experience or any additional comments related to the exercise.

Answered: 24 Skipped: 10

Comments:

Belize: The CARIBE WAVE 20 Tsunami Exercise would have been a joint exercise between the National Meteorological Service of Belize (NMS), National Emergency Management Organization (NEMO) and City Emergency Management Organization (CEMO), but due to the Pandemic, everything was canceled. These organizations will be looking forward to the Caribe Wave 2021 Tsunami Exercise.

Brazil: This is the first time I am participating. Many doubts, questions, and uncertainty. I believe with time things get better. I also believe exercises help a lot for improving the chain of information.

Colombia: Given the COVID-19 situation, Colombia didn't realize the table top exercise with the National Tsunami Warning System, as it had originally planned. However, it was postponed for later when the situation improved.

Costa Rica: Unfortunately, we only performed a communication test with CNE and an internal exercise at SINAMOT, due to the State of Emergency the country has right now. Hope to be able to perform more activities later in the year.

Cuba: A virtual exercise was carried out from the source of the earthquake in Jamaica, in Havana, Barbacoa and Santiago de Cuba, during which models were run and the level of preparedness for the possibility of the occurrence of tsunami was evaluated. The improvement of the modeling, seismic and sea-level monitoring was carried for early warning and risk studies.

Curacao: We did plan an exercise program for the island of Curacao. However, due to the pandemic, we couldn't proceed with the exercise. But we did communicate with our public through social media and local media about Tsunami hazards.

Dominica: The exercise was carried out without any difficulties. A national school earthquake drill was also planned and executed on the 19th.

Dominican Republic: We understand that the scenarios proposed for this version were well structured. Then, a series of actions to carry out this exercise were articulated, they were affected by the worldwide pandemic of COVID-19. The emergency and civil protection authorities kept taking preventive actions against this virus, limiting their participation in it. These Caribe Wave events are important for our countries, thanks to this initiative the institutions involved in these issues have a better understanding of how to prepare the population and mitigate the impact of tsunamis on the measures of our capacities. Hoping that we can plan this event again

Grenada: This year's Caribe Wave, Grenada did a communication test due to COVID-19. Every one that registered received the message in a timely manner. Everything went smoothly. Grenada had planned before COVID-19 to fully evacuate western part of the island, including the gas companies and schools along the western part of the island, also for the parishes that were tsunami ready to participate and exercise their tsunami plans including Carricou and Petite Martique. The event was successful and hopefully 2021 will be a better year for everyone. Please stay safe and protect oneself.

Guyana: Due to the COVID-19 measures, a decision was made to postpone the exercise to a later date. The local Civil Defense body will be carrying out a multi-hazard exercise at a later date and that opportunity will be used to incorporate the Tsunami information. The TWFP/NTWC did go through the established protocol for a Tsunami event.

Haiti: Sorry. It was impossible to realize the Caribe wave in Haiti. There would be a simulation exercise with evacuation in Fort-Liberte. Unfortunately, we couldn't to make it because of the situation and awareness for covid-19.

Jamaica: Fairly good.

Nicaragua: The exercise was carried out only at table level, due to the global problem of the COVID-19.

NL-Aruba: Hope we do this another time after COVID-19 doing.

NL-Bonaire, Saba, and Sint Eustatius: Even with the COVID-19 situation, we decided to go ahead with the exercise, basically because it involved just the communications part. The local governments cancelled further exercise activities that involved people gatherings, if any. For the islands that decided to participate, the exercise went well. We could communicate the simulated tsunami threat as expected.

Panama: I needed more information about the procedure. I didn't know supposed to have just one message.

Puerto Rico: Due to the COVID19 emergency and the active seismic sequence in Southern Puerto Rico we decided to run just the Communication exercise with the emergency agencies within the region. The exercise ran in a timely manner with good participation of agencies.

Saint Lucia: Due to the COVID-19 pandemic, focus was shifted to plans for country response and work schedule changes.

Saint Vincent and the Grenadines: The NTWC St. Vincent and the Grenadines conducted a table top exercise with key stakeholders and exercised its new protocols with the Meteorological Services and the Police. Several scenarios were developed using the exercise trigger and a warning was given for players to exercise their decision making and actions.

Trinidad and Tobago: TWFP: As a communications test, everything went as expected. The only limitation was that our secondary medium (via fax) did not receive the message. TNC: We tested interoperability of the Trunk Radio System between the Trinidad and Tobago Defense Force, Coast Guard, Police and Fire Service. Some work needs to be done in this respect and will be addressed in the coming months, after COVID-10 threat passes. We also sent an Inject message with the initial parameters of the Earthquake/Tsunami to the Senior Disaster

Coordinator of the Ministry of Rural Development and Local Government. He acknowledges receipt of the same.

UK- Bermuda: The timing of the arrival of the Dummy message into all expected communications formats was timely. It is a shame the full exercise couldn't be carried out this year, but hopefully a return to normal business by next year.

UK- British Virgin Islands: Every year generally we have a great exercise. After the news of the COVID-19 and the potential impact it would have on the territory, persons focus changed and went into preparation method both from the side of government and the private it sector. It did however allow us to test some of new systems like voice activation on our sirens and identify issues with our other alert mechanisms

UK- Cayman Islands: It seems bizarre and worrying that we didn't receive any messages!

US Virgin Island: Even though we were unable to have a mass gathering to participate in the actual group drill we were able to have a walk-through of evacuation routes and staging areas.