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Inter-Governmental Oceanographic Commission 2011 National Report

**Submitted by Saint Lucia
for the period January – December 2011**



BASIC INFORMATION**1. ICG/CARIBE EWS Tsunami National Contact**

(Person representing country in the coordination of international tsunami warning and mitigation activities)

Organization: National Emergency Management Organization

2. ICG/CARIBE EWS Tsunami Warning Focal Point

Person, agency or organization with primary responsibility for receiving messages issued by PTWC or CARIBE EWS warning centers, and for issuing tsunami event information within their country. This information is provided in full using the CARIBE EWS Form for designating or updating Tsunami Warning Focal Point (TWFP) provided in the "*Communication Plan for the Interim Tsunami Advisory Information Service to the Caribbean Sea and Adjacent Regions*"

Responsible Organization: Saint Lucia Meteorological Service

National Tsunami Warning Centre (if different from the above)

Pacific Tsunami Warning Centre

3. Tsunami Advisor(s), if applicable

(Person, Committee or Agency managing Tsunami Mitigation in country)

Responsible Organization: Seismic Research Centre of the University of the West Indies

4. Local Tsunami Procedures. (if a local tsunami hazard exists)

- a. What organization identifies and characterizes tsunamigenic events in the immediate source area?

The Pacific Tsunami Warning Centre (PWTC) is currently responsible for identifying and characterizing tsunamigenic events and disseminating warning/information messages on associated threats to the Focal Point (Saint Lucia Meteorological Services). The messages are sent simultaneously on the Global Telecommunications System (GTS) and to relevant SMS and e-mail recipients.

- b. What is the threshold for declaring a potential local tsunami emergency?

M7.0 – M7.7	Depth less than 100KM	
M7.8 and up	Depth less than 100KM	Depth more than 100KM

- c. What organization acts on the information provided by the agency responsible for characterizing the potential local tsunami threat?

- Action by Saint Lucia Met Service

- d. How is the emergency situation terminated?
- Saint Lucia Met Service issues all clear based on cancellation from PTWC

5. Distant Tsunami Procedures (when distant tsunami hazard exists)

- a. What organization becomes aware of tsunamigenic events from a distant source?

Saint Lucia Met Service from PTWC

- b. What action does this organization take with regard to tsunamigenic events from a distant source?

Contact NEMO Secretariat

- c. What are the criteria for initiating tsunami mitigation procedures?

- d. What actions were taken in response to warnings issued by PTWC during the intersessional period?

- i. Inform the Prime Minister
- ii. Call a meeting of Advisory Council
- iii. Issue orders to:
 - Initiate shut down of country
 - Mandatory Evacuation Ordered

6. National Sea Level Network

Please include a table with position and description of stations/sensors, and a map,

STATION NAME	LOCATION	LAT	LONG	SENSORS
Ganter's Bay (CPACC)	Castries Harbour	14° 01.20 N	61°00.06 W	Tide gauge, Water thermometer, Ord. Thermometer, Barometer, Rain gauge, Wind, RH.

7. Information on Tsunami occurrences

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

NONE

8. Web sites (URLs) of national tsunami-related web sites

<http://www.weready.org>

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National Programmes and Activities Information

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Simulation Exercise: CaribeWave 11

INTRODUCTION

CARIB WAVE II/ LANTEX 2011: Caribbean Tsunami Warning Exercise consisted of a half-day tabletop exercise. The goal of the exercise was to establish a learning environment to familiarize the necessary agencies with the protocols in place for responding to a tsunami alert, warning or watch. Exercise play focused on the emergency response to, alerting of citizens, public awareness and coordination of available resources to achieve maximum results.

The exercise was designed to:

1. Strengthen and solidify the partnership between the National Focal Points and the National Contact Points.
2. Assess the intra/ interagency coordination of emergency response agencies, the National Emergency Operations Center (NEOC) and local agencies during an unfolding tsunami disaster triggered by a massive earthquake.
3. Improve the operational readiness of the national emergency management system, and augment the capabilities of that system to respond to emergency situations.
4. Provide an opportunity for individual training and agency cross-training to achieve a high level of collective preparedness.
5. Assist National Emergency Management Organization (NEMO) in assessing, validating, and updating the Government of Saint Lucia (GOSL) Tsunami Contingency Plan (September 2010).

Participants were advised that the exercise was an “evaluated practice,” a format that allowed Players to test their plans and procedures within a no-fault learning environment. The Exercise Controller collected information in order to assess performance of critical tasks during exercise play using the National Tsunami Contingency plans and procedures.

The scope of play required activation of the National Emergency Operations Center (NEOC).

From the Caribbean Tsunami Warning Programme in Puerto Rico participants received messages and scenario injects. Participants implemented the scenario injected from the Program Manager in Puerto Rico through electronic messages, phone calls and any other medium to ensure that the agencies received initial messages from the international Exercise Controller.

Preparing to respond to disasters involves a cycle of public awareness, planning, capability development, training, exercising, evaluation, and improvement. The end result of conducting successful exercises should be an ongoing program of process improvements. This report is intended to assist agencies striving for preparedness excellence by analyzing exercise results and:

- Identifying strengths to be maintained and built upon.
- Identifying potential areas for further improvement.
- Recommending exercise follow-up actions.

The suggested actions in this report should be viewed as recommendations only. In some cases, agencies may determine that the benefits of implementation are insufficient to outweigh the costs. In other cases, agencies may identify alternative solutions that are more effective or efficient. Each agency should review the recommendations and determine the most appropriate action and the time needed for implementation.

TABLE-TOP EXERCISE

Senior management Players from the Prime Minister's Office, the Metrological Office, the Royal Saint Lucia Police Force-Marine Division, the Government Information Service, the Ministry of Physical Development-Sustainable and Environment Department, the Saint Lucia Fire Service and the National Emergency Management Organization participated in a half-day tabletop tsunami simulation that exercised their decision making procedures for responding to an emergency impacting Saint Lucia as a result of earthquake generated tsunami.

EXERCISE EVALUATION

The exercise was designed to provide Participants with an opportunity to assess current capabilities to perform the critical tasks required to respond to a public health emergency resulting from a tsunami. Through assessment of those capabilities, Participants identified strengths, weaknesses, and future training needs.

An Exercise Controller was positioned at exercise location to observe and record exercise events, including Player actions. The Exercise Controller was tasked to capture observations and opinions from Players. In addition, all Participants were informed that their individual evaluations should be done at a post exercise evaluation website by April 1st 2011. The website where participants can provide feedback on the exercise is ([www.http://nthmp.tsunami.gov/exercise2011.php](http://nthmp.tsunami.gov/exercise2011.php)).

Also, at the end of the exercise the Exercise Controller reviewed the attainment of the objectives of the exercise which allowed Participants the opportunity to provide their observations of the exercise. Results of the exercise will be presented at Session VI of the **ICG CARIBE EWS** to be held in the Dominican Republic from April 26th -29th 2011.

During this informal evaluation participants were able to determine lessons learned, make recommendations for improvement actions, and identify key areas of emphasis for future planning. In keeping with the no-fault nature of this exercise, the evaluation embodied in this report examines the plans, procedures, and response systems utilized in this exercise. As an evaluated practice, individual and team Player performances were observed and documented in order to make recommendations for future improvements. Evaluator observations focus primarily on overall unit actions and the interaction between response units rather than on individual Players.

EXERCISE GOALS AND OBJECTIVES

NEMO established the following goals and corresponding objectives for this exercise.

All exercise goals were demonstrated during exercise play and ultimately accomplished. Through demonstration of these objectives, the exercise Players successfully simulated an effective response to scenario events. At the same time, exercise play revealed ways that future responses could be made more effective.

Purpose:

The purpose of the Tabletop exercise was to

- Improve Tsunami Warning System effectiveness along the Caribbean and Gulf coasts and along the Eastern and Gulf Coast of the US and the Eastern Coast of Canada
- Provide opportunities for the Emergency Management and Response Systems to
 - I. Exercise operational lines of communications
 - II. Review tsunami response operational procedures (SOP)
 - III. Promote tsunami preparedness

Additionally, the exercise was also aimed at enhancing the decision making process among the following:

- I. Cabinet Secretary-Deputy Chair NEMO
- II. Permanent Secretary –Ministry of Home Affairs
- III. Chief Fire Officer
- IV. Deputy Chief Fire Officer
- V. Commissioner of Police
- VI. Assistant Commissioner of Police-Operations
- VII. Director-Sustainable and Environment Unit
- VIII. Director-Saint Lucia Met Services
- IX. Deputy Director-Saint Lucia Met Services
- X. Director-Information Services
- XI. Principal Information Officer
- XII. Director-NEMO
- XIII. Deputy Director-NEMO

OBJECTIVES:

The tabletop exercise was specifically designed to test the following:

1. The ability of key players to determine potential problems and select the most appropriate course of action from amongst the alternatives
2. The capacity of personnel to effectively communicate with each other to determine a course of action
3. To test the familiarization of personnel with the plan
4. To evaluate the efficiency of the information flow
5. To assess the ability of the team to anticipate and respond to as well down stream problems in times of danger
6. To identify weaknesses in the plan
7. Ensure message transmission from the TWC to Tsunami Warning Focal Points (TWFP) and from these primary contacts to the Emergency Management Office (EMO).

TSUNAMI WARNING CENTER TO SAINT LUCIA TSUNAMI WARNING FOCAL POINT						
Tsunami Decision Matrix						
Mw	LOCAL		REGIONAL		DISTANT	
	Depth less than 100km	Depth greater than 100km	Depth less than 100km	Depth greater than 100km	Depth less than 100km	Depth greater than 100km
5.0 – 6.4	little chance BULLETIN	little chance BULLETIN	little chance BULLETIN	Improbable	Improbable	Improbable
6.5 – 6.9	possible ALERT	little chance BULLETIN	little chance BULLETIN	Improbable	Improbable	Improbable
7.0 – 7.7	VERY POSSIBLE ALARM	possible ALERT	possible ALERT	little chance BULLETIN	little chance BULLETIN	little chance BULLETIN
greater than 7.8	VERY POSSIBLE ALARM	VERY POSSIBLE ALARM	VERY POSSIBLE ALARM	VERY POSSIBLE ALARM	possible ALERT	little chance BULLETIN
				TSUNAMI		
No Tsunami Cancel Report				Alarm / Update Parameters		
Reports: Administrative – Operational - Scientific						False Alarm

Adapted from Government of Columbia Model – 2008 | Reviewed by the Seismic Research Unit of the UWI – 2009
TSUNAMI DECISION CHART

8. Test tsunami response plans for Caribbean EMO that have developed plans, and provide a catalyst for countries and EMO that have not developed plans
9. EMO, Tsunami Warning Focal Points, Tsunami National Contacts review, discuss and evaluate the various communications alternatives for receiving and disseminating tsunami messages
10. EMO, Tsunami Warning Focal Points, Tsunami National Contacts review, discuss and evaluate potential response actions and challenges
11. Identify processes to issue local all clear notices

ANALYSIS OF MISSION OUTCOMES

Emergency Management

Direction and Control of State Response

National response agency participants effectively demonstrated the capability to manage a tsunami event. Alert and activation of the NEOC was accomplished through a pre-scheduled limited activation order, including a call out to NEMO volunteers. The NEOC was staffed primarily with Emergency Management, Met services, Fire, Marine Police and the other Government personnel in accordance with the Exercise Plan. A number of other agencies who were supposed to be represented did not send representatives.

The NEOC is a newly built, concrete structure. The NEOC is located at a very high elevation and is well equipped to house persons responding to a major tsunami disaster. The Emergency Management staff and volunteers are well trained and serves as the core personnel to facilitate operations involving staff assigned from other agencies.

Exercise Players noted that it would be beneficial to include other decision-makers (e.g., Ministry of Communications and Public Works, Ministry of Education, Ministry of Housing, and Ministry of Health) in future exercises to contribute to emergency management decisions.

Public Information

The NEOC was staffed with two senior officials from the Government Information Service which was used to direct public information activities with some limitations. The Press was

informed of the exercise however only the electronic media showed up to cover the exercise. None of the print media covered the exercise.

There was quite a bit of discussion among participants about effectively reaching members of the public.

DISCUSSIONS

After the ‘**ALL CLEAR**’ was issued by the local Met office, there were significant discussions on whether the various objectives of the exercise had been met. The main aspects of the discussions are captured below:

Objective 1: Ensure message transmission from the TWC to Tsunami Warning Focal Points (TWFP) and from these primary contacts to the Emergency Management Office

- ✓ It was generally felt that the first objective was partially met as only three agencies namely, NEMO, Met Services and the Fire Service received the various messages from the Pacific Tsunami Warning Center (PTWC). The other agencies, namely Police, Government Information Service, the Cabinet Secretary and the Sustainable and Environment Department, did not receive any messages from the PTWC as mandated by the protocols governing Tsunami Warnings in Saint Lucia.

Objective 2: Test tsunami response plans for Caribbean EMO that have developed plans, and provide a catalyst for countries and EMO that have not developed plans

- ✓ Exercise participants reviewed and critiqued the Draft Tsunami Contingency Plan (September 2010) exhaustively. Through this review a number of weaknesses were identified as well as a number of few areas for strengthening. Overall the participants believed that the plan was a workable one and needed an intense period of public education and awareness to ensure that everyone knew what to do before, during and after a tsunami.

Objective 3: EMO, Tsunami Warning Focal Points, Tsunami National Contacts review, discuss and evaluate the various communications alternatives for receiving and disseminating tsunami messages

- ✓ There were spirited discussions concerning alternative methods of reaching person before a tsunami struck. It was agreed that NEMO and the MET Services initiate discussions with the Police and the Fire Service with a view to getting permission

to use the sirens and horns of community police vehicles and Fire appliances to go through communities alerting persons of the dangers of an approaching tsunami.

Objective 4: EMO, Tsunami Warning Focal Points, Tsunami National Contacts review, discuss and evaluate potential response actions and challenges

- ✓ This area produced the most discussions as persons espoused the many challenges that first responders would face in ensuring public safety before, during and after the passage of a tsunami. The first challenge highlighted was the need to evaluate the procedure for getting the information to the Police. It was felt that the Police, under the prevailing protocols, would receive the information almost last, thereby restricting their effectiveness in mounting a coordinated emergency response.
- ✓ The second challenge was the effectiveness of the public awareness campaign. It was also proposed that the plan included provisions for persons who do not want to leave after they have been alerted to the possibility of an on coming tsunami. Generally, participants believed that going forward alert messages must be simple, clear and unambiguous to ensure that persons realize immediately the dangers of an oncoming tsunami.
- ✓ Another idea proposed was the creation of visual and graphic illustrations to highlight to persons the power and destructiveness of tsunamis in order that persons inculcate an understanding of the need to heed warnings as soon as they are issued by the appropriate authorities.

Objective 5: Identify processes to issue local all clear notices

- ✓ It is the preview of the local Met service to issue an '**ALL CLEAR**' for tsunami warnings, alerts and watches.
- ✓ Another issue the surfaced was the inadequacy of using the same sirens and sounds for the **ALL CLEAR** as for the warnings, watch and alerts. It was generally felt that that needed further review to prevent unnecessary panic as persons would not be able to differentiate between alerts and an '**ALL CLEAR**' signal.
- ✓ To rectify the above it was recommended that the Met Office or the person authorized to issue the '**ALL CLEAR**' contact the designated Safety officer in the various groups of evacuated persons to relay the messages in that way there would be less confusion as to the same signal being used for watches, alerts as well as for the '**ALL CLEAR**'

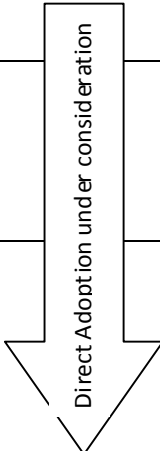
RECOMMENDATIONS AND IMPROVEMENTS

- **Action 1** A detailed map of the Caribbean to be sourced highlighting Saint Lucia at the center with concentric circles depicting various timelines for a tsunami moving across the Caribbean Sea. The Seismic Unit in Trinidad was identified as the entity to engage to ensure such a map is produced.
- **Action 2** Saint Lucia Met Services and NEMO to engage the Saint Lucia Fire Service and the Royal Police Force to study the feasibility and practicality of using Police and Fire appliances sirens to alert persons of the approach of a tsunami. The general idea mooted was that the vehicles can be used to go through communities with their sirens blaring to alert persons of the possibility of an approaching tsunami.
- **Action 3** It was agreed that Standard Operating Procedures be developed for persons receiving the alert/ warning messages in order that they may be in a better position to effectively function during times of crisis or stress brought on by an approaching tsunami
- **Action 4** It was agreed that of the list of five (5) persons to be contacted when an alert / warning message has been received was inadequate. It was felt that the list should be expanded to include 5 alternates or deputies to the main five persons on the call list
- **Action 5** Another action plan was the inclusion of a call to the Vigie Lighthouse to alert local and foreign mariners to the possibility of an approaching tsunami
- **Action 6** It was agreed that a media script and a script to the Lighthouse for mariners be developed and approved by NEMO/ SLUMET
- **Action 7** The exercise participants agreed that the earthquake media so approved should be shared with schools and other educational institutions for dissemination by teachers
- **Action 8** NEMO to continue its engagement of the Bureau of Standards in relation to the standards for public signage
- **Action 9** Exercise participants felt the present media script contained in the Tsunami Contingency Plan (September 2010) needed rewording to reflect the dangers posed by an approaching tsunami.
- **Action 10** it was agreed that a tsunami flag be developed similar to the one used during hurricanes, however the tsunami flag would depict a Hazard Zone as is being used in the public awareness signs.

Tsunami Signage

In 2010 the Saint Lucia Bureau of Standards under took the adoption process of the ISO Standard for Tsunami Signs. The Bureau also agreed that other hazards require signage and that they would also address this need.

The following are the steps being taken:

Development Stage	Description	Maximum Time Limit	Status as of this report
Stage 00 – Preliminary Stage	A request for the development of a new standard or other deliverable is received by the HOD - SDD	Epoch	Request made in 2009
Stage 10 – Proposal Stage	On receipt of this request an evaluation is conducted and the project is submitted for authorization by the SC, through the TMC. If approval is granted, a Technical Committee is formed if an appropriate one does not exist, and the public is notified of the intent to proceed with the project.	2 months	Technical Committee formed in 2010
Stage 20 – Preparatory Stage	A working draft of the standard/deliverable is prepared and a project schedule is established.	3 months	To be launched in the first half of 2012
Stage 30 – Committee Stage	<ol style="list-style-type: none"> 1. The TC/SC/WG develops the draft. 2. TC reaches consensus. 	3 months	
Stage 40 – Enquiry Stage	<ol style="list-style-type: none"> 1. The draft is circulated to the public and major stakeholders for review and comment. 2. TC reaches consensus. 3. SLBS staff conducts a quality review. 	3 months	
Stage 50 – Approval Stage	<ol style="list-style-type: none"> 1. The TMC conducts a second level review to verify that procedures were followed. 2. The SC, through the TMC approves the standard (voluntary or mandatory). 	5 months	
Stage 60 – Publication Stage	Independent and final editorial review is conducted and the standard is forwarded for publishing.	3 months	
Stage 90 – Review Stage	The standard is maintained with the objective of keeping it up to date and technically valid.	3 – 5 years as deemed necessary.	

Public Education

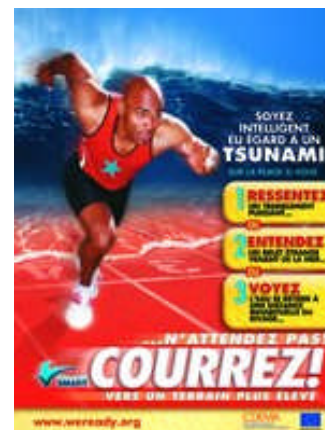
In 2011 the National Met Office of the Dominican Republic shared tsunami material with the delegates of the ICG/Caribe EWS VI meeting.

This material was distributed to the Secondary Schools where students study the Spanish Language.



In 2011 the CDEMA CU shared tsunami material with the NEMO Secretariat. Some of the material was produced in French. This material was distributed to the Secondary Schools where students study the French Language.

A small sample was also shared with the Governor General who is a fluent French speaker, as well as the French Ambassador.



In partnership with the Saint Lucia Postal Service 8,600 flyers were produced and distributed into every private postal box on the island.

Appeared on Talk Shows to discuss Tsunami.



In collaboration with AusAID and CDEMA, Public Service Announcement was distributed to 19 radio stations and 11 television stations.

The PSA addressed the English and Creole needs of the community.

Some supermarkets have eAdvertising. The PSA was also aired via this medium. As shoppers waited their turn with the cashier they were able to see the PSA.

Presentations on a variety of hazards including tsunami have been shared on a CD with the eighteen District Disaster Committees to be used as part of their education program in communities.



Training

Orientation

The Tsunami Warning Focal Point held discussion on the Tsunami Decision Matrix with the Meteorological Forecasters who are the primary receivers of the tsunami advisories.

The Matrix is on displayed at the Hewanorra Met Office. The Tsunami Matrix is also at the Office of the Cabinet Secretary and the Director NEMO.

Procedures/actions by the Met Office regarding tsunami warnings have been discussed at technical meetings and tsunami literature shared in-house.

Simulations

The test advisories from the Pacific Tsunami Warning Centre have begun to arrive in a more regulated manner.

Workshop

Tsunami Warning Focal Point (TWFP) is the designated official or point of contact (primary and alternate) available twenty-four hours a day, seven days a week to receive tsunami and other coast hazard-related information bulletins and warning guidance. The Tsunami Warning Focal Point (TWFP) has the responsibility of notifying the NEMO Secretariat of the event characteristics (earthquake and/or tsunami), in accordance with the procedures of the Tsunami Response Plan. The TWFP receives tsunami advisory information from the Tsunami Warning Centre, or other regional warning centers.

The Government of Saint Lucia has designated that the Saint Lucia Met Services be the Focal Point with the Saint Lucia Fire Service and the Royal Saint Lucia Police Force as alternates.

It became necessary for the Ops Offices of these three agencies to be provided with the necessary skills set to understand the messages from the Tsunami Warning Centre and the resultant actions expected. As such a two day training program was written by A. L. Dawn French.

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7.0 – 7.7	VERY POSSIBLE ALARM	possible ALERT	possible ALERT	little chance BULLETIN	little chance BULLETIN	little chance BULLETIN
greater than 7.8	VERY POSSIBLE ALARM	VERY POSSIBLE ALARM	VERY POSSIBLE ALARM	VERY POSSIBLE ALARM	possible ALERT	little chance BULLETIN
				TSUNAMI		
No Tsunami Cancel Report					Alarm / Update Parameters	
Reports: Administrative – Operational - Scientific						False Alarm

Adapted from Government of Columbia Model - 2008 | Reviewed by the Seismic Research Unit of the UWI - 2009

TSUNAMI DECISION CHART

In April 2010 the program was tested by conducting the modules in real time. The test was supported by USAID/OFDA. The areas covered by the course are:

Unit 1: National Response Mechanism

This Unit describes the Concepts and Principles of Disaster Management and the roles and functions of the members of NEMO in Disaster Management.

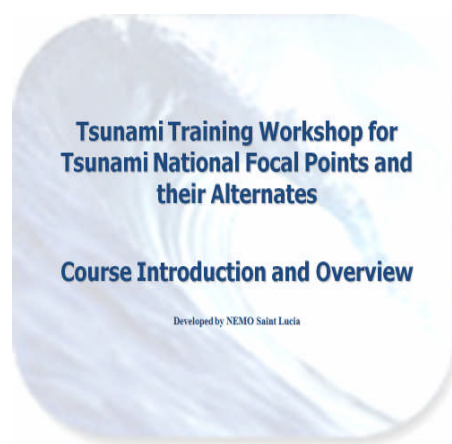
It introduces:

- National Emergency Management Organisation [NEMO]
- National Emergency Management Advisory Committee [NEMAC]
- National Emergency Management Plan [NEMP]

Unit 2: Regional Response Mechanism

This Unit describes the Concepts and Principles of Disaster Management and the roles and functions of the members of the Caribbean Disaster Emergency Management Agency and its partners in Disaster Management. It introduces:

- International Government Group/Caribbean Region [ICG/Caribe]
- Seismic Research Centre [SRC]
- Caribbean Disaster Emergency Management Agency [CDEMA]
- Regional Security System [RSS]
- Caribbean Disaster Response Unit [CDRU]
- Eastern Caribbean Donors Group [ECDG]



Unit 3: Basics of Geography

This Unit will present participants with information on lines of latitude and meridians of longitude, Tectonic Plates, Plotting and Identifying vulnerable areas.

Unit 4: Tsunamis Explained

This Unit will present participants with information covering:

- History of tsunamis in the Caribbean
- Events that can trigger a tsunami [earthquake, volcano, landslide]
- Categories of tsunami [Local, Regional, Distant]

Unit 5: Tsunami SOPs

This Unit presents information on the importance of Standard Operating Procedures (SOPs). It looks at the six scenarios that will require the use of the SOPs:

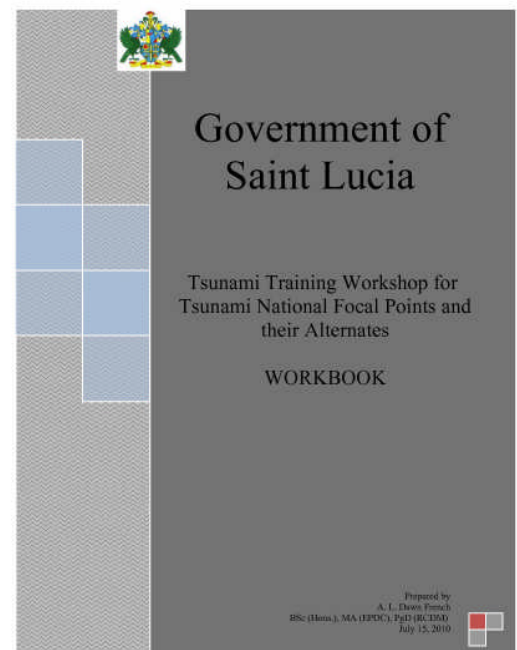
- Tsunami does not threaten Saint Lucia
- Tsunami threatens Saint Lucia in less than 60 minutes
- Tsunami threatens Saint Lucia in 60 minutes to three hours
- No potential for tsunami
- Cancellation
- Test message

Unit 6: Crisis Communications

This Unit introduces participants to the workings of communications up and down the command chain.

Unit 7: Group Exercise

This Unit presents a group exercise, which provides an opportunity for participants to practice most of the techniques and skills taught throughout the course.



Next Steps

CaribeWave 2012

- The occasion of CaribeWave12 shall be used for an orientation of the Staff of the National Emergency Management Organisation Secretariat. The test advisories from the Pacific Tsunami Warning Centre arrive by fax as well as email and it is important that the Staff is familiar with the actions that should be triggered by the arrival of an advisory.
- The *Proposed Five Year Strategy (2012 - 2017) for Building Resilience to Tsunamis*¹ shall also be discussed.

Procedures

- The Tsunami Focal Point and his team shall revise the Met Emergency Procedures to include tsunamis.
- The test advisories from the Pacific Tsunami Warning Centre have begun to arrive in a more regulated manner; as such the Standard Operation Procedures for TESTS shall be used in 2012.
- In keeping with the Disaster Management Act the 2011 Annual Report shall be distributed. Past reports are available at http://stlucia.gov.lc/docs/Reports/tsunami_reports.htm

Forward Planning

- Saint Lucia is in the process of adopting a *Five Year Strategy (2012 - 2017) for Disasters*. It shall become necessary for an addendum regarding tsunami. The Proposed Five Year Strategy (2012 - 2017) for Building Resilience to Tsunamis shall be presented for discussion and adoption.
- Discussion paper to be completed on the merits of Saint Lucia consideration for the hosting of the Caribbean Tsunami Secretariat.
- The Bureau of Standards shall complete the process of the adoption of ISO Standard for Marine Signage to include tsunami.
- Consideration to participate in the *UNESCO Public Participation Programme 2012*

¹ <http://www.unisdr.org/asiapacific/ap-iotsunami/proposed-TEWS-strategy-2006-2008.pdf>

Proposed Five Year Strategy (2012 - 2017) for Building Resilience to Tsunamis²

CDM Outcome #4	Enhanced community resilience in CDEMA states/territories to mitigate and respond to the adverse effects of climate change and disasters.		
CDM Outputs #4.3	Communities more aware and knowledgeable on disaster management and related procedures including safer building Techniques		
Relevant HYOGO Priorities for Action #3	Use knowledge, innovation and education to build a culture of safety and resilience at all levels		
Target Audience	The Communities of Saint Lucia		
Areas of Intended Outcomes	Intended Outputs	Proposed Partner Agencies	Comment
1. Disaster Management	<p>Support institutional capacity-building in disaster management through:</p> <ol style="list-style-type: none"> 1. Consideration for the location of the Caribbean Tsunami Secretariat 2. Support the strengthening of NEMO Secretariat. 3. Promotion of strong linkage and coordination between the NEMO Secretariat and other disaster management authorities. 4. Facilitate the set-up of coordination and information exchange mechanisms. 5. Promotion of the integration of disaster risk reduction in coastal zone management. 6. Guidance on warning dissemination mechanisms, from authorities to people at risk. 7. Completion of the <i>National Tsunami Plan</i> 8. Review of Legal Powers for mandatory evacuation. 	<ol style="list-style-type: none"> 1. Office of the Prime Minister 2. NEMO Secretariat 3. CDEMA CU 4. Attorney General Chambers 5. Coastal Zone Management Unit 	

² <http://www.unisdr.org/asiapacific/ap-iotsunami/proposed-TEWS-strategy-2006-2008.pdf>

2. Public Awareness	<p>Facilitate the enhancement of public awareness regarding tsunami through:</p> <ol style="list-style-type: none"> 1. Continued dissemination of public education material (Posters, PSAs etc) 2. Dissemination of best practices and lessons learned from past disasters. 3. Support for national and local authorities to carry out targeted awareness raising campaigns through the media and public events. 4. Support the development of public information material tailored to local cultures and languages. 5. Support the launch of a website 6. Support the compilation of all-hazard kit (web-based information materials). 	<ol style="list-style-type: none"> 1. NEMO Secretariat 2. Saint Lucia Meteorological Service 3. CTIC 4. CDEMA CU 	
3. Education	<p>Support the strengthening of the education role in early warning through:</p> <ol style="list-style-type: none"> 1. Promotion and support for the integration of a natural hazard component into school curriculum. 2. Engagement of members of the education system in adoption of educational materials related to disaster management and tsunamis 3. Training of trainers programmes for schoolteachers and disaster managers. 	<ol style="list-style-type: none"> 1. NEMO Secretariat 2. Saint Lucia Meteorological Service 3. Ministry of Education 4. CTIC 5. CDEMA CU 	
4. Community-based Approaches	<p>Support the strengthening of local communities' response capability through:</p> <ol style="list-style-type: none"> 1. Assessment and improvement of community preparedness measures in coastal zones. 2. Training of District Disaster Committees 3. Targeted-action at tsunami high risk community areas and develop plans to strengthen their capacity and build their resilience 4. Continued evacuation planning. 	<ol style="list-style-type: none"> 1. NEMO Secretariat 2. Ministry of Social Transformation 3. District Disaster Committee 	

5. Early Warning System Implementation	<p>Support the completion of the current core system implementation plans through:</p> <ol style="list-style-type: none"> 1. Support the completion of Tsunami Signage with the Bureau of Standards 2. Support the need of bathymetry for inundation mapping 3. Clarification and strengthening of roles among national tsunami focal points, the Saint Lucia Meteorological Service and NEMO. 4. Support for a faster and more dependable international communication between tsunami warning centers 	<ol style="list-style-type: none"> 1. NEMO Secretariat 2. Bureau of Standards 3. Coastal Zone Management Unit 4. Saint Lucia Meteorological Service 	
6. Tsunami Risk Assessment and Mitigation	<p>Facilitate the coordination of research development and risk assessment to provide:</p> <ol style="list-style-type: none"> 1. Consideration of tsunami building standards for consideration to be part of the National Building Code. 2. Knowledge exchange and training on hazard map and its application strategy. 3. Identification of hot spots with higher probability of tsunami risk in the near future. 4. Risk factor analysis on tsunami disaster affected population. 		

Coastal Zone Management Advisory Committee

As a member of the Coastal Zone Management Advisory Committee (CZMAC), NEMO shall collaborate with the Coastal Zone Unit to achieve its mandates.

COASTAL ZONE MANAGEMENT UNIT
SUSTAINABLE DEVELOPMENT AND ENVIRONMENT DEPARTMENT
MINISTRY OF PHYSICAL DEVELOPMENT AND THE ENVIRONMENT
PROGRAMMING FORMAT 2010-2015

PROGRAMME AREA: *DATA ACQUISITION*

CODE:

PROJECT ACTIVITY: *ACQUIRE COASTAL BASELINE DATA*

CODE:

OPERATIONAL OBJECTIVE/TARGET: *TO BETTER GUIDE DEVELOPMENT PLANNING ON THE ISLAND*

ACTIVITIES TO BE UNDERTAKEN	PRINCIPAL RESPONSIBILITY	CO-OPERANTS	COMMENTS	FINANCES
<p>Acquire the following baseline data:</p> <ul style="list-style-type: none"> • Bathymetric • Oceanographic • Hydrodynamic <p>Finalise coastal habitat mapping exercise</p> <p>Development of protocols/procedures for accessing this information by national government and non-government bodies, and foreign agencies.</p>	CZMU	Ministries with responsibilities for the Government geographic information systems database, disaster risk reduction, nearshore resources/fisheries, development of environmental policy	In 2009, as part of an EU SFA 2003 project coastal habitat mapping exercise took place from Roseau Bay, along the island's west coast, to Saltibus Point along the island's east coast. The following habitat types were mapped: mangroves, beaches, cliffs, sea grass beds and coral reefs.	External funds need to be sourced for this activity. As much as possible, this activity should be coordinated with work undertaken as part of climate change adaptation and disaster risk reduction

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