



Government of Saint Lucia

World Bank/OECS Emergency Recovery and Disaster Management Project

Earthquake Response Plan

Document of the Saint Lucia National Emergency Management Plan

**Cabinet Conclusion 649/2007 Authorised the 2007
National Emergency Management Plan for Saint Lucia**



Contents	Page
<u>PART I GENERAL INFORMATION</u>	
1.- Name of the Plan	7
2.- Number and Date of Revision	9
3.- Acronyms/Abbreviations	9
4.- Definitions/Glossary of Terms	11
5.- Introduction	12
6.- Objectives	14
6.1.- General	14
6.2.- Specific	14
7.- Legal Framework	15
7.1.- Disaster Committees	15
7.2.- Revision of the Plan	16
7.3.- Contents of the Plan	16
7.4.- Emergency Powers	17
8.- Policies	17
9.- Organisations Involved in the Plan	17
9.1.- NEMO	17
9.2.- National Disaster Committees	18
9.3.- District Disaster Committees	21
9.4.- Seismic Research Unit. UWI.	22
9.5.- Emergency Operations Centres	23
9.6.- National Emergency Operations Centre (EOC)	24
9.7.- Sectoral EOCs	25
9.8.- Private Sector Emergency Operations Centre (PEOC)	25
9.9.- International Emergency Operations Centre (IEOC)	26
9.10.- Crisis Management Centre (Ministry of Tourism)	27
9.11.- District EOCs	27
10.- Responsibilities of the Organisations	28
10.1.- Responsibilities of NEMO's Director	28
10.2.- Responsibilities of NEMO's Deputy Director	28
10.3.- Responsibilities of Response Organisations	29
11.- Organisation/Structure of the Response	29
11.1. Information about Earthquakes' Impact.	29
11.2. Post Impact Meeting and Activation of the EOC	30
11.3. Structure of the Response.	31
12.- Relation with other Plans	33
12.1.- National Plans	33
12.2.- Regional and International Plans	33
12.3.- Local Plans/Procedures	34
12.4.- Plans from other Countries	35

Contents	Page
<u>PART II DISASTER SCENARIOS</u>	
13.- Hazard Description	36
13.1.- Types of Earthquakes	36
13.2.- Magnitude	38
13.3.- Intensity	38
13.4.- Locating Earthquakes	38
14.- Vulnerability	39
14.1.- Vulnerability	40
14.2.- Vulnerable Systems	41
14.3.- Vulnerable System Elements	41
14.4.- Vulnerability and Earthquake's Effects	43
15.- Risk Assessment	44
15.1.- Main Earthquakes that have Impacted Saint Lucia	44
15.2.- Earthquake Risk	45
16.- Disaster Scenarios	46
16.1.- Disaster Scenarios and Earthquakes	46
16.2.- Two Examples of Earthquake Disaster Scenarios	46
<u>PART III EMERGENCY RESPONSE AND RELIEF</u>	
17.- Emergency Response and Recovery Activities	49
17.1.-Relation Between Hazards' Effects and Response/Recovery Activities	49
17.2.- Response/Recovery Activities	49
18.- Emergency Responsibilities assigned to the Organisations Involved in the Plan	54
19.- Initial Aerial Damage Assessment	56
20.- Emergency Procedures	57
<u>PART IV THE PLANNING PROCESS</u>	
21.- Revision and Updating of the Plan	59
21.1.- The Planning Process	59
21.2.- Organisations Responsible for Revising the Plan	61
21.3.- Revision of the Plan and its Procedures	61
21.4.- Responsibilities of the Planning Organisations	62
22.- Dissemination of the Plan	63
23.- Training	63
24.- Simulation Exercises	65
25.- Record of Real Events	66

Contents	Page
-----------------	-------------

PART V EMERGENCY PROCEDURES

26.- Emergency Procedures	68
EP-001.- Notification	69
EP-100.- Emergency Operations Centre (National)	79
EP-150.- Telecommunications	92
EP-200.- Transportation	96
EP-250.- Evacuation	101
EP-350.- Shelter Management	104
EP-400.- Land Search and Rescue	109
EP-450.- Security	112
EP-500.- Medical Attention	115
EP-550.- Environmental Health	119
EP-600.- Damage Assessment and Needs Analysis	124
EP-650.- External Assistance	128
EP-700.- Supply Management	133
EP-750.- Public Information	138
EP-800.- Protection and Rehabilitation of Infrastructure	142
EP-850.- Environmental Protection and Rehabilitation	146
EP-900.- Reconstruction	149
EP-950.- District Disaster Committee General Procedure (Earthquake)	152

PART VI.- ATTACHMENTS AND APPENDICES

27.- Attachments	
Attachment 1 - Records Of Real Events	155
Attachment 2 - Comparing the Richter and Modified Mercalli Scales	156
Attachment 3 - Example of Media Script	158

PART I GENERAL INFORMATION

1.- Name of the Plan

The name of this plan is ‘The Saint Lucia National Earthquake Response Plan’

In this document, it will be referred to as ‘the Earthquake Response Plan’, ‘the Earthquake Response Plan’, ‘the Plan’ or by its acronyms:

- ✓ SLNEMP/EP, or
- ✓ EP.

The Saint Lucia National Earthquake Response Plan is also subsection 02 of section 03 (National Emergency Plans) of the Saint Lucia National Emergency Management Plan. [SLU/NEMP-03-02]

The Saint Lucia National Emergency Management Plan will be referred here to as ‘the National Plan’ or by its acronym SLU/NEMP

All sections of the National Emergency Management Plan (of which the Earthquake Response Plan is part of) were revised by the Emergency Planning and Mitigation Advisor, Mr. Arturo Lopez-Portillo with the stakeholders and under the co-ordination of the Director of NEMO; Section 04 (Subsections 01, 02, 03 and 04) and Subsections 04 and 05 of Section 05 were designed by the Disaster Business Advisor, Mr. William Gowen. (See Table 1.1. below)

Acknowledgement is made of the revision and comments given by the Chairpersons of the National Disaster Committees and the rest of the members of the NEMO. This plan is the result of their contribution.

The plan was also circulated to the SRU, to CDERA and to Mr. Tony Gibbs from Consulting Engineering Partners Ltd. for comments. Thanks are given to them for their valuable comments.

Thanks are given to the Seismic Research Unit of the University of the West Indies for allowing the reproduction of information from its website.

Below, in table 1.1, we present the components/sections of the National Emergency Management Plan.

Table 1.1 The Saint Lucia National Emergency Management Plan SLU/NEMP

Name of section	Name of Sub-section
The Saint Lucia National Emergency Management Plan	
Policies & Guidelines	
	Donations and Importation of Relief Supplies Policy
	Emergency Shelter Management Policy
	Emergency Housing Policy
	Mitigation Policy
	Travel Policy
	Management and Disposal of Dead Bodies in Disasters Policy
National Emergency Plans	
	The Saint Lucia National Hurricane Plan
	The Saint Lucia National Earthquake Response Plan
	The Saint Lucia National Volcanic Eruption Plan
	The Saint Lucia Oil Spill Contingency Plan
	The Saint Lucia National Mitigation Plan
	The Saint Lucia Stress Response Team Plan
Sectoral Plans	
	The Ministry of Communications, Works, Transport and Public Utilities Plan
	The Saint Lucia National Emergency Health Sector Plan
	The Hospitality Industry Crisis Management Plan
	The Saint Lucia Private Sector Response Plan
Specific Plans	
	Mass Crowd Events Plan
	Plan for Evacuation of Anse La Raye
	Mode Plan for the District Disaster Committees in Saint Lucia
	The Saint Lucia Prison Emergency Plan
	The Port Authority Cruise Line Ships Plan
	The Saint Lucia Seaports Contingency Plan

2.- Number and Date of Revision.

The previous National Earthquake Plan, included in the Saint Lucia National Disaster Plan from 1996, has changed completely. Under the World Bank/OECS Emergency Recovery and Disaster Management Project, an emergency planning and mitigation advisor was hired to revise and produce a new plan under the co-ordination of NEMO.

All the stakeholders revised the Earthquake Response Plan and its procedures: Chairpersons of the National Disaster Committees, key Governmental Officers involved in the plan and procedures, and the Seismic Research Unit of the University of the West Indies.

The version presented here is Version Number 1 from December 11th, 2002 (or the 2002 version) produced after the last revision in a NEMAC meeting chaired by Dr. Kenny Anthony, Prime Minister of Saint Lucia, that had the participation of the Chairpersons of the National Disaster Committees and representatives from the Police and Fire Service.

So, the version presented here is a totally new version of the Earthquake Response Plan; as such, it is considered to be Version number 1 for the year 2002.

Future versions have to be prepared, according to the Disaster Preparedness and Response Act, every year as mentioned in Part III 8 (1) of the Act.

3.- Acronyms/Abbreviations

ADRA	The Adventist Disaster Relief Agency.
CARICOM	The Caribbean Community
Caritas	Caritas Internationalis. Catholic Relief Organisation.
CDB	Caribbean Development Bank.
CDERA	Caribbean Disaster Emergency Response Agency
CDRU	CARICOM Disaster Relief Unit
CEHI	Caribbean Environmental Health Institute
CIDA	The Canadian International Development Agency
C&W	Cable and Wireless.
CMU	Hospitality Industry Crisis Management Unit
CMC	Hospitality Industry Crisis Management Committee
CMT	Hospitality Industry Crisis Management Committee
DANA	Damage Assessment and Needs Analysis
DFID	Department for International Development (UK)
DPRA	Disaster Preparedness and Response Act No. 13 of 2000. (Saint Lucia.)
ECDG	Eastern Caribbean Donor Group
ECHO	European Community Humanitarian Office
EOC	Emergency Operations Centre
EP/ SLNEM-EP	Saint Lucia National Earthquake Response Plan
FEMA	Federal Emergency Management Agency (US)
FUNVISIS	Fundación Venezolana de Investigaciones Sismológicas
GIS	Geographical Information Systems
GOSL	Government of Saint Lucia
GPS	Global Positioning System

HAZMAT	Hazardous Materials
HF	High Frequency
HTS	Helen Television System
IADB	Inter American Development Bank
ICS	Incident Command System
IEOC	International Emergency Operations Centre (for and in Saint Lucia)
IMO	International Maritime Organisation
IPGP	Institut de Physique du Globe de Paris. (Martinique)
LUCELEC	Saint Lucia Electricity Services LTD.
MSF	Médecins sans Frontières (Doctors without borders)
MOH	Ministry of Health.
NDO/NDMO	National Disaster Management Organisation
NDMP	Saint Lucia National Disaster Management Plan (1996)
NEMAC	National Emergency Management Advisory Committee
NEMO	National Emergency Management Office
NEOC	National Emergency Operations Centre
NHMC	National Hazard Mitigation Council
OCHA	UN Office for the Co-ordination of Humanitarian Affairs
OECS	Organisation of Eastern Caribbean States
OFDA	US Office of Foreign Disaster Assistance
OPAC	Oil Pollution Action Committee
OSC	On Scene Commander
Oxfam	Oxfam International. Confederation of NGO's for Relief.
PAHO	The Pan American Health Organisation
PM	The Honourable Prime Minister of Saint Lucia.
PS	Permanent Secretary.
PEOC	Private Sector Emergency Operations Centre (in Saint Lucia).
RCI	Radio Caribbean International
REMPEITC	The Regional Marine Pollution Emergency Information and Training Centre Wider Caribbean. International Maritime Organisation.
RSL	Radio Saint Lucia
RSLPF	Royal Saint Lucia Police Force
RSS	Regional Security System
RSTS	Relief Supplies Tracking System
SITREP	Situation Reports
SLASPA	Saint Lucia Air and Sea Ports Authority
SLBGA	Saint Lucia Banana Growers Association
SLHTA	Saint Lucia Hotel and Tourism Association
SLTB	Saint Lucia Tourist Board
SLU-GIS	Government Information Services
SLUNEMP	Saint Lucia National Emergency Plan

SOP	Standard Operating Procedure
Southcom	The United States Army Southern Command
SRU	Seismic Research Unit
SUMA	Supply Management (software)
UDO	Universidad de Oriente (Venezuela)
UN	The United Nations
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
USGS	United States Geological Survey
UWI	University of the West Indies
WASCO	Water and Sewerage Company (Saint Lucia)
WB	The World Bank
WFP	World Food Programme
WIBDECO	Windward Islands Banana Development and Exporting Company Ltd.

4.- Definitions/Glossary of Terms.

Except otherwise indicated, definitions are taken from 'Volcanoes, Earthquakes and Tsunamis in the Eastern Caribbean' Seismic Research Unit, University of the West Indies, May, 2001. More definitions and general information about earthquakes can be found in the US Geological Survey (USGS) website at: <http://www.usgs.org/> Particular information about earthquakes and the Eastern Caribbean can be found in the SRU website at: <http://www.uwiseismic.com>

Aftershocks. A series of smaller earthquakes which may follow a large earthquake.

Earthquake. Earthquake is a term used to describe both sudden slip on a fault, and the resulting ground shaking and radiated seismic energy caused by the slip, or by volcanic or magmatic activity, or other sudden stress changes in the earth. (USGS).

Epicentre. The point on the Earth's surface directly above the hypocentre.

Focal Depth. The Depth from the epicentre to the hypocentre.

Hypocentre or focus. The point at which the lithosphere ruptures to generate an earthquake.

Intensity. The degree of shaking at a particular location during an earthquake.

Intensity map. A map showing intensity at different locations during an earthquake.

Intensity scales. Scales from which the intensity of an earthquake at a particular location can be determined from its effects on people, buildings, ground, trees, etc.

Isoseismal lines. Lines drawn on a map through locations of equal intensity.

Liquefaction. The phenomenon whereby apparently solid ground loses its cohesion during an earthquake and behaves like a liquid.

Lithosphere. The rigid outermost part of the earth.

Magnitude. A measure of the size of an earthquake.

Plate. A large slab of the lithosphere.

Plate tectonics. A theory pertaining to the relative movements of the plates.

Seismic moment. An alternative measure of the size of an earthquake.

Subduction. Subduction is the process of the oceanic lithosphere colliding with and descending beneath the continental lithosphere (USGS).

Subduction zone. The subduction zone is the place where two lithospheric plates come together, one riding over the other. Most volcanoes on land occur parallel to and inland from the boundary between the two plates (USGS).

5.- Introduction

As mentioned in Section 2 of this Plan, *Number and Date of Revision*, the EP is a totally new plan. It was designed within the World Bank/OECS Emergency Recovery and Disaster Management Project. The design of the Plan was based on the document 'Guidelines for the Revision of Emergency/Recovery Plans. November, 2001' also designed by the Emergency Planning and Mitigation Advisor of the project. These guidelines consider several sections that would make any emergency plan a complete plan by taking into consideration:

- ✓ The need for a specific plan for a specific hazard
- ✓ The need to have a written emergency plan
- ✓ The need to establish a permanent planning process
- ✓ The need to have in reality the resources mentioned in the written plan.

The spirit of the Plan is to have a permanent planning process against earthquakes in Saint Lucia. Without a planning process, every plan is useless. The planning process is what keeps plans in good shape and updated. This can only be attained by involving all the stakeholders (government

[national and local], private and social organisations involved in the planning and execution of emergency activities during a earthquake) together to analyse and update the plans regularly.

Two elements will be helpful to maintain the planning process in Saint Lucia: NEMO and the DPRA; the first one through the co-ordination of the planning process and the second one by establishing the need to revise and present the plan to the NEMAC and the PM on a yearly basis. This ensures that the plan and its procedures will be updated at least once a year and, as it will be stated later in this plan, at least after every simulation exercise and after every real event caused by an earthquake.

The Earthquake Response Plan considers the fact that emergency and recovery (relief, rehabilitation and reconstruction) correspond directly to specific effects and consequences of the impact of a specific hazard; therefore, the emergency/recovery activities can (and must) be identified before the hazard strikes; so, within the planning process, the execution of emergency/recovery activities can (and must) be planned, personnel can (and must) be trained and resources can (and must) be tested before the specific hazard strikes.

The structure of the Plan, by being based on the above-mentioned guidelines, intends to be the same as that for other plans (hurricanes, volcanic eruptions) within the NEMP and, also, a first step to homologate emergency plans not only within the country, but also at the Regional and International levels.

The Plan comprises specific emergency procedures. Each procedure corresponds to a specific generic emergency/response activity and its responsibility is assigned to one and only to one specific organisation to ensure, thus, that there are no gaps or overlapping in the responsibilities to be executed during an emergency or in the case of a disaster.

The emergency procedures of this plan have been written also according to guidelines designed by the Emergency Planning and Mitigation Advisor: “Writing Standard Operating Procedures (SOPs) Version 4, December 1st, 2001”. This will ensure, again, that procedures, as well as plans, will be similar in structure (contents, components, sequence of the steps, etc.) as a very important factor to homologate emergency procedures in Saint Lucia and in the Region.

The emergency procedures have been assigned different numbers according to the specific emergency/recovery activity they are written for.

Another advantage is that by writing procedures per specific emergency/recovery function, some of them will be useful for other hazard plans within the National Plan that demand the same function; for instance, a Supply Management Emergency Procedure that could be exactly the same (or at least very similar) for earthquakes and also for hurricanes, and a Public Information Emergency Procedure that could be the same for two or more specific hazards.

The Plan and its procedures are easy to be updated. Every Section of the Plan and every emergency procedure of the plan can be updated separately; that is, it is not necessary to change every single section and every single procedure in the plan at the same time; they have to be revised once a year, but maybe not all of them would require changes.

In the case of simulation exercises that test only one or some procedures, these can be updated as well after evaluating the exercise without necessarily updating the entire plan and the rest of the procedures.

In conclusion, the Earthquake Response Plan intends to be a comprehensive plan and an easy plan to be read, revised, tested, executed and updated.

6.- Objectives.

6.1. General.

- To protect Saint Lucia and her people, institutions, infrastructure, services, resources, environment and economy in the case of the impact of earthquakes.

6.2. Specific.

- To describe the possible characteristics of earthquakes that could affect Saint Lucia
- To describe the possible effects the impact of earthquakes could cause in Saint Lucia
- To establish the need of an emergency response, an emergency plan and a permanent planning process against earthquakes in Saint Lucia.
- To determine the activities that will be executed by the organisations in Saint Lucia to protect and rescue her people, institutions, infrastructure, services, resources, environment and economy in the case of the impact of an earthquake.
- To assign responsibilities to governmental, private and social organisations in Saint Lucia for the planning, testing, execution and evaluation of the emergency activities identified.
- To determine the sequence of the emergency/ recovery activities that will be executed after the impact of earthquakes in order to optimise resources and increase the effectiveness of the response.

- To establish a permanent planning process in Saint Lucia against earthquakes, at all levels, that involves all the stakeholders in the revision and updating of the plan, its emergency procedures and the resources needed for their implementation.
- To have a planning tool that guides the training of personnel and testing of the Plan according to specific emergency/recovery activities considered.
- To have the planning tool to keep records and the evaluations of real events caused by earthquakes in Saint Lucia and to include the results, recommendations and lessons learned in the Plan itself so they will not be repeated.

7.- Legal Framework.

Several sections from the Disaster Preparedness and Response Act, #13 of 2000 as follows:

7.1.- Disaster Committees.

For the creation of committees and their activation during threatened disaster alerts:

Part III, 6 (6) : “ The Director shall in consultation with the National Advisory Committee establish other committees and sub-committees charged with particular responsibilities, whether defined by geographical area or otherwise, in relation to the response to emergencies and disasters in Saint Lucia, which other committees and sub-committees shall be available to be convened whenever a threatened disaster alert arises or a disaster strikes”

7.2. Revision of the Plan

For the revision of the EP as part of the National Plan:

Part III, 8 (1): “ The Director shall prepare annually for the approval of the Prime Minister, the National Disaster Response Plan, comprising the statement of contingency arrangements under the co-ordination of the Director for responding to the threat or event and aftermath of a disaster in Saint Lucia whether or not the threat or the disaster is such as to prompt the declaration of a disaster emergency.”

Part III, 8, (3): “The Director of NEMO shall consult the National Emergency Management Advisory Committee”

7.3 Contents of the Plan

For some of the contents of the National Plan and some of the emergency procedures that have to re-designed:

The DPRA mentions several emergency procedures that are included in the table below; some are applicable for earthquakes and others for other hazards.

Part III, 8 (2) (a) to (o) as follows:

Article from Section 2 of the DPRA	Table 7.1 Key activities that have to be included in the national plan as emergency procedures.
a	General. For public officers, statutory bodies and local government units to perform functions related to mitigation, preparedness, response and recovery
b	Co-ordination. Co-ordinating the National Plan and the plans from those mentioned in (a) above.
c	Warning. Alert. Notification.
d	Inventories of services, systems and supplies.
e	EOC. Mobilising services and systems including provision of manpower for EOC and for the families of those providing manpower.
f	Protection and restoration of communications. Nationally and internationally.
g	Information. Public and those mentioned in (a) above.
h	Supply management. Food, water, clothing and medical supplies.
i	Fire. Epidemics.
j	Shelter Management.
k	Co-operation with international organisations and governments.
l	Supply Management. Accepting and facilitated the distribution of volunteer services for relief supply.
m	Evacuation. Evacuation of all the residents of any area ... desirable in the event of a disaster emergency.
n	Transportation. Communications. Supply Management. Requisitioning private property...And for assessing and paying compensation.
o	Security. Protection of life and property from looting and riotous behaviour.

7.4. Emergency Powers

For Emergency Powers:

- 1.- The Emergency Powers Act, No. 5 of 1995.
- 2.- The Constitution. Article 17.

8.- Policies

Policies that are directly related to the Plan are included in the correspondent section of the SLU/NEMP as mentioned in table 1.1 of this Plan.

- ✓ Donations and Importation of Relief Supplies Policy
- ✓ Emergency Shelter Management Policy
- ✓ Emergency Housing Policy
- ✓ Mitigation Policy
- ✓ Adequate Management Disposal of Dead Bodies in Disasters

9.- Organisations Involved in the Plan

9.1. NEMO

The National Emergency Management Organisation (NEMO) in Saint Lucia is responsible for having the Nation in a state of preparedness for the case of an emergency. Also for responding to the needs of the Nation after a disaster and co-ordinating the response at local, regional and international levels.

During an event NEMO is part of a larger network that comes into existence to respond to a disaster.

NEMO is responsible for the co-ordination of all response activities before, during and after the impact of an earthquake. This is done from NEMO headquarters and, if it is activated, from the EOC.

The NEMO comprises several Governmental Organisations responsible for response and recovery activities that not necessarily chair any Disaster Committee; we will mention here: The Royal Saint Lucia Police Force, the Fire Service and the Saint Lucia Air and Seaports Authority.

In further sections of this plan and in the emergency procedures we will detail the role of all agencies according to the functions they are responsible for within this plan.

9.2. National Disaster Committees.

There are 10 National Disaster Committees in Saint Lucia that belong to NEMO; they are all involved in the planning and response against earthquakes. Their composition is as follows.

Transportation Disaster Committee

Chairperson
Deputy Chairperson-Air Transport
Representative- Ground Transport
Representative-Shipping
Coast Guard Commander
Chief Pilot, Air and Sea Port Authority
Representative of the Tourism Sector (SLTB)

Supply Management Disaster Committee

Chairman-representative of Service Clubs
Deputy Chairman-Representative of Service Clubs
Rep- CARITAS Antilles.
Rep- Saint Lucia Rotary Clubs
Rep-Saint Lucia Red Cross
Rep- Kiwanis Club
Rep- Lions Club
Rep- Toast Masters Club
Rep- Optimist Club
Rep- Adventist Development and Relief Agency
Rep- Salvation Army
Rep- Saint Lucia Boy Scouts
Rep- Saint Lucia Girl Guides
Rep- Saint Lucia Cadet Corps
Rep WASCO
Rep-Ministry of Social Transformation Culture and Local Government
Rep-Chamber of Commerce
Rep-Tourism Sector. (SLTB)
Rep-Rotarak Club
Rep-Leo Clubs
Supplies Officer Ministry of Commerce
Controller or Rep-Customs and Excise Department

Telecommunications Disaster Committee

Chairman Amateur-Radio

Deputy Chairman- To be nominated by the Permanent Secretary, Ministry of Communications.

Rep- Telecommunication companies.

Rep-Amateur Radio

Rep-Citizens' Band

Rep-Tourism Sector (SLTB)

Co-ordinator, Radio Operator Emergency Response Group

Damage Assessment and Needs Analysis Disaster Committee

Chairman

Director of Meteorological Services

Director of Saint Lucia Tourist Board.

Rep- Ministry of Agriculture

Rep- Department of Statistics

Rep- Banana Companies/WIBDECO

Rep-Chamber of Commerce

Rep- Ministry of Works.

Rep- Ministry of Health, Human Services and Family Affairs.

Rep- Ministry of Education, Human Resource Development, Youth and Sports

Rep- Telecommunication companies.

Rep- WASCO

Rep-LUCELEC

Rep- Red Cross

Rep Supply Management Committee

Construction and Engineering Associations.

Architects Associations

Quantity Surveyors Associations

Information Disaster Committee

Chairman.

SLU-GIS

Media Houses.

Health & Welfare Disaster Committee

Chairman-President of the Saint Lucia Red Cross Society

Deputy Chairman-Chief Medical Officer or Representative of MOH

Director General- Saint Lucia Red Cross

All Hospital Administrators

Chief Environmental Health Officer

Head-Nutrition Unit, MOH

Saint John's Ambulance Brigade
Rep-Fire Department
Coast Guard
Saint Lucia Cadet Corps
Director-Social Services. Ministry of Social Transformation
Rep-Tourism Sector. SLTB

Note: While writing and approving this Plan, the Health and Welfare Committee went through changes in its structure and functions: Health matters (medical attention, environmental health, etc.) will be the responsibility of the Ministry of Health or a Health Committee. Since shelter management is no longer (as they used to be) the responsibility of the Health and Welfare Committee but of the Shelter Management Committee, only the welfare activities will be taken by a Welfare Committee; it will also have the responsibility of the Stress Management Response Team (stress management of emergency responders) and mental health (stress management of the population after disasters). By the time this plan was approved (December 11th, 2002) all this was underway.

Emergency Works/Rehabilitation/Reconstruction Disaster Committee

Chairman-Chief Engineer, Ministry of Works.
Deputy Chairman-Permanent Secretary, Ministry for Planning.
Town Clerk, Castries City Council
Rep-LUCELEC
Rep- WASCO
Rep-Telecommunication Companies
Planning Officer Ministry of Health
Director of Community Services and Local Government
Executive Director-Saint Lucia Hotel and Tourism Association.
The Saint Lucia Solid Waste Management Authority.

Shelter Management Disaster Committee.

Chairman- Chief Education Officer.
Schools
Churches
Community Centres
Private Buildings

Oil Pollution Action Committee[OPAC]

Saint Lucia Air and Sea Ports Authority (Chairperson)
Ministry for Planning (Deputy Chairperson)
Royal Saint Lucia Police Force

Saint Lucia Marine Police Unit (OSC)-(Sea)
Fire Service (OSC-Land)
Fisheries Department
Solid Waste Management Authority
Shell Antilles & Guiana's LTD Bulk Station
Texaco Bulk Station
HESS Oil (Saint Lucia LTD)
Ministry for External Affairs, International Trade and Civil Aviation.
Caribbean Environmental Health Institute (CEHI)
National Conservation Authority

Crisis Management Disaster Committee

Coordinator/Chairperson and NEMO Liaison	-	Permanent Secretary, Ministry of Tourism.
Head Crisis Management Unit	-	Director of Product Development, Ministry of Tourism.
Damage and Needs Assessment Unit	-	Executive Vice-president. SLTHA
Air and Seaports Information Unit	-	Rep. SLASPA.
Evacuation Unit	-	Rep. St. Lucia Rep. Ground handlers Association & Rep. National Taxi Council.
Public Relations and Communications Unit	-	Deputy Director. SLTB

9.3. District Disaster Committees

There are 18 District Disaster Committees as follows:

1. Local Disaster Committee Gros Islet
2. Local Disaster Committee Castries North
3. Local Disaster Committee Castries North East/Barbonneau
4. Local Disaster Committee Castries South East
5. Local Disaster Committee Castries East
6. Local Disaster Committee Castries Central
7. Local Disaster Committee Castries South *
8. Local Disaster Committee Anse La Raye
9. Local Disaster Committee Canaries
10. Local Disaster Committee Soufriere
11. Local Disaster Committee Choiseul
12. Local Disaster Committee Laborie

13. Local Disaster Committee Vieux Fort North *
14. Local Disaster Committee Vieux Fort South
15. Local Disaster Committee Micoud North
16. Local Disaster Committee Micoud South
17. Local Disaster Committee Dennery North
18. Local Disaster Committee Dennery South

All Committees, their functions and their members can go through changes depending of the needs determined in the permanent planning process. Chairpersons of committees must establish permanent contact with all the members of their Committees in order to define and assign responsibilities, before, during and after disasters.

9.4.- Seismic Research Unit. University of the West Indies.

From the SRU website:

- The Seismic Research Unit of the University of the West Indies is responsible for monitoring earthquakes and volcanic activity in the Commonwealth Eastern Caribbean countries.
- It is funded by the governments of Trinidad and Tobago, Grenada, St. Vincent and the Grenadines, Barbados, Saint Lucia, Dominica, Montserrat, St. Kitts-Nevis, Antigua-Barbuda. and the British Virgin Islands
- The unit maintains a volcanic surveillance and warning system in these countries, conducts research on the distribution and frequency of earthquakes in the Eastern Caribbean and provides advice on earthquake and volcano related issues to governments of the contributing countries. Additional volcanic monitoring is carried out on contract in the Netherlands Antilles islands of Saba and Sint Eustatius (Statia).
- External funding is currently provided by a number of external agencies and private companies including The United States Agency for International Development (USAID/OFDA), the British Department for International Development (DFID), the Caribbean Development Bank (CDB) the Atlantic Natural Gas Company and British Gas.
- Close links are maintained with other similar organisations in the region such as the Institut de Physique du Globe de Paris (IPGP) which is responsible for volcanic and earthquake monitoring in the islands of Martinique and Guadeloupe, the Fundación Venezolana de Investigaciones Sismológicas (FUNVISIS) and the Universidad de Oriente (UDO) which monitor earthquakes in Venezuela.

- The seismograph networks operated by the Unit were modified in 1998-2000. From 1977 to 1999 at least one short-period seismograph station in each of the volcanic islands transmitted a continuous signal to Unit headquarters in St. Augustine Trinidad where the signals were simultaneously displayed visually on drum recorders and recorded digitally on PC's.
- The SRU has now implemented a system in which each of the important volcanic islands has a network of short-period stations recording on a local PC. The local PC passes on triggered event data packages to Trinidad via the internet and can also be interrogated at need through the ordinary telephone system. Three-component broadband instruments are located at strategic points throughout the region.
- In addition to providing services in volcanology and seismology to the governments of the contributing countries, the unit also provides consultancy services in various aspects of Applied Seismology, Engineering Geophysics and Geology to both local and international insurance Companies and Civil Engineering establishments.

The SRU will provide the NEMO with information about earthquakes, vulnerability and risks. In the case of an earthquake impact, the SRU will contact NEMO and provide information about the earthquake's characteristics.

The Government of Saint Lucia recognises the SRU as the official agency regarding earthquake research issues; the Government of Saint Lucia, however, will welcome all technical assistance. Other agencies will be required to liaise with the SRU during a crisis.

9.5. Emergency Operations Centres

During an emergency NEMO transforms into the Emergency Operations Centre (EOC). The EOC is the centre from which all commands are issued and to which all demands are made. It is the seat of control for the Prime Minister as Chairman of the EOC and as leader of the State. All heads of essential services locate at the EOC.

Every EOC has to determine beforehand:

- 1.- Its location
- 2.- Its members
- 3.- Its material resources (communications, information, etc)
- 4.- What organisations it has to be communicated with and by what means
- 5.- Activities that have to be conducted and co-ordinated from it
- 6.- When it has to be activated
- 7.- When it has to be deactivated

These points and others have to be included in the EOC emergency procedures. (See EOC Emergency Procedure in Part V of this plan)

9.6. National Emergency Operations Centre (EOC).

The National Emergency Operations Centre (NEOC) is located in the Red Cross Building in Vigie, Castries. It is activated after the impact of an earthquake if the conditions (damage and needs) determine so, and only by the decision of the NEMO.

All the personnel considered in the plan to be in the EOC have to go there and co-ordinate the execution of the response/relief activities they are responsible for.

Two teams are considered to be in the EOC, Team # 1 that must arrive once the EOC is activated, and Team # 2 that arrives 12 hours later to substitute Team # 1.

The teams are the following:

Team # 1:
National Disaster Coordinator
Permanent Secretary, External Affairs
Chief Medical Officer
Police Commissioner
Chief Fire Officer
The Principal Information Officer
The Permanent Secretary, Ministry of Tourism
Amateur Radio and Citizen Band
Chairpersons of all the Disaster Committees
Red Cross Representative
SLASPA Representative
Stenographer/typist

After 12 hours Team 2 should be in the EOC.

Team # 2:
Cabinet Secretary
Permanent Secretary, Planning
Deputy National Disaster Coordinator
Deputy Permanent Secretary, External Affairs
Medical Officer Health
Deputy Police Commissioner
Deputy Chief Fire Officer

Representative GIS
Representative Ministry of Tourism
Amateur Radio and Citizen Band
Deputy Chairpersons of National Disaster Committees
Red Cross Representative
SLASPA Representative
Stenographer/Typist

Additionally, the following personnel will be in the EOC:

4 Policemen provided by the Police Force to provide security
1 or 2 (to be decided by Telecommunications Disaster Committee) Amateur Radio Operators provided by the Telecommunications Disaster Committee
3 Message Receivers (runners)
1 General Situation Reporter. (However, each EOC member should report every situation they are involved in. This may consider one reporter per EOC member.)
1 Damage Assessment Logger

The last three will normally be volunteers trained by NEMO in their activities during the EOC operations.

No one else should be in the EOC unless approved by the EOC Chairperson. No access to the public or to the Media should be allowed.

9.7 Sectoral EOCs

Ministries or sectors that have to be represented in the National EOC but that at the same time have to co-ordinate several organisations/areas within the ministry/sector need and have to establish a sectoral EOC that has direct and permanent communication with the National EOC.

This is the case for, at least, the Ministry of Health, the Ministry of Works and the Ministry of Tourism.

Those Ministries/ agencies that have to co-ordinate a sectoral EOC must ensure that they will be communicated with uninterruptedly.

9.8. Private Sector Emergency Operations Centre (PEOC).

A new concept has been introduced in the management of disasters in Saint Lucia: the Private Sector Emergency Operations Centre (PEOC). The inclusion of this concept and the promotion of a closer involvement of the private sector in the planning process were done by Mr. William Gowen, Business Disaster Advisor to NEMO within the World Bank/OECS project.

A simulation exercise was conducted to test this PEOC in March 4th, 2002.

The PEOC considers the following:

a.- Location: Cable and Wireless (the exercise was held there; it is necessary to confirm if this would be the location in a real event)

b.- Chaired by: To be defined

c.- Participants:

LUCELEC (1)

WASCO (1)

Saint Lucia Air and Seaports Authority (1)

Cable and Wireless (1)

Fuel Sector (1)

Food sector (2)

Building material sector (1)

Banking sector (1)

Tourism Heritage Sites (1)

Ministry of Tourism (1)

Ministry of Health (1)

Ministry of Works (1)

NEMO (1) (subject to availability of personnel)

9.9. International Emergency Operations Centre (IEOC).

In order to manage all international affairs concerning an emergency or a disaster, and also to act as the emergency organization, all the international agencies and donors have to meet, particularly in the case of donations and disaster relief. The International EOC will be activated, if needed, in the case of a disaster as follows:

a.- Location: Ministry of External Affairs

b.- Chaired by: Ministry of External Affairs (PS)

c.- Deputy Chair: To be announced.

d.- Participants:

Personnel from foreign countries and regional and international organizations already in the country or that arrive to the country after a disaster. UN agencies [UNDP, PAHO, UNICEF, etc.; Other International Organisations: ECHO, OCHA, WFP, MSF, OXFAM; Regional Organisations like the CDERA and the Eastern Caribbean Donor Group (ECDG) that have members such as: CDERA, CDB, IADB, PAHO, OFDA, CIDA, DFID, etc., and other organisations: REMPEITC, Southcom, World Bank, etc.

Emergency Procedure EP- 650 External Assistance, details the role of the Ministry of External Affairs in an emergency/disaster after an earthquake strike.

9.10 Crisis Management Centre (Ministry of Tourism)

Although in itself it is a Sectoral EOC, it has been considered in the National Plan since 1996.

The composition of the Crisis Management Committee (CMT) is the following:

Coordinator/Chairperson and NEMO liaison	-	Permanent Secretary, Ministry of Tourism.
Head Crisis Management Unit	-	Director of Product Development, Ministry of Tourism.
Damage and Needs Assessment Unit	-	Executive Vice-president. SLTHA
Air and Seaports Information Unit	-	Rep. SLASPA.
Evacuation Unit	-	Rep. St. Lucia Rep. Ground handlers Association & Rep. National Taxi Council.
Public Relations and Communications Unit	-	Deputy Director. SLTB

The Ministry of Tourism has considered, since 1996 in the 'Hospitality Industry Crisis Management Plan' the activation of the Crisis Management Unit, which would act as an EOC for the tourism sector as follows:

For the operations of the CMT during crises, a Hospitality Industry Crisis Management Centre (CMC) has been established at the Meeting Room, Directorate of Product Development, Ministry of Tourism, Sir Stanislaus James Building, 3rd floor, the Waterfront, Castries; telephone numbers: 468-4604 and 468 4628.

9.11.- District EOCs

Every district has to establish a District EOC that:

- 1.- Co-ordinates the response at the local level.
- 2.- Has the right personnel in it to coordinate the response.
- 3.- Has permanent communication with the NEOC.
- 4.- Has permanent communication with key institutions/organisations/facilities/individuals within the District.

Once the location of each district EOC is defined they should be listed in this section of the Earthquake Response Plan.

10.- Responsibilities of the Organisations

10.1.- Responsibilities of NEMO's Director.

In order to ensure that the planning process does not stop and that the Plan is 'kept alive' the Director of NEMO is responsible for the following activities.

- 1.- Ensure that all the Disaster Committees meet regularly.
- 2.- Attend the Disaster Committees' meetings, take note of the agreements taken and be informed of the accomplishment of any tasks derived from the meetings.
- 3.- Ensure that all the organisations responsible for an emergency/recovery function of this plan revise the plan and the procedures they are responsible for at least once a year.
- 4.- Keep a master copy of the plan and its procedures.
- 5.- Make all changes needed to the plan according to the input provided by the organisations responsible for the emergency procedures.
- 6.- Prepare the yearly version of the plan and ensure that it is presented to and approved by the Prime Minister.
- 7.- Keep records of every training course that trained personnel and organisations involved in the plan attended and keep the information attached to the plan for future reference.
- 8.- Keep records (memoirs) of every simulation exercise that tests resources involved in the plan and keep the information attached to the plan for future reference.
- 9.- Keep records and information of the response to every real event and keep the information and evaluations attached to the plan for future reference
- 10.- Ensure that the plan and/or its procedures are revised and updated after every simulation exercise and after every real event.

- 11.- Disseminate the plan.
- 12.- Execute the procedures he/she is responsible for in the case of the impact of a earthquake in Saint Lucia.

10.2.- Responsibilities of NEMO's Deputy Director.

The Deputy Director of NEMO is responsible for:

- 1.- Assisting the Director in all the activities mentioned in Point 10.1 (activities 1-12).
- 2.- In the absence of the Director, conducting all the activities mentioned in Point 10.1 (activities 1- 12).

The Deputy Director must be trained and capable of substituting for the Director at all times, not only regarding the planning activities, but also in the execution and co-ordination of the emergency response activities described in the emergency procedures in this Plan.

10.3.- Responsibilities of the Response Organisations.

Responsibilities for the governmental officials are stated in the Law and are the same activities they will have to execute during 'peace times'; *e.g.*, Ministry of Health has to take care of the health of the population before and after disasters, MOH has to take care of public health issues before and after disasters; Ministry of Works has to take care of communications, damage of infrastructure and clearing roads before and after disasters. Police is in charge of security before and after disasters. In general, governmental officers have to execute the same activities but under different circumstances (peace and disaster times).

So, for the governmental organisations, the activities written in this plan do not represent additional responsibilities, but the same. What is different is that they are done in emergency or disaster times, which means that the demands are more and results needed sooner than in normal times; therefore, there is a need for planning (and training) for emergencies and disasters. Emergency and disaster management are parts of the overall management process.

In the case of volunteers (organisations and persons), they volunteer to be responsible for specific disaster management activities (members of a District Committee, chairpersons of some Disaster Committees, organisations' members of Disaster Committees, etc.). The will to help their fellow citizens causes them to be part of the disaster management organisations at the national and/or local level that will protect the population and their property during and after the threat or impact of a hazard. Therefore, they become part of the disaster management process and particularly of the emergency planning process and part of the response during emergencies and disasters.

They are not paid for this; they do these activities along with their own personal and private activities and they do not demand anything in return. Their work in disaster management is highly to be commended.

11.- Organisation/Structure of the Response

11.1.- Information about Earthquakes' Impact.

Earthquakes are, so far, unpredictable. The possibility of warning does not exist; therefore, there are no previous indicators to activate the plan before the earthquake impacts, only after it has impacted. So, the general response to an earthquake and the activation of the EOC are determined by the magnitude of an earthquake and its consequences.

So, after an earthquake, NEMO shall communicate with the Seismic Research Unit and determine, at least:

- Magnitude of the earthquake
- Epicentre
- Likelihood of aftershocks

In the case of earthquakes with Magnitude greater than 5.0 that occur in or near Saint Lucia and that are likely to have had effects on the island, the Seismic Research Unit should contact NEMO immediately to provide information about the earthquake without waiting for NEMO's request.

It is important to highlight, then, the introduction of the SRU in the Saint Lucia National Earthquake Response Plan as a proof of joint co-ordination between SRU and NEMO and as an example of how academic and disaster management organisations can work together in emergency planning and response. (See Procedure EP-001 Notification).

Information about the earthquake's impact will be requested, and received, by NEMO from governmental, private and social organisations and from the media.

11.2.- Post Impact Meeting and Activation of the EOC

After an earthquake and after receiving initial information about the earthquake and the effects on the island, the Director of NEMO can call a 'Post-Impact meeting', if necessary, to analyse information and make the decision to activate the EOC. The 'Post-Impact Meeting' would be held at NEMO Headquarters.

NEMO shall request and receive preliminary reports of damage on the island. If necessary, the Initial Aerial Damage Assessment could take place at this stage if so decided. It is then, after the

initial reports of damage (location, population and areas affected, infrastructure damaged), that, after consultation with the Cabinet Secretary and with other members of the NEMO, the Director of NEMO will decide on the activation of the EOC or if the situation is to be dealt with without activating the EOC.

NEMO shall also contact the SLU-GIS immediately for the dissemination of the information in an official communiqué through the Media, in order to avoid rumours and inform the people about the measures taken by the Government and the measures they have to take to protect their families and property.

After the EOC is deactivated, NEMO will decide on the establishment of a 'Task Force', chaired by the Ministry of Planning, in charge of the continuation of specific activities after the EOC deactivation, and on the creation of a Reconstruction Committee in charge of the reconstruction of all infrastructure damaged by the earthquake. Members and activities of the 'Task Force' and of the Reconstruction Committee will be determined by the NEMO and its members. For the Reconstruction activities see the emergency procedure EP-900 of this plan.

So the steps to activate and deactivate the EOC as well as subsequent steps are the following:

1. Earthquake Impact
2. Information from SRU
3. Information about damage
4. Notification to EOC members
5. More information about damage
6. Decision of 'Post-Strike Meeting' by NEMO and CABSEC
7. More Information About Damage
8. Decision on Initial Aerial Damage Assessment.
9. More information about damage
10. Decision on Activation of the EOC.
11. Permanent information about damage till EOC activation.
12. Response till EOC deactivation.
13. Establish a 'Task Force' if necessary
14. Establish a Reconstruction Committee if necessary.

11.3.- Structure of the Response.

The structure of the response is that one as co-ordinated from the EOC, going from the National level to the sectoral levels and to the local level (District level). Contact is maintained with regional and international organisations.

In figure 11.1 below, the relation between the different organisations in the case of a response during an emergency/disaster is shown:

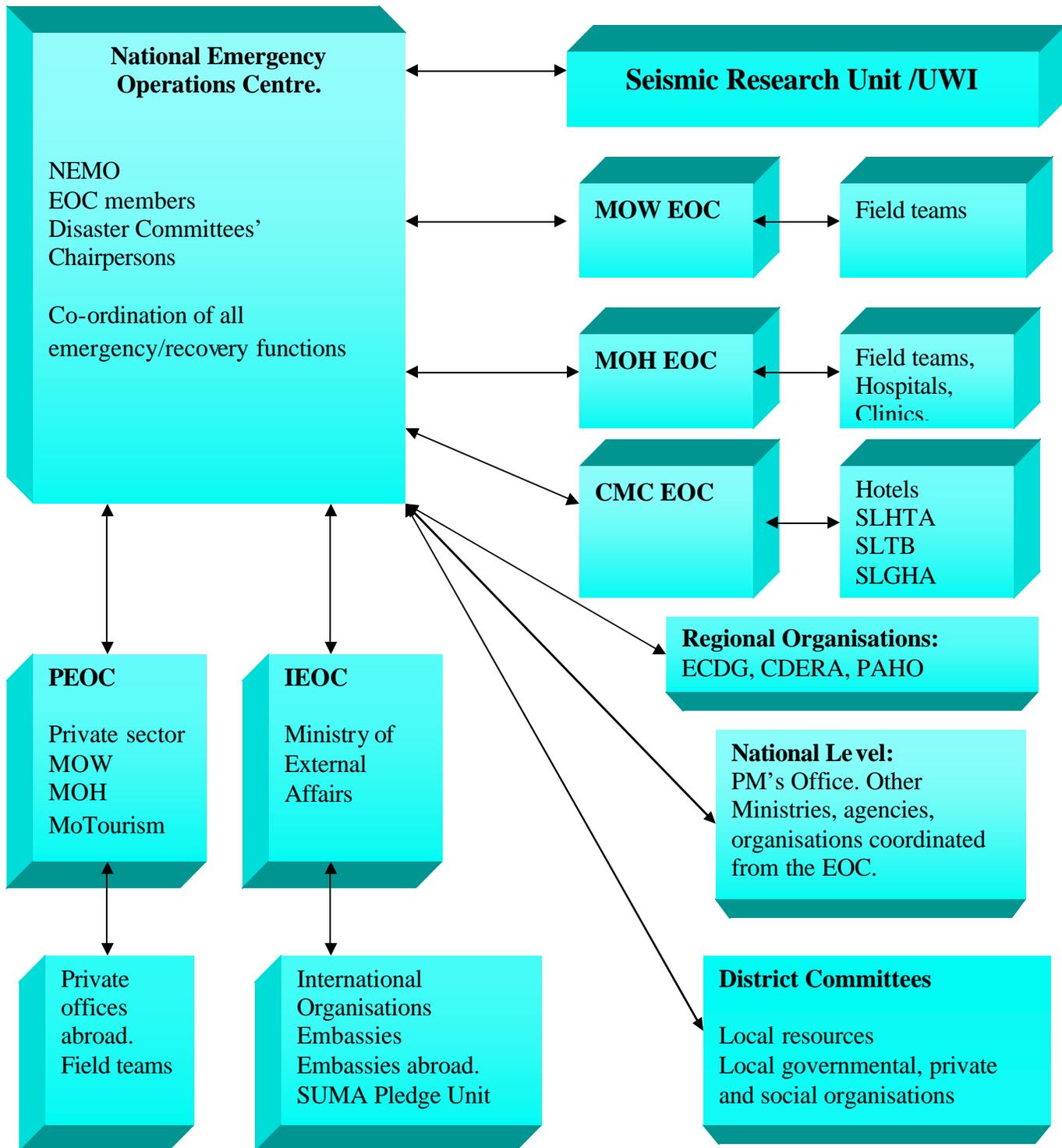


Figure 11.1 Structure of the Response and Co-ordination from the EOC.

12.- Relation with other Plans

The Saint Lucia National Earthquake Response Plan is a part of the Saint Lucia National Emergency Management Plan (Section 03-02).

The Saint Lucia National Earthquake Response Plan is related to other plans as follows:

12.1. National Plans

The Plan is related to other national plans insofar as some of its procedures are the same or similar and applicable to other national plans such as the Saint Lucia National Hurricane Plan and the Saint Lucia National Volcanic Eruption Plan.

The similarity of procedures, its homogeneity and its insertion in different national plans ensure that the adequate response is given even in case two hazards are present at the same time.

12.2. Regional and International Plans

The National Earthquake Response Plan intends to organise and optimise the response of the organisations in the country in the case of a threat and impact of an earthquake.

However, in the case, and only in the case, that because of the amount of damage caused by the earthquake the country's response capacity is totally overwhelmed, then there is need to call for regional and international assistance.

Therefore, Regional and International plans should be made with the knowledge of NEMO. Those plans should consider the emergency response planned in the Earthquake Response Plan and its Procedures in order to respond accordingly and with respect to Saint Lucia's sovereignty.

Some of the Regional and International plans and mechanisms that consider sending personnel and resources to the Caribbean countries after an emergency and/or a disaster are the following:

- a.- The Regional Response Mechanism activated by CDERA . Reconnaissance mission. Damage Assessment and Needs Analysis teams, CDRU. Appeal to donors.
- b.- Operation Orders of the Eastern Caribbean Donor Group.

c.- PAHO Guidelines for Assisting Caribbean Governments in the event of a Disaster. (CPC office Barbados.)

d.- Other response and relief mechanisms and plans considered by other agencies and organisations such as OFDA, Southcom or any other that intends to provide assistance to Saint Lucia in the case of a disaster (OCHA, Red Cross, ADRA, etc.)

It has to be provided, however, that:

1.- The National Earthquake Response Plan is distributed to those regional and international organisations that are to provide assistance in the case of a disaster. They all have to be acquainted with the Plan and its procedures.

2.- The plans, procedures and response mechanisms from the regional and international organisations have to be made with the knowledge of Saint Lucia. That is, the Government of Saint Lucia and NEMO has to know the emergency response/relief plans of the regional and international organisations beforehand. The regional and international organisations have to distribute their plans amongst the Saint Lucian authorities concerned (NEMO, External Affairs, MOH, etc.)

3.- The parties have to agree on the co-ordination mechanisms, plans and response/relief activities that are to be executed in the case of a disaster in and out the country. All the plans and mechanisms for foreign assistance have to be compatible with Saint Lucia's policies on these matters.

4.- The mechanisms for request and for providing international assistance have to be very clear and at all times have to be followed by foreign organisations according to agreed emergency procedures and always being respectful to the country's sovereignty and to the country's institutions.

12.3. Local Plans/Procedures

All Districts should have their District Disaster Plan according to the Model District Plan provided by NEMO. Besides the District Plan, the National Emergency Plans (Hurricane Plan, Earthquake Response Plan, Volcanic Eruption Plan and the Oil Spill Plan), consider a specific Emergency Procedure for the District Disaster Committees. These Emergency Procedures establish the specific response that has to be given at the local level by the District Disaster Committee per type of hazard and the support the local authorities have to provide to the national organisations; in the same way, they have to establish when and what kind of assistance is needed from the national level.

12.4. Plans from other Countries.

Plans from other countries are of importance insofar as they might consider assistance from, or to Saint Lucia in the case of a disaster caused by an earthquake. Plans have to be known by all the parties involved and have to be compatible.

PART II DISASTER SCENARIOS

13.- Hazard Description¹

13.1. Types of Earthquakes.

Most earthquakes in the Eastern Caribbean result from one of two causes:

- 1.- Tectonic Earthquakes are ruptures in the stiff, outermost part of the Earth called the lithosphere. The lithosphere extends from the surface down to a depth of 50-100 kilometres below the continents but much less than this below the oceans. Rocks of the lithosphere are stiff and brittle so that if they are strained they eventually break. The large-scale forces in the Earth's mantle which drive plate tectonics distort the rocks of the mantle until they eventually break.
- 2.- Volcanic earthquakes result from a number of volcanic processes and are generally similar to very small tectonic earthquakes. This document will deal with only tectonic earthquakes.

Tectonic earthquakes are, then, ruptures in the Earth's lithosphere and many of these ruptures occur along the boundaries between tectonic plates. The cumulative effect of small displacements, each no more than a few meters at most, over hundreds of millions of years is that the continents have moved relative to each other by thousands of kilometres. From a human perspective, these permanent displacements are much less important than the immediate secondary effects of earthquakes. The most important secondary effect is that the ground shakes and continues to shake for a much greater length of time than it takes for the rocks to rupture. In turn, the shaking may damage buildings or even cause them to collapse, rupture pipelines and other underground structures, cause landslides and turn waterlogged ground into quicksand.

The Eastern Caribbean is an example of an island arc system formed at a convergent plate boundary (more specifically, at a subduction zone, where two tectonic plates meet and the denser plate is forced beneath the lighter plate). This is the main cause of volcanic and seismic activity in the Eastern Caribbean. In fact, more than 75% of the world's earthquakes occur at convergent plate boundaries. The countries of the Eastern Caribbean are, therefore, highly susceptible to earthquakes. Figure 13.1 below shows the locations of the major earthquakes which have occurred in the Eastern Caribbean in the 20th century.

¹ Text, tables and figures have been taken from 'Volcanoes, Earthquakes and Tsunamis in the Eastern Caribbean'. Seismic Research Unit, UWI. May 2001 and from the SRU website: <http://www.uwiseismic.com>

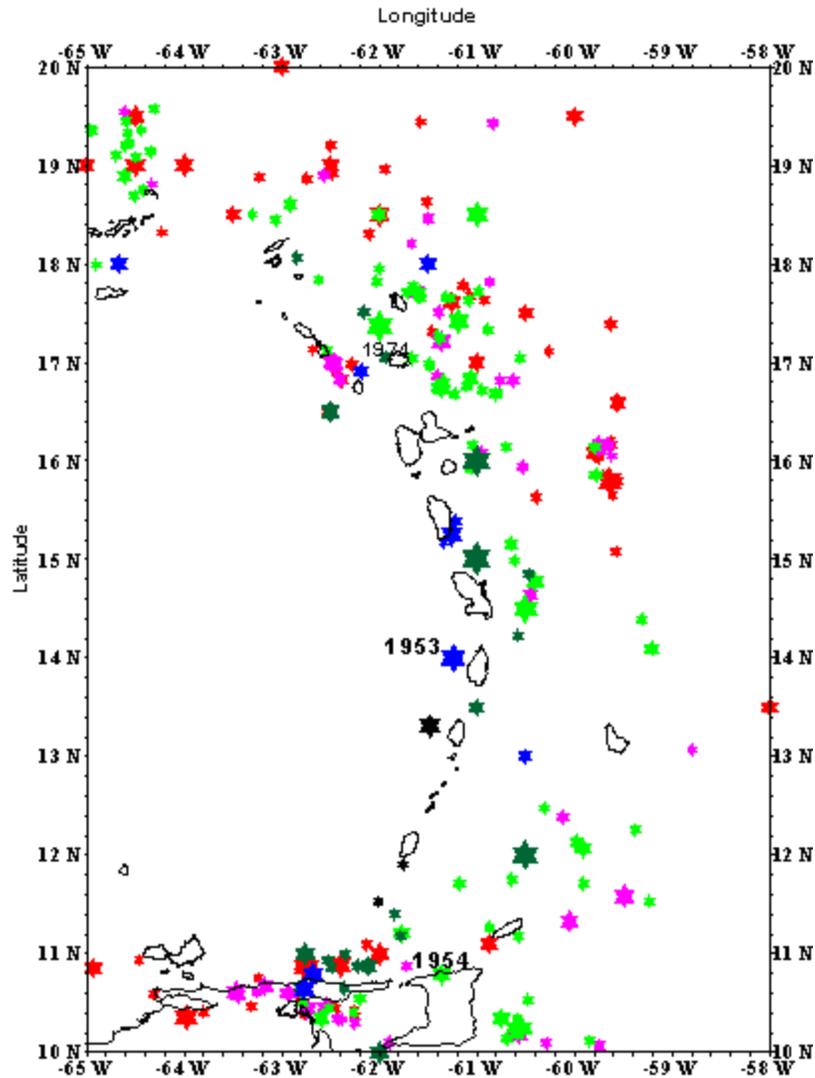


Figure 13.1. Major earthquakes in the Eastern Caribbean in the 20th century.²

Note the big star beside Saint Lucia corresponding to the 1953 earthquake $M=7\frac{3}{4}$. It is evident that no island in the region is completely free from the threat of earthquakes although there are considerable variations on the level of activity. In the South-eastern Caribbean, for example, the greatest concentration of activity is to the northwest of Trinidad.

² Taken from the Seismic Research Unit Website: <http://www.uwiseismic.com>

13.2. Magnitude.

There are many ways of measuring the size of earthquakes (See SRU website). The one which everyone seems to be familiar with is called the Richter scale. The Richter scale was devised to measure the size of earthquakes in Southern California and was never widely used anywhere else. The great disadvantage of the Richter scale was that it did not accurately reflect the size of very big earthquakes. It has now been abandoned even in California but most people think it is still in use.

In the following table we can find a description of earthquakes according to their magnitude.

Magnitude	Description
2.5- 3	Small earthquakes that are felt close to the epicenter
>5	Earthquakes that are felt strongly and may cause damage
>8	Very destructive earthquakes generally referred to as great earthquakes

Table 13.1. Description of earthquakes according to magnitude.

13.3.- Intensity.

For the purpose of hazard assessment, magnitude alone does not truly describe the effects of earthquakes. Once we begin to talk about the capacity to cause damage, death or destruction, the magnitude alone is not sufficient. These potentially harmful effects of earthquakes depend on:

- The violence with which the ground shakes
- The length of time for which the ground shakes.
- The frequency of oscillation of the ground.
- The type of rocks underlying the site

Generally, solid rock shakes less violently than soft soil. One common way of measuring the effects of earthquakes is through intensity scales. Intensity scales attempt to describe the severity of an earthquake by describing the effects on people, structures and geological formations. Each degree of intensity is described by a Roman numeral, I, II, III, etc., and the effects of the earthquake roughly double in severity for each one division increase in intensity. The earliest scale to be used in Europe and America was the Rossi-Forel or RF scale which went from one (I) to ten (X). The RF scale has not been widely used since the 1930's but some people still believe that earthquakes' effects are measured on a scale from one to ten.

In the Western hemisphere, including the Eastern Caribbean, the most widely used scale is the Modified Mercalli or MM scale. In Europe and South America, the scale used is the Medvedev, Sponheuer and Karnik (MSK) scale. This is more detailed than the MM scale but in abbreviated form, both scales are identical and have twelve divisions. See below the MM scale:

Intensity	Description	Effects
I	Instrumental	Detected only by seismographs.
II	Feeble	Noticed only by sensitive people or people on upper stories.
II	Slight	Resembling vibrations caused by heavy traffic. May not be recognised as an earthquake.
IV	Moderate	Felt by most people walking. Rocking of free-standing objects.
V	Rather Strong	Felt by all, sleepers awakened, bells ring.
VI	Strong	Trees sway, some damage from overturning and falling objects. Cracks in plaster and weak masonry.
VII	Very Strong	General alarm, cracking of walls, etc. Some weak structures damaged.
VIII	Destructive	Water tanks fall, some damage to strong buildings. Weak buildings collapse.
IX	Ruinous	Damage even to earthquake-resistant structures. Ground begins to crack.
X	Disastrous	Ground badly cracked, many buildings destroyed, some landslides.
XI	Very Disastrous	Few buildings remain standing. Bridges and railways destroyed. Water, gas, electricity, telephones etc., out of order.
XII	Catastrophic	Total destruction. Objects thrown into air, much heaving, shaking and distortion of the ground.

Table 13.2. Modified Mercalli Scale.

13.4.- Locating Earthquakes.

All earthquakes in the Eastern Caribbean of magnitude greater than 1.5 are recorded by one or more stations of a network of seismographs stations. Three other agencies in addition to the Seismic research Unit operate seismographs in this region. These are the Institut de Physique du

Globe de Paris (IPGP) in Martinique and Guadeloupe, the Fundación Venezolana de Investigaciones Sismológicas (FUNVISIS) and the Universidad de Oriente (UDO) in Venezuela. In the following table we can see the number of stations and their location.

Location	Number of Stations	Institution
Leeward Islands	10	UWI
Guadeloupe	15	IPGP
Dominica	10	UWI
Martinique	10	IPGP
Saint Lucia	7	UWI
Saint Vincent	4	UWI
Grenada	4	UWI
Trinidad	9	UWI
Tobago	Under reconstruction	UWI
Venezuela	7 near the Caribbean coast	UDO/FUNVISIS

Table 13.3. Location and number of seismograph stations in the Eastern Caribbean.

Since the SRU/UWI would register information after earthquakes, the SRU would be the institution from which this information would be transmitted to the NEMO in the case of earthquakes that would have effects in Saint Lucia.

More detailed information about earthquakes in the Eastern Caribbean can be found in the SRU website at: <http://www.uwiseismic.com>

14.-Vulnerability

14.1. Vulnerability.

Literally, it is the capability or the possibility of being hurt or damaged. In our case, the capability or the possibility of being damaged by the impact of a specific hazard such as an earthquake.

Vulnerability must be understood as related to a specific hazard, *i.e.*, a vulnerable element; for instance a wooden house, has a specific vulnerability against fires (flammability), another vulnerability against earthquakes (due to movement, stress and strain), another vulnerability to wind pressure (due to the materials and surface exposed) and another one against explosions (pressure resistance to a blast impact).

This means that, when talking about vulnerability, we must also address a specific hazard as well. So, in our case we shall understand vulnerability as the possibility or susceptibility of being damaged by an earthquake.

14.2. Vulnerable Systems.

The term 'system' refers to an assemblage of certain elements (or subsystems) operating within a prescribed boundary and united by some form of regular interaction or interdependence to form a coherent and integrated whole that has also certain specific purposes.

According to the definition, anything can be considered as a vulnerable system: a region, a city, a District, a Parish, a group of buildings, a bank, an industry, a house, a car, a computer and even the human body; and they are all susceptible of being damaged by internal or external hazards.

In our case, the country, Saint Lucia, is to be considered as a vulnerable system.

14.3. Vulnerable System Elements.

We shall identify five elements of the Vulnerable System (considering a country [Saint Lucia] as the Vulnerable system):

- 1.-Population
- 2.-Facilities/infrastructure
- 3.-Services
- 4.-Information
- 5.-Environment
- 6.-Economy

1.-Population :

-Human lives: men, women, children, elders, citizens, tourists, the handicapped, prisoners: all human beings disregarding their political, legal and social status and disregarding their physical and psychical conditions.

2.-Facilities/Infrastructure/Services :

- Housing. Houses, dwellings, apartments, hotels.
- Education. Schools, college, universities. Other academic and research institutions.
- Water supply. Water storage and distribution. Dams.
- Health service. Hospitals, Clinics.
- Industry and commerce. Industries, commerce, shops.
- Food supply. Food supplies. Commerce, markets. Food production, storage and distribution.
- Communications. Roads, seaports, airports, marina.
- Telecommunications. Telephones, radios. TV and Radio Stations.

- Transport. Public and private. Land, maritime and air.
- Energy (power supply, fuels, etc). Fuel storage and distribution, petrol stations.
- Sewage. Sewage systems.
- Agriculture. Crops.
- Religious. Churches. Mosques, Temples. Synagogues.
- Livestock. Pets.
- Security. Military forces, Police, Fire Service.
- Waste Management and disposal. Accumulation of garbage. Interruption of garbage collection.
- Cultural, Historical, Tourist. Tourist and historical sites and monuments. Beaches. Resorts.
- Financial, banking. Banks. Insurance companies.
- Entertaining, recreational. Cinema theatres, stadiums, etc.
- Administrative. Every governmental and private office building.

3.-Information :

- Archives
- Libraries
- Documents, files, records etc.

4.-Environment :

- Air
- Water
- Soil
- Fauna
- Flora

5.-Economy :

- Direct cost. (cost of damage)
- Indirect cost. (cost of productivity and lack of income, insurance, fines and suits, loss of revenue, loss of taxes, etc.)
- Recovery cost. (cost of reconstruction)

An important point to be highlighted here is that sometimes emergency management agencies have the assumption that emergency facilities and responders will not be affected by the impact of hazards. This is not a 100% valid assumption; most of the time emergency personnel, facilities and equipment are affected by the impact of hazards: hospitals, transportation, airports, etc are affected and reduce the response capacity of an organisation and of the country itself.

14.4.- Vulnerability and Earthquakes' Effects.

Earthquakes' effects depend on the magnitude of the earthquake and on the vulnerability of structures and the rest of the vulnerable systems' elements.

Some of the earthquake effects that can be harmful are: ³

- Collapsing of buildings, walls, bridges, falling furniture or objects, shattering glass windows and mirrors. Debris from collapsing structures is one of the principal dangers during an earthquake since the impact of large, heavy objects can be fatal to human being. Earthquakes sometimes cause glass windows and mirrors to shatter and this is also quite dangerous. Earthquake aftershocks (small earthquakes which may follow a large earthquake) can result in the complete collapse of buildings that were damaged during an earthquake.
- Falling electricity lines. Earthquakes can cause electricity poles to fall and live wires to become exposed to start fires.
- Ruptured gas lines and spillage of flammable substances. Earthquake-generated fires can cause widespread destruction after a major earthquake. Escaping gas from broken gas lines and the toppling of containers with flammable substances (e.g., kerosene, household chemicals, etc.), presents significant threat of explosions and fires, which can cause deaths and destruction of property. Additionally, water pipes are sometimes ruptured during an earthquake and this compounds problem of controlling such fires.
- Rock slides and/or landslides on mountains and hillsides. During an earthquake, large rocks and portions of earth high up in the hills can become dislodged and rapidly roll or slide down into the valleys.
- Floods caused by collapse of dam walls. Earthquakes can cause dam walls to crack and eventually collapse, sending raging waters into surrounding areas and causing severe flooding.
- Tsunamis. A tsunami is a sea wave or a series of waves that can be generated by an earthquake. Large tsunamis can completely devastate low-lying coastal areas.
- Liquefaction. When sediments with a high water content are subjected to prolonged shaking, the pressure of the water held in pores in the sediment gradually increases until, eventually, the sediments lose all cohesive strength and begin to behave as if they were liquids. Buildings and other structures sink into the ground or overturn and buried tanks and other cavities rise to the surface. This is known as liquefaction. Liquefaction occurred during the earthquake of 1692 in Jamaica and was responsible for the destruction of the town of Port Royal. Over the past few decades, many parts of the Eastern Caribbean have become increasingly vulnerable to liquefaction because of the increased use of reclaimed land for urban development.

³ From Volcanoes, Earthquakes and Tsunamis in the Eastern Caribbean. SRU/UWI. May 2001.

The enactment and enforcement of building codes is fundamental in the reduction of vulnerability. Also the design of an earthquake disaster scenario in order to determine vulnerable areas and structures so that mitigation measures can be implemented.

15.- Risk Assessment

15.1.- Main Earthquakes that have Impacted Saint Lucia.

To assess risk is important so several elements of planning such as training, simulation exercises and emergency plans and procedures amongst others can focus on real priorities.

Emergency response activities must be adequate to the more likely event that can occur. Critical events or worst-case scenarios have to be considered too, but also their frequency and probability of occurrence. In other words, we should plan for the more frequent events. We should plan for events that have a higher probability to occur.

Some of the most important earthquakes that have affected the Eastern Caribbean and Saint Lucia are the following:⁴

Date	Location	Magnitude	Effects
April 5, 1690	E. of Nevis	7.5-8.0	Unknown number of people killed. Collapse of buildings in Antigua. Earth opened 9' In some places in St. Kitts. Landslides in Nevis. Sea retreated and returned in 2 minutes. Guadeloupe suffered severely.
1727	Near Martinique?	7.0	
October 21, 1766	N. of Paria Peninsula	7.9	Destroyed the Capital of Trinidad, San Jose, moved to Port of Spain. Altered the courses of rivers and streams. Intensity from IV to VIII.
January 11, 1839	E. of Martinique	7.5	Intensity IX in N. Martinique. VIII in Saint Lucia. VII in Barbados. 387 killed. 250 injured in Fort royal (Fort de France) and all public buildings and masonry houses destroyed or severely damaged. Walls of buildings cracked in Barbados.

⁴ From Lachtman, Joan L. *Damaging Eastern Caribbean Earthquakes*. Workshop on Volcanic and Seismic Hazards in the Eastern Caribbean. May 28th-June 1st, 2001.

Date	Location	Magnitude	Effects
February 8, 1843	N.E. of Guadeloupe	8.0-8.5	The largest earthquake in the Eastern Caribbean. Felt from Caracas to Washington, Vermont and Charlestown in the USA. Main shock followed by aftershocks. 1000-6000 deaths. Point-a-Pitre destroyed. Damage in Antigua.. Six dead and structural damage in Montserrat. Damage in Nevis.
1844	S.E. of Saint Vincent	7.0	
1851	S. of Guadeloupe	7.0	
1888	S.W. of Grenada	7.0	
1897	N.W. of Guadeloupe	7.0	
1906	N.E of Saint Lucia	7.0	Severe damage in Saint Lucia and Martinique. No deaths.
1928	N. of Tobago	6.5	
1946	E. of Martinique	7.0	
March 19, 1953	N.W. of Saint Lucia	7.5	Partial collapse of buildings previously damaged by fire in Castries. Hospital, Police barracks and stores damaged in Kingstown. Buildings damaged in Martinique. Many buildings damaged in Barbados, the General Hospital and others. Intensity VII in Saint Lucia, VII in Saint Vincent, VI in Barbados, VI in Grenada, V in Dominica, IV in Trinidad.
1969	E. of Maria Galante	7.2	
October 8, 1974	N.W. of Antigua	7.5	Damage to harbour and other structures in Antigua

Table 15.1 Main earthquakes that have affected the Eastern Caribbean and Saint Lucia.

The SRU website adds for the 1953 earthquake NW of Saint Lucia: “Little serious damage because there were few large buildings at the time. Since then there has been largely-scale development of multi-storey hotels in all islands, particularly in Saint Lucia within 50 km. From the epicentre.”

15.2.- Earthquake Risk.

Quantitative estimates of the level of seismic hazard in the Eastern Caribbean are described in the UWI website. Here we would like to highlight the fact that:

- Destructive earthquakes have occurred in the past near Saint Lucia and they are likely to occur in the future.
- Vulnerability has increased in Saint Lucia due to the fact that more buildings (and numerous high-rise buildings) have been constructed since 1953.
- **The period between the 1906 and the 1953 earthquakes is 47 years. Although the data may not be enough to categorically affirm that a > 7.0 magnitude earthquake occurs every 47 years (due in 2000), another one can occur any time.**
- If we consider other earthquakes close to Saint Lucia we would have the following return periods:
 - 54.5 years considering the 1844 earthquake. Period due in 2007.
 - 38 years considering the 1839 and the 1844 earthquakes too. Period due in 1991.
- There is the need to assess vulnerability and to design a disaster scenario for Saint Lucia for a > 7.0 earthquake.
- Earthquake disaster preparedness has to be a priority within the disaster management activities in Saint Lucia.
- The enactment and enforcement of the Saint Lucia building code has to be an immediate priority in Saint Lucia.

16.- Disaster Scenarios

16.1.- Disaster Scenarios and Earthquakes.

To know that another > 7.0 earthquake is likely to occur in or near Saint Lucia is not enough. Due to the development of Saint Lucia since 1953 a disaster scenario has to be designed in case of a >7.0 earthquake considering the current vulnerability to earthquakes. This can be done by a private consultant or by an academic institution. This has to be done as soon as possible to identify the most vulnerable areas and structures and to start a plan of action for earthquake vulnerability reduction through mitigation activities.

16.2.- Two examples of Earthquakes Disaster Scenarios

Two examples of earthquake disaster scenarios are the following:

1.- Earthquake planning scenarios designed by the California Department of Conservation, Division of Mines and Geology in the USA.

After the eruption of the Mount St. Helens in 1980, the president of the USA requested the National Security Council to consider the implications of a large damaging earthquake in California. In 1981, FEMA concluded in an analysis that there were not enough resources to cope with a high-magnitude earthquake in that area. FEMA conclusions were that an 8.3

magnitude earthquake would cause: losses up to \$ 20 billion; depending on the time of the day, between 3,000 and 14, 000 dead, and between 12, 000 and 55, 000 to require hospitalisation.

After this analysis, the Governor of California established the Emergency Task Force for Earthquake Preparedness. Working with the Task Force, the Department of Conservation, Division of Mines and Geology designed earthquake scenarios for two destructive earthquakes: one based on the repeat of the 1857 Tejon earthquake ($M \sim 8$) on the San Andreas fault in Southern California [Special Publication 60] and a second one based on the repeat of the 1906 San Francisco Earthquake ($M \sim 8$) [Special publication 61]. Other earthquake scenarios followed, *e.g.*: the Earthquake Planning Scenario for a Magnitude 7.5 earthquake on the Hayward Fault, San Francisco Bay Area (Special publication 78) and the Earthquake Planning Scenario for a Major Earthquake on the Newport-Inglewood Fault Zone (special publication 99) amongst others.

As an example, we will mention that the 'Earthquake Planning Scenario for a Magnitude 8.3 Earthquake on the San Andreas Fault in Southern California' by James F. Davis, John H. Bennet, Glenn A. Borchardt, James E. Kahle, Salem J. Rice and Michael A. Silva, published in 1982, describes the seismic intensity distribution in Southern California due to an 8.3 magnitude earthquake and the possible damage to highway, airport, railway, marine, communication, water, waste disposal, electrical power, natural gas and petroleum lifelines that service the metropolitan areas in the Los Angeles Basin and environs when they are subjected to a great (8.3) earthquake. It is interesting to mention that this document includes several maps (for each of the lifelines), it also includes the extent (percentage) of possible damage and, when applicable, the time for which a lifeline will be damaged/interrupted/blocked.

2.- The Kathmandu Valley Earthquake Risk Management Project.

In 1934 the Kathmandu Valley an earthquake produced strong shaking in the Kathmandu Valley destroying 20 percent and damaging 40 percent of the building stock in the area. The earthquake destroyed 25 % of all homes in Kathmandu and several historic sites. Three earthquakes of the same magnitude occurred in the Kathmandu Valley in the 19th century: 1810, 1833 and 1866. The seismic record of the region which extends to 1255, suggested that earthquakes of the 1934 earthquake size occurred approximately every 75 years indicating that a devastating earthquake is inevitable in the future.

A disaster scenario was designed by GeoHazards International jointly with the National Society for Earthquake Technology of Nepal (NSET). A loss estimation was conducted for a repeat of the 1934 earthquake. Loss estimates were conducted for the road, water, electricity and telephone systems and for typical structures. A scenario document that explains the loss estimation was published in English and Nepali. A summary of the loss estimates for a possible repeat of the 1934 earthquake revealed that: 60 % of all the buildings in the Kathmandu Valley are likely to

experience heavy damage, many beyond repair; almost half the bridges could be impassable due to damage; the airport may be inaccessible; roads would be blocked by debris; approximately 90% of water pipes could be seriously damaged; almost all the telephone lines are likely to be damaged; 40 % of electric lines and all electrical substations are likely to be damaged; the estimate of deaths is between 20,000 and 40,000 and the estimate of injured is between 25,000 and 95,000.

The importance of the scenario design relied also in the development of the Kathmandu Valley Earthquake Risk Management Plan that involves 80 government and non-government organisations. The Plan was released and endorsed officially by the Nepalese Prime Minister. The plan includes: the creation of a National Disaster Management Council, a comprehensive plan for earthquake awareness, implementation and enforcement of building codes; training of building inspectors and reduction of vulnerability and mitigation measures in key buildings and infrastructure.

More information can be found at: <http://www.geohaz.org/home.htm> and at <http://www.nset.org.np/home.htm>

A similar disaster scenario should be designed for Saint Lucia in case of Earthquake (> 7.0 M) as soon as possible.

In general, and as a very important component of the disaster management process, disaster scenarios should be designed for other hazards as well.

PART III EMERGENCY RESPONSE AND RELIEF

17.- Emergency Response and Recovery Activities.

17.1. Relation Between Hazard’s Effects and Response/Recovery Activities.

Emergency/Response and relief activities are not the product of coincidence; they respond directly to the specific damage that can be caused by a specific phenomenon of specific characteristics: if a hazard is predictable, then we have warning, notification and evacuation; if we have to evacuate, we need shelters and shelter management; if the hazard is likely to produce deaths and injured people, then we to have and plan for medical attention and disposal of the dead, etc.

Emergency response and relief activities are known before the impact of a hazard. This is what gives emergency planning an opportunity to be accurate in terms of what defining the activities that have to be executed before, during and after a specific hazard’s impact. We have, also, the opportunity to assign responsibilities, to train personnel and to test our resources.

17.2. Response/Recovery Activities.

General emergency response and recovery activities for different kinds of hazards are presented in the following table, they are:

Table 17.1 General List of Functions and Sub-functions for Emergency Planning.

Hazard/ Function	Earthquakes /Floods	Earthquakes	Land-slides (rapid onset)	Volcanic eruption	Fire	Oil spills	Haz mat accidents	Accidents	Hazard i +1 ... Hazard n
1.Warning/ Monitoring	X			X					
2.Notification	X	X	X	X	X	X	X	X	
3.EOC	X	X		X		X			
4.ICS			X		X	X	X	X	
5.Communications	X	X	X	X	X	X	X	X	
Hazard/ Function	Earthquakes	Earthquakes	Land-slides	Volcanic	Fire	Oil spills	Haz mat	Accidents	Hazard i +1

	/Floods		(rapid onset)	eruption			accidents		... Hazard n
6.- Transportation	X	X	X	X					
7.Control of the hazard					X	X	X	X	
8.Evacuation	X	X	X	X	X	X	X	X	
9.Shelter management	X	X	X	X		X		X	
10.Search and Rescue	X	X	X	X	X			X	
11.Security	X	X	X	X	X	X	X	X	
12.Medical attention	X	X	X	X	X	X	X	X	
13.Environmental Health	X	X	X	X		X	X		
14.Damage assessment & needs analysis	X	X	X	X	X	X	X	X	
15.Foreign Assistance	X	X	X	X		X	X	X	
16.Supply management.	X	X	X	X					
17.Public Information	X	X	X	X	X	X	X	X	
18.Protection and Rehabilitation of Infrastructure	X	X	X	X	X	X	X	X	
19.Environmental restoration	X	X	X	X	X	X	X		
20.Reconstruction	X	X	X	X	X	X	X		

Table 17.1 Cont. General List of Functions and Sub-functions for Emergency Planning.

The functions below are general and can change and be modified depending on the specific hazard, vulnerable elements and emergency organisations considered in the emergency plan:

1. Warning & Monitoring
2. Notification
3. EOC
4. Incident command system

5. Communications
6. Transportation
7. Control of the hazard
8. Evacuation
9. Shelter management
10. Search and rescue
11. Security
12. Medical attention/counselling
13. Environmental health
14. Damage assessment and needs analysis
15. External assistance
16. Supply management
17. Public information
18. Protection and rehabilitation of Infrastructure
19. Environmental Protection and Rehabilitation
20. Reconstruction

Breaking them down we would have different sub-procedures or sub-activities that have to be considered in general procedures:

1. Warning & Monitoring (predicting the threat and impact of a hazards).
 - a. Earthquakes, floods and rainstorms
 - b. Volcanic eruptions
 - c. Landslides (slow onset.)
2. Notification (that a hazard has occurred)
 - a. Hurricanes
 - b. Earthquakes
 - c. Landslides (slow onset)
 - d. Accidents (boats, aircraft crashes, vehicles)
 - e. Hazmat accidents (oil spills, fires, others)
 - f. Any other hazard.
3. EOC
 - a. NEOC
 - b. Local EOCs
 - c. Sectoral EOCs
4. Incident Command System
 - a. Per type of event.
5. Communications
 - a. Localised event
 - b. Nation wide event
 - c. Region wide event

6. Transportation
 - a. Land
 - b. Water (sea, fluvial, other)
 - c. Air
7. Control of the hazard (not applicable for natural hazards)
 - a. For controllable chemical hazards (fires, spills, gas leaks, etc.)
 - b. For man-made hazards (bomb threats, terrorist attacks, bank robberies, etc).
8. Evacuation.
 - a. Evacuation in the case of predictable hazards (pre-impact)
 - b. Re-location in the case of unpredictable hazards (post-impact)
9. Shelter Management
 - a. Shelter Management for evacuees (predictable hazards)
 - b. Shelter Management and Emergency Housing for relocated people (non-predictable hazards or impact with long effects on housing)
10. Search and Rescue (governmental, private and volunteer resources)
 - a. After a hurricane or boat accidents (maritime)
 - b. After an earthquake (under rubble)
 - c. Other cases (fire, landslides [mountain], etc.)
11. Medical attention (including governmental, private, social and volunteer organisations)
 - a. Trauma caused by accidents or collapse of buildings
 - b. Trauma caused by volcanic eruption, fires or hazardous substances
 - c. Mental health/Counselling
12. Security (securing places or areas, control of looting, riots, terrorism, etc.)
 - a. Nation wide event
 - b. Localised event
13. Environmental health
 - a. Surveillance
 - b. Adequate quality and quantity of water supply
 - c. Food safety
 - d. Adequate waste disposal
 - e. Vector and rodent control
 - f. Adequate disposal of dead bodies (people and animals)
14. Damage assessment and needs analysis
 - a. Damage Assessment and Needs Analysis (District and National levels)
15. Public Information
 - a. Before the impact in cases of predictable hazards.
 - b. After the impact of hazards.
16. External Assistance
 - a. Request of External Assistance (other countries and international and regional organisations)
 - b. Receipt and storage of External Assistance

17. Supply management (by government, private and volunteer groups)
 - a. Adequate storage and distribution of supplies
 - b. Water supply
 - c. Food supply
 - d. Equipment
 - e. Others
18. Protection and Rehabilitation of Infrastructure
 - a. Electricity
 - b. Telecommunications (radios, telephone, radio, TV)
 - c. Water supply
 - d. Food supply
 - e. Medical attention
 - f. Communications
 - i. Terrestrial communications (road clean-up and rehabilitation)
 - ii. Aerial communications (airport runways clean-up and rehabilitation)
 - iii. Maritime communications (ports)
 - g. Garbage collection, transport and final disposal
 - h. Schools, college, universities, all teaching institutions.
 - i. All governmental organisations and buildings
 - j. Private sector (tourism, banking, industrial, commerce, etc.). Business continuity.
19. Environmental Protection and Rehabilitation
 - a. Water (rivers, lakes, sea, underground water) and soil restoration (soil, sub-soil)
 - b. Flora and fauna (protection and reintroduction of affected and/or endangered species and their natural habitats).
 - c. Cultural Heritage. Archaeological sites.
20. Reconstruction (Long-term reconstruction of society according to damage)
 - a. Infrastructure
 - b. Services
 - c. Housing
 - d. Other economic sectors (agriculture, industry, etc.)
 - e. Finance and budget administration (loans, grants, donations, etc.)
 - f. Reconstruction programme.

For the purposes of this plan (Earthquake Response Plan) we will consider those functions presented in column 2 from table 17.1. This is:

1. Notification
2. EOC
3. Communications
4. Transportation
5. Evacuation

6. Shelter management
7. Search and rescue (land)
8. Security
9. Medical attention
10. Environmental health
11. Damage assessment and needs analysis
12. External assistance
13. Supply management
14. Public information
15. Protection and rehabilitation of services
16. Environmental protection and rehabilitation
17. Reconstruction

For the purposes of establishing a procedure for the District Disaster Committees and define their role in the response at the local level and their co-ordination with the national level, we will add another procedure:

18. District Disaster Committee General Response (Earthquake)

These functions will be the foundation for defining and writing specific emergency procedures for this plan.

18.- Emergency Responsibilities Assigned to the Organisations Involved in the Plan

Each of the functions (emergency/relief activities) has to be assigned to one organisation that has to be responsible for it. However, although only one organisation has to be responsible for one function, several others could assist the main responsible organisation as secondary responsible organisations for the function.

Here we make a brief analysis of main responsibilities for each function and secondary responsible organisations.

Table 18.1. Responsibilities Matrix for Emergency/Recovery Functions in the Case of an earthquake

Hazard/ Function	Main Responsible Organisation	Key Support Organisations (secondary)	Sectoral Plans
1.Notification	NEMO	SRU, National Committees, District Committees. Government Ministries.	
2.EOC	NEMO	Disaster Committees, District Committees, Ministries, Private Sector	Sectoral EOCs, MOW, Plan, MOH Plan, CMU Plan, Private sector plan.
3.Communications	Telecommunications Committee	Private sector. Amateur radio operators.	MOW Plan. Private Sector Plan
4.- Transportation	Transportation Committee	MOW, volunteers. Private sector.	MOW plan. Crisis Management Plan
5.Evacuation	Royal Saint Lucia Police Force	District Committees, Transportation Committee	Crisis Management Plan.
6.Shelter management	Shelter Management Committee.	Welfare Committee, Red Cross, District Committees, Social Organisations. MOH. Supply management Committee.	
7.Search and Rescue	Fire Service. (land) Marine Police (marine)	Transportation Committee, MOW.	
8.Security	Police		
9.Medical attention	Ministry of Health	Private sector. Transportation committee. Fire service, police. Welfare Committee	MOH Plan.
10.Environmental Health	Ministry of Health	Shelter Management Committee.	MOH Plan.
11.Damage Assessment & Needs Analysis	Damage Assessment Committee	Ministry of Works	MOH Plan, MOW Plan, Private Sector Plan. Crisis Management Plan.
12.External Assistance	Ministry of External Affairs	NEMO or Office of the Prime Minister.	
13.Supply Management.	Supply Management Committee	Governmental Ministries. Private sector. Transportation Committee	Private Sector Plan
Hazard/ Function	Main Responsible Organisation	Key Support Organisations (secondary)	Sectoral Plans

Function	Organisation	Organisations (secondary)	
14.Public Information	Information Committee (GIS)	NEMO, The Media, All Committees.	Crisis Management Plan.
15.Protection and Rehabilitation of Infrastructure	Works/Rehabilitation Committee	MOW, Private sector	MOW, Private Sector Plan
16. Environmental Protection and Rehabilitation	Saint Lucia Solid Waste Management Authority	MOW. Transportation Committee.	
17.Reconstruction	Ministry of Planning	NEMO, MOW. All Ministries, Private Sector.	
18.- District Disaster Committee Response	District Disaster Committee	Organisations in the District. NEMO. EOC.	District Disaster Plan.

Table 18.1. Cont. Responsibilities Matrix for Emergency/Recovery Functions in the Case of an earthquake

19.- Initial Aerial Damage Assessment.

The magnitude of the response must be directly proportional to the damage and needs caused by the impact of any hazard; therefore, an initial assessment of the damage is needed. The emergency functions that have to be executed and the locations where they have to be implemented are also determined by the damage assessment.

In this plan, it is considered to have an initial aerial damage assessment as the first of the activities of the general Damage Assessment and Needs Analysis.

This initial assessment will give the EOC an idea of the magnitude of the damage and of the areas that have been affected and how. This will focus the subsequent damage assessment activities and the implementation of the relief and rehabilitation emergency functions.

The Transportation Committee can provide aerial transportation (helicopter) for this purpose. This initial aerial assessment would take place once NEMO Director has determined that it is necessary.

Two groups in two flights would participate in this initial aerial damage assessment. If it is determined by NEMO that only group 1 has to participate in the assessment, team 2 would not participate unless otherwise determined by NEMO.

Group 1:
Prime Minister
Damage Assessment and Needs Analysis Committee Chairperson

Works and Rehabilitation Disaster Committee Chairperson
Ministry of Agriculture representative/ SHLTA
SLU-GIS representative (cameraman)

Group 2:
Police Commissioner
Chief Medical Officer
SLU-GIS representative (cameraman)

The results of this initial aerial damage assessment will be shared and discussed with the rest of the EOC members to focus the initial response activities co-ordinated from there and to inform the public.

20.- Emergency Procedures

The Plan includes the following twenty emergency procedures:

- EP-001.- Notification
- EP-100- Emergency Operation Centre (National)
- EP-150.- Communications
- EP-200.- Transportation
- EP-250.- Evacuation
- EP-350.- Shelter Management
- EP-400.- Land Search and Rescue
- EP-450.- Security
- EP-500.- Medical Attention
- EP-550.- Environmental Health
- EP-600.- Damage Assessment and Needs Analysis
- EP-650.- External Assistance
- EP-700.- Supply Management
- EP-750.- Public Information
- EP-800.- Protection and Rehabilitation of Infrastructure.
- EP-850.- Environmental Protection and Rehabilitation
- EP-900.- Reconstruction
- EP-950.- District Disaster Committee General Procedure (Earthquake)

Other procedures could be added as the plan evolves through time and as it is tested and evaluated. The reason of having specific numbers for the procedures is that one can recognise a procedure also for its number: from 001 to 99, procedures regarding notification; 700 to 749, procedures regarding emergency supplies, etc. Thus we could add, for instance a notification procedure for the chairperson of the X Disaster Committee to all its members as EP 002; another notification procedure for the Y Disaster Committee to all its members as EP 003 and so forth. In

this manner, the plan can grow as the number of its procedures grows, and as the need for more emergency procedures is determined by annual revisions, simulation exercises and the results of response to real events.

These procedures are presented in Part V of this plan. They are part of the Earthquake Response Plan and they have to be executed by the organisations responsible for them as stated in the plan and in the procedures themselves.

PART IV THE PLANNING PROCESS

21.-Revision and Updating of the Earthquake Response Plan

21.1 The Planning Process.

Planning is a process not a product.

A written plan does not necessarily reflect the state of preparedness of an organisation or a country against specific hazards. Particularly if it is old, if it has not been updated and/or if it does not include real information about what is likely to happen and resources to respond against an emergency or a disastrous situation. Strictly speaking, it could be said that a plan needs to be updated the minute after it has been written.

Resources change in time: personnel changes, organisations change, equipment and vehicles change; consequently, plans must change too: if plans are not updated, they become useless, for activities and resources considered in them will not be real. Resources do not change every year or every two years. Sometimes they change more often or regularly.

Moreover, the possibilities of interaction and changes between the hazard characteristics, the vulnerable elements that can be affected by the hazards and the response capability of the disaster management organisations are almost infinite. This is why we should permanently try to identify problems and changes in our resources to improve our future response in the case of an event.

So emergency planning:

- must be a continuous activity. This will allow to identify and to solve problems before any hazard strikes.
- must involve those in charge of giving the emergency response. All personnel and organisations that have to participate in the response in the case of a threat and/or impact of a hazard must be involved in the planning process. They are those who will respond and they are those who know what resources they have to do it.
- must reflect reality. An emergency plan must be based on the real characteristics of:
 - a. Hazards
 - b. Vulnerable elements
 - c. Existing resources to respond

- d. Expected damage
- e. The real and adequate response and recovery activities that have to be done in the case of the hazard threat or impact according to the possible damage that can occur.

So, the planning process must be done considering:

- a specific revision period. The period in which the written plan or its activities have to be revised and updated has to be defined: monthly, bimonthly, quarterly, yearly, or any other as needed.
- the participation of all the organisations involved in the response. Plans and procedures must be revised by ALL the organisations involved. If this does not happen, or if this happens partially, we will have a useless plan or an incomplete plan that could be useless as well. This includes the planning and response organisations from all sectors and at all levels (government, private, social and National, local and, if needed, international).
- the resources that can be used in the response. Only those resources that exist and/or that are in good working conditions should be considered in the written plan. Lists of personnel that do not exist and/or list of equipment and vehicles that do not work should not be considered in the written plan. They will not be working or be used in a real response.
- the time and the sequence in which the activities have to be done. The plan and procedures must establish what activities have to be done and when; those that go first and those that have to be implemented after the previous ones. In other words, emergency activities (plans and procedures) are not just *a list* of activities but the description of *a sequence* of activities (through time).
- the definition of clear parameters whose occurrence involve (determine) the consequence of specific response/recovery activities. Quantitative parameters should be developed and clearly established in the plans in order to clearly determine when and under what conditions response/recovery actions have to be taken. Quantitative parameters and indicators have to be designed and developed to trigger the plan, initiate response, to initiate evacuation, to activate and deactivate shelters, to activate and deactivate EOCs, to start a mass casualty event response, to give an ‘all clear’ message, etc. These are actions based on facts, numbers and other conditions and not based on subjectivity or political decisions.
- the need of testing and evaluating the plans. Emergency planning must be tested through simulation exercises. The evaluation of simulation exercises and the evaluation of real events should take to an immediate revision of the plan and the information included in it.

21.2. Organisations Responsible for Revising the Plan

The general responsibility falls on NEMO as the Co-ordinating organisation of the whole disaster management process: However, all the organisations considered in this plan are responsible for the yearly revision and updating of the procedures they are responsible for and for the revision and updating of the whole plan itself. All procedures written by the organisations involved in the plan should be sent to NEMO for approval and circulation.

21.3. Revision of the Plan and its Procedures.

It is important to define what is to be understood by revising a plan. So here are the elements that have to be considered in any plan's revision:

A.- General information that justifies the plan:

- Characteristics of the hazard the plan is for (origin, cause, predictability, magnitude, controllability, scope of impact, duration, destructive potential, etc.).
- Characteristics of the vulnerable elements (number, type and location of people at risk, facilities, equipment, information, crops, livestock, infrastructure and services).
- Disaster scenario: What is likely to happen if the hazard strikes a specific vulnerable area (Number, type and location of: casualties, evacuees, homeless, houses, infrastructure and services affected, information lost, environmental impact, etc)
- Functions needed (according to the type of hazard and vulnerable elements): warning, notification, communications, evacuation, shelter activation, search and rescue, medical attention, security, rehabilitation of services, etc.)
- Identification of organisations and assignment of responsibilities: MOH for medical attention, environmental health; Police for security, evacuation; Met office for monitoring and warning, *etcætera*.
- Writing down the activities to be implemented: writing the plan and procedures: notification, search and rescue, etc.) See point B below.

B.- The written plan and its contents:

- General information about hazards and response needed (point A above).
- General information about aim, purpose, objectives, legal framework and organisations involved in the plan.
- Conditions (quantitative) that trigger the plan (if applicable [predictable hazards])
- Conditions that activate the response (non-predictable hazards)
- Written description of activities (procedures: main responsibilities, activities through time per responsible per function).
- List of resources to be used in an emergency (see point D below).

- Other information (Maps, charts, etc.)
- Training programme.
- Simulation exercise programme.
- Procedure for revision and updating the plan.

C.- The planning process:

- Date of revision and number of version.
- Organisations involved in the response/recovery.
- Organisation(s) responsible for revising and updating the plan.
- Organisation(s) that revised and updated the plan
- Involvement in the writing of the plan and procedures of all the organisations involved in the response/recovery.
- Evaluation of the training programme
- Results and evaluation of simulation exercises
- Evaluation of real events

D.- Resources.

- Checking the existence (visual/physical/tangible/operational), availability, veracity, level of preparedness, training, and/or working conditions of:
 - Personnel and their training (knowledge of procedures, use of equipment, etc)
 - List of personnel.
 - Directories.
 - Inventories
 - Equipment (communications, heavy equipment, others)
 - Transportation (vehicles, boats, planes, etc)
 - Medicines and medical equipment
- Maps.
- Information (any item quantified or mentioned in the plan: population, # of houses, location and type of shelters, etc.)

As it can be seen, revising an emergency response plan does not only involve reading the document. It has to be done according to a specific model and by a specific approach in order to avoid subjectivity of the plan reviewer(s). This approach will be used in the further revision of the National Emergency Management Plan and its components.

21.4. Responsibilities of the Planning Organisations.

In general all the organisations involved in this plan should:

- 1.- Revise the plan and its procedures according to the previous points (21.1-21.3)
- 2.- Meet at least yearly (Committees and Organisations responsible for all the functions)
- 3.- Revise and update the plan and its procedures at least once a year and every time after a simulation exercise and after real events.
- 4.- Update directories, inventories and other information every year.

For the specific responsibilities of NEMO's Director and NEMO's Deputy Director see points 10.1 and 10.2 of this plan.

22.- Dissemination of the Plan

The plan and its procedures have to be disseminated; they are not secret.

The plan has to be distributed to:

- 1.- All the organisations involved in the planning process and in the response.
 - Governmental
 - Private
 - Social
- 2.- The Media
- 3.- Regional and international disaster management organisations
- 4.- Donors
- 5.- CDERA Participating States
- 6.- Academic and Research Institutes.

Besides the technical version of the plan other versions shall be prepared:

- 1.- Version for the Media and for Public Information
- 2.- Internet Version

The dissemination of the plan must be done by NEMO. Copies of the plan could be numbered if considered necessary. Record of all the copies and their possessors could be kept by NEMO if it is NEMO's decision.

23.- Training

It has to be ensured that every training course delivered pertaining to this plan considers the following aspects:

- a.- The need for the training course. The training course is needed to train response personnel considered in the plan.
- b.- The adequate objectives that justify the training course delivery.
- c.- The adequate participants (target audience): personnel/organisations that have to be trained in a specific activity.
- d.- The adequate number of participants: all personnel involved in a specific disaster management activity must be trained.
- e.- The adequate trainers: trainers with knowledge on the subject and with training skills.
- f.- The adequate contents of the training course: participants must be trained to conduct efficiently the disaster management activity they are responsible for; the course must be adapted to a specific hazard and to the specific country's characteristics (geography, topography, population, vulnerability, economic and even religious aspects). Training courses have to be evaluated, improved and updated.
- g.- The adequate duration of the training course, depending on the disaster management activity and the course contents. Short and concise training courses are preferred.
- h.- The adequate number of courses: depending on the number of personnel that has to be trained.
- i.- The adequate frequency/timing of the training courses: that is, the right number of times in a specific period that the training course has to be delivered and the right specific time of year when it has to be delivered.
- j.- The adequate outcome: that is, what do we want to have after the training course: i.e., not just trained personnel, but a revised plan, the establishment of an organisation/team or an EOC, the writing of a specific procedure, etc.
- k.- The adequate evaluation and follow-up: training courses must be evaluated and improved permanently. A close follow-up of the outcome must be given: changes in personnel/organisations, revision of procedures, change in number of shelters, etc.

In this section, then, all the information about training concerning this plan has to be recorded. The following information has to be included in Attachment 1:

- 1.- National Disaster Management Training Programme (or in the NEMP if so is decided)
- 2.- National Earthquake Training Programme
- 3.- Per training course delivered
 - Objectives
 - Date and venue

List of participants
Trainer(s) and qualifications
Contents of the training course (agenda)
Manuals
Description of Outcome achieved with the training course
Evaluation of the participants
Evaluation of the course by the participants
Follow-up information
 Checking personnel, plans, training needs, etc.

The main responsible for training is NEMO as the coordinating organisation of the whole disaster management process; however, each organisation responsible for each function is responsible to have their personnel adequately trained to efficiently execute their own tasks as stated in the Plan and its Procedures.

24.- Simulation Exercises

Simulation exercises are exercises by which the organisations, institutions, personnel and equipment involved in a specific emergency response plan and/or emergency procedures are tested under the imaginary impact of a hazard.

Simulation exercises are one of the last steps of the disaster management process; *i.e.*, they can only be executed after having done all the previous disaster management activities: risk assessment, scenario design, planning, training, etc.

Simulation exercises consist of:

- An emergency plan and procedures for a specific hazard that are to be tested.
- Personnel of the institutions involved in response whose performance is going to be tested.
- Equipment and materials whose location, availability and working conditions are to be tested
- A particular disaster scenario. That is, what is supposedly happening.
- Logistics. All equipment and personnel needed for the adequate execution of the exercise must be in the right place at the right time in the right order for the right purposes.
- A theatre of operations. The place where the exercise is going to be executed (the place that is supposedly affected by the hypothetical hazard)
- Personnel to conduct and evaluate the exercise: Observers, controllers and evaluators
- A Directive. A simulation exercise directive is a document with the following information:
 - o The objectives of the exercise

- Place and time of the exercise
- The hypothetical disaster scenario
- The emergency plan and/or procedures that are to be tested
- The equipment that is going to be used
- The task forces/response personnel involved
- Names of controllers, observers and evaluators
- Simulation exercise memoir. A simulation exercise memoir is a document that contains:
 - The simulation exercise directive
 - The exercise evaluation. A simulation exercise is useless without an evaluation. Plan, procedures, personnel, vehicles and equipment performance must be evaluated comparing the ideal response (planning) to the one given in the exercise. Recommendations must be given in order to improve the plan and procedures, get more personnel, train better the task forces and acquire or improve the equipment.
 - The recommendations given
 - The description of the modifications/additions/improvement of planning and resources.

The simulation exercise memoir must be kept by the Disaster Management Organisation as a document to be studied and used for further exercises and as a historic prototype of all simulation exercises performed and their results.

Simulation exercises can be planned and organised through time according to priorities in a National Simulation Exercise Programme that includes all the planned simulation exercises needed in a specific period.

In Attachment 2 to this plan (Simulation Exercises) all the information about simulation exercises concerning this plan has to be recorded. The National Simulation Exercise Programme and all simulation exercise memoirs must be kept there.

The main responsibility for the co-ordination and evaluation of simulation exercises lies on NEMO as the co-ordinating organisation of the whole disaster management process; however, each organisation responsible for each function is responsible for testing their own personnel, equipment, vehicles, materials and planning according to the Plan and its Procedures; *i.e.*, All organisations responsible for specific response and relief activities considered in this plan have to test their own personnel, emergency procedures, material resources and vehicles through simulation exercises they have to plan and execute.

25.- Record of Real Events

The true test of an emergency plan is a real event. Personnel, other resources and planning are tested under real emergency and disaster circumstances; then, we can know if what we plan was right, if our resources were enough and the right resources, if our personnel was adequately trained, etc. Therefore, all real events have to be evaluated to see what happened and what went right and what wrong. This is done with the purpose of improving the plan and its resources, so in the next real events the response would continuously improve. If we do not improve our planning after every real event, our planning is useless and any 'lessons learned' become only a list of errors that will certainly occur repeatedly in every real event.

In Attachment 3 the information about real events has to be recorded. At least the following information has to be included:

- Hazard characteristics
- Effects/damage/consequences
- Response given
- Evaluation of the response
- Recommendations
- Amendments to the plan/improvement of resources.

The main responsibility for keeping the records of these events lies on NEMO as the Co-ordinating Organisation of the whole disaster management process; however, each organisation responsible for each function is responsible for keeping their own records about real events, response given, results and lessons learned in order to improve their own procedures and the Plan.

PART V EMERGENCY PROCEDURES

26.- Emergency Procedures

As stated in previous sections here in Part V, the emergency procedures are presented as follows:

<u>Emergency Procedure</u>	<u>Page Number</u>
1. EP-001- Notification	69
2. EP-100- Emergency Operations Centre (National)	79
3. EP-150.- Telecommunications	92
4. EP-200.- Transportation	96
5. EP-250.- Evacuation	101
6. EP-350.- Shelter Management	104
7. EP-400.- Land Search and Rescue	109
8. EP-450.- Security	112
9. EP-500.- Medical Attention	115
10. EP-550.- Environmental Health	119
11. EP-600.- Damage Assessment and Needs Analysis	124
12. EP-650.- External Assistance	128
13. EP-700.- Supply Management	133
14. EP-750.- Public Information	138
15. EP-800.- Protection and Rehabilitation of Infrastructure	142
16. EP-850.- Environmental Protection and Rehabilitation	146
17. EP-900.- Reconstruction	149
18. EP-950.- District Disaster Committee General Procedure (Earthquake)	152

Saint Lucia National Emergency Management Plan
Saint Lucia National Earthquake Response Plan

Emergency Procedure EP-001. Notification

Version:

Version 1. December 11th, 2002.

Objectives

To notify to all the members of the NEMO involved in the National Earthquake Response Plan about the impact and damage of an earthquake and about the response measures needed to be taken.

Responsible for the Procedure:

Main:

The Director of the National Emergency Management Office.

Secondary:

- The Seismic Research Unit. UWI.
- The Cabinet Secretary.
- The Deputy Director, NEMO.
- NEMO's secretary.
- The Chairpersons of the National Disaster Committees:

Steps of the Procedure.

A.- The Director of NEMO shall:

Permanent:

- 1.- Ensure that the directories of the persons involved in the plan and in this procedure that have to be notified are updated regularly and that a copy is kept at NEMO.
- 2.- Ensure that the members of the EOC update the directories of the personnel and organisations they have to notify is updated at least once a year.
- 3.- Keep one copy of this procedure and its directories at the office and one at home.

- 4.- Maintain contact with the SRU regarding earthquakes, vulnerability and risks.
- 5.- Coordinate with the Seismic Research Unit (SRU) to establish mechanisms and means of communication of information immediately after the impact of an earthquake.

After the Impact:

- 6.- Request information from the Seismic Research Unit Information about the earthquake:
Telephone: 868 662 4659; Fax 868 663 9293; e-mail uwiseismic@uwiseismic.com
- 7.- Request and receive initial reports of damage.
- 8.- Notify to all persons/organisations listed in Directory A attached to this procedure.
- 9.- Call a meeting at NEMO Headquarters if necessary, to evaluate the need to activate the EOC and consult with the Cabinet Secretary.
- 10.- If the EOC is to be activated, the Director will notify Teams # 1 and # 2 (Directory D) and request the attendance of the members of Team #1 to the EOC immediately.

B.- The Seismic Research Unit of the University of the West Indies shall:

Permanent:

- 1.- Maintain contact with NEMO to provide information about earthquakes, vulnerability and risks.

After the Impact:

- 2.- Provide information to the NEMO when requested regarding an earthquake, its magnitude and possible aftershocks.
- 3.- If the earthquake is of a magnitude 5 or greater, contact NEMO and provide information about the earthquake as soon as possible, at least: magnitude, location and about the possibility of aftershocks.

C.- The Cabinet Secretary shall:

Permanent:

- 1.- Keep an updated directory of the Permanent Secretaries of the Government Ministries (Directory B) at the office and keep one copy at home.

After the Impact:

- 2.- Notify the Prime Minister and the Permanent Secretaries about the earthquake, damage and response measures needed.
- 3.- Based on information received by the Director of NEMO about the situation, determine, along with the Director of NEMO, the need to activate the EOC.

D.- The Deputy Director of NEMO shall:

Permanent:

- 1.- Assist the Director to ensure that the directories of the persons involved in the plan that have to be notified are updated regularly and that a copy is kept at NEMO.
- 2.- Keep one copy of the updated directories at the office and one at home.
- 3.- Assist the Director to ensure that the members of the EOC update the directories of the personnel and organisations they have to notify at least once a year.
- 4.- Assist the Director to revise and update this procedure at least once a year and always after a simulation exercise in which it is tested and after a real event.

After the Impact :

- 5.- Assist the Director with the notification of information about the earthquake and response measures needed.
- 6.- If the EOC is activated, assist the Director to notify teams #1 and #2.
- 7.- Assist the Director to update this procedure after a real event has happened.
- 8.- If the EOC is activated, inform the Prime Minister and go to the EOC.

E.- NEMO's Secretary shall:

Permanent:

- 1.- Keep the directories of this procedure updated.
- 2.- Keep a copy of the directories at the office and one at home.

3.- Write to the entire organisations annually (March) requesting confirmation or edits to contact persons and info.

After the Impact:

3- Assist the Director and the Deputy Director to notify all the agencies and organisations mentioned in this procedure about the earthquake, damage and response measures needed.

4.- If the EOC is activated, assist the Director to notify Team # 1 and Team # 2.

5.- Make suggestions to the Director and Deputy Director of NEMO for the improvement of Directories and this procedure.

F.- The Chairpersons of all Disaster Committees shall:

Permanent:

1.- Keep an updated directory of their members at the office and one copy home.

2.- Establish roles and responsibilities for each of the Committee members

After the Impact:

3.- Call NEMO after every strong earthquake to find information about the earthquake and its effects and to request instructions.

4.- After contacting NEMO or if notified by NEMO, notify the members of the Committee (Directory C) about the situation.

5.- After receiving NEMO's notification that the EOC has to be activated due to the earthquake consequences, inform the members of the Committee and go to the respective EOCs.

Attachment 1: Directories

- Directory A: Persons/agencies to be notified by NEMO Director.
- Directory B: Persons to be notified by Cabinet Secretary Office.
- Directory C: Persons/organisations to be notified by Chairpersons of the National Disaster Committees.
- Directory D: Team # 1 and Team # 2. To be notified by NEMO's Deputy Director when the EOC is activated.

END OF PROCEDURE

Attachments:

Attachment 1: Directories.

Directory A: Persons/agencies to be contacted/notified by NEMO Director.

1.- Seismic Research Unit.

Telephone: 868 662 4659; Fax 868 663 9293; e-mail uwiseismic@uwiseismic.com

2.- NEMO members others than committees' chairpersons

The Cabinet Secretary.
Commissioner of Police
Fire Chief
Chief Medical Officer
Comptroller of Customs

3.- Chairpersons National Disaster Committees

Transportation Disaster Committee
Supply Management Disaster Committee
Telecommunications Disaster Committee
Damage Assessment Disaster Committee
Information Disaster Committee
Welfare Disaster Committee
Emergency Works/Rehabilitation/Reconstruction Disaster Committee
Shelter Management Disaster Committee.
Oil Pollution Action Committee [OPAC]
Hospitality Industry Crisis Management Unit

4.- Chairpersons District Disaster Committees

Local Disaster Committee Gros Islet
Local Disaster Committee Castries North
Local Disaster Committee Castries North East/Barbonneau
Local Disaster Committee Castries South East
Local Disaster Committee Castries East
Local Disaster Committee Castries Central
Local Disaster Committee Castries South *
Local Disaster Committee Anse La Raye

Local Disaster Committee Canaries
Local Disaster Committee Soufriere
Local Disaster Committee Choiseul
Local Disaster Committee Laborie
Local Disaster Committee Vieux Fort North *
Local Disaster Committee Vieux Fort South
Local Disaster Committee Micoud North
Local Disaster Committee Micoud South
Local Disaster Committee Dennery North
Local Disaster Committee Dennery South

Not established as of December 11th, 2002.

Directory B: Persons to be notified by the Cabinet Secretary Office:

Permanent Secretary, Ministry of Finance, International Financial Services, Economic Affairs and Information.
Permanent Secretary, Ministry for External Affairs, International Trade and Civil Aviation.
Permanent Secretary, Ministry of Education, Human Resource Development, Youth and Sports.
Permanent Secretary, Ministry of Commerce, Tourism, Investment and Consumer Affairs.
Permanent Secretary, Ministry of Physical Development, Environment and Housing.
Permanent Secretary, Ministry of Health, Human Services and Family Affairs.
Permanent Secretary, Ministry of Social Transformation, Culture, Local Government & Ecclesiastical Affairs
Permanent Secretary, Ministry of Home Affairs and Gender Relations
Permanent Secretary, Ministry of Labour Relations, Public Service and Co-operatives.
Permanent Secretary, Ministry of Communications, Works, Transport and Public Utilities.
Permanent Secretary, Ministry of Agriculture, Forestry and Fisheries.
Permanent Secretary, Attorney General's Office and Ministry for Justice.

Directory C: Persons/organisations to be notified by Chairpersons of the National Disaster Committees

1.- Transportation Disaster Committee
Deputy Chairperson-Air Transport
Representative- Ground Transport
Representative-Shipping

Coast Guard Commander
Chief Pilot, Air and Sea Port Authority
Representative of the Tourism Sector (SLTB)

2.- Supply Management Disaster Committee

Chairperson-Representative of Service Clubs.
Deputy Chairperson-Representative of CARITAS Antilles
Rep- Saint Lucia Rotary Clubs
Rep-Saint Lucia Red Cross
Rep- Kiwanis Club
Rep- Lion's Club
Rep- Toast Masters Club
Rep- Optimist Club
Rep- Adventist Development and Relief Agency
Rep- Salvation Army
Rep- Saint Lucia Boy Scouts
Rep- Saint Lucia Girl Guides
Rep- Saint Lucia Cadet Corps
Supplies Officer Ministry of Commerce
Controller or Rep-Customs and Excise Department
Rep WASCO
Representative. Ministry of Social Transformation, Culture and Local Government
Rep-Chamber of Commerce
Rep-Tourism Sector. (SLTB)
Rep-Rotarak Club
Rep-Leo Clubs

3.- Telecommunications Disaster Committee

Deputy Chairperson- To be nominated by the Permanent Secretary, Ministry of Communications, Works, Transport and Public Utilities.
Representatives- Telecommunication Companies.
Rep-Amateur Radio
Rep-Citizens' Band
Co-ordinator, Radio Operator Emergency Response Group
Rep-Tourism Sector (SLTB)

4.- Damage Assessment and Needs Analysis Disaster Committee

Director of Meteorological Services
Director of Saint Lucia Tourist Board.
Rep- Ministry of Agriculture
Rep- Department of Statistics

Rep- Banana Companies/WIBDECO
Rep-Chamber of Commerce
Rep- Ministry of Communications, Works, Transport and Public Utilities.
Rep- Ministry of Health, Human Services and Family Affairs.
Rep- Ministry of Education, Human Resource Development, Youth and Sports
Reps- Telecommunication Companies
Rep- WASCO
Rep-LUCELEC
Construction and Engineering Associations
Architects Associations
Quantity Surveyors Associations

5.- Information Disaster Committee

SLU-GIS
The Media

6.- Welfare Disaster Committee

Chairperson-President of the Saint Lucia Red Cross Society
Deputy Chairman- To be announced.
Director General- Saint Lucia Red Cross
Head-Nutrition Unit, MOH
Rep-Fire Department
Coast Guard
Saint Lucia Cadet Corps
Director-Social Services. Ministry of Social Transformation
Stress Management Team
Rep-Tourism Sector. SLTB

7.- Emergency Works/Rehabilitation/Reconstruction Disaster Committee

Deputy Chairman-Permanent Secretary, Ministry for Planning.
Town Clerk, Castries City Council
Rep-LUCELEC
Rep- WASCO
Reps- Telecommunication Companies
Planning Officer Ministry of Health
Director Community Services and Local Government
Executive Director-Saint Lucia Hotel and Tourism Association.

8.- Shelter Management Disaster Committee

Chairperson. The Chief Education Officer, Ministry of Education.
School Principals.

Church Leaders
Community Centres Managers

9.- Oil Pollution Action Committee[OPAC]

Chair: Director of Maritime Affairs. SLASPA.
Ministry for Planning (Deputy Chairperson)
Royal Saint Lucia Police Force
Saint Lucia Marine Police Unit (OSC)-(Sea)
Fire Service (OSC-Land)
Fisheries Department
Solid Waste Management Authority
Shell Antilles & Guiana's LTD Bulk Station
Texaco Bulk Station
HESS Oil (Saint Lucia Ltd.)
Ministry for External Affairs, International Trade and Civil Aviation.
Caribbean Environmental Health Institute (CEHI)
National Conservation Authority

10.- Crisis Management Disaster Committee

Coordinator/Chairperson and
NEMO liaison - Permanent Secretary, Ministry of Tourism.
Head Crisis Management Unit - Director of Product Development, Ministry of
Tourism.
Damage and Needs
Assessment Unit - Executive Vice-president. SLTHA
Air and Seaports
Information Unit - Rep. SLASPA.
Evacuation Unit - Rep. St. Lucia Rep. Ground Handlers Association &
Rep. National Taxi Council.
Public Relations and
Communications Unit - Deputy Director. SLTB

Directory D- Team # 1 and Team # 2. Emergency Operations Centre.

After the positive decision to activate the EOC has been taken, the Director notifies Teams #1 and #2. Team one should remain in the EOC.

Team # 1:

The Cabinet Secretary
National Disaster Coordinator

Permanent Secretary, External Affairs
Chief Medical Officer
Police Commissioner (and request to policemen)
Chief Fire Officer
The Principal Information Officer
The Permanent Secretary, Ministry of Tourism
Amateur Radio and Citizen Band
Chairpersons of all the Disaster Committees (request one Amateur Radio Operator from
Telecommunications Committee)
Red Cross Representative
SLASPA Representative
Stenographer/typist

Additionally, NEMO Director shall notify:

The message receiver (runner)
The situation reporter (s)
The damage assessment logger.

After 12 hours Team 2 should be in the EOC.

Team # 2:

Permanent Secretary, Planning
Deputy National Disaster Coordinator
Deputy Permanent Secretary, External Affairs
Medical Officer Health
Deputy Police Commissioner
Deputy Chief Fire Officer
Representative GIS
Representative Ministry of Tourism
Amateur Radio and Citizen Band
Deputy Chairpersons of National Disaster Committees
Red Cross Representative
SLASPA Representative
Stenographer/Typist

Additionally, substitutes for:

The message receiver (runner)
The situation reporter (s)
The damage assessment logger.

Saint Lucia National Emergency Management Plan
Saint Lucia National Earthquake Response Plan

Emergency Procedure EP-100 Emergency Operations Centre (National)

Version:

Version 1. December 11th, 2002.

Objectives

To activate, operate and deactivate the National Emergency Operations Centre (EOC), located in NEMO Headquarters Red Cross Building, Vigie, in the case of the impact of an earthquake in Saint Lucia.

Responsible for the Procedure:

Main:

The Director of NEMO

Secondary:

- The Deputy Director of NEMO
- The Cabinet Secretary
- The Members of the EOC
- NEMO's Secretary
- The Message Receiver
- The Situation Reporters
- The Damage Assessment Logger

Steps of the Procedure.

A.- The Director of NEMO shall

Permanent:

1.- Ensure the Emergency Operation Centre is in good shape and has all information needed at all times.

2.- Organise, plan execute and evaluate simulation exercises for the activation and operation of the EOC.

3.- Ensure that the EOC has all equipment, information and materials needed for its operation:

- Communications
- Stationery
- Maps
- Situation report forms
- Message forms
- Emergency plan
- Emergency procedures
- Flip chart
- Computers
- Files
- Directories
- Food

After the Impact:

4.- Receive from the Seismic Research Unit Information about the earthquake.

5.- Request and receive initial reports of damage. If necessary call a 'Post Impact meeting' at NEMO headquarters to analyse the situation and determine if the EOC is to be activated.

6.- Consult with the Cabinet Secretary and other EOC members as necessary, about the activation of the EOC based on the reports about damage and response measures needed.

7.- If the situation does not demand the activation of the EOC, co-ordinate the response from NEMO's office as needed.

8.- If the situation demands the activation of the EOC, proceed with the notification to the EOC members Team # 1 as described in the Notification Procedure (EP-001)

9.- Request from the Police 2 policemen to be sent immediately to the EOC to provide security.

10.- Request from the Telecommunications Disaster Committee Chairperson one Amateur Radio Operator to be sent immediately to the EOC.

11.- Set up the EOC with the assistance of the Police members and the Radio Operator and the EOC members as they arrive.

- 12.- Receive and brief all EOC members at their arrival
- 13.- Ensure that EOC members finally set up the EOC.
- 14.- Co-ordinate all activities in the EOC. During his/her absence from the EOC, be substituted by the Deputy Director or by the Cabinet Secretary.
- 15.- Ensure, immediately after the EOC is activated, that the Transportation Committee provides aerial transportation for the initial damage assessment flight if needed.
- 16.- Receive information from the EOC members after the initial damage assessment flight.
- 17.- Start to receive incoming messages from the runner.
- 18.- Analyse and prioritise incoming messages. Always give priority to those that demand a response within a specific timeframe or to those that pose an immediate danger to life and property.
- 19.- Revise if the messages were given to the right persons by the runner, make corrections, if necessary, and demand action from other EOC members. Always contact and inform the main responsible for the response.
- 21.- Read aloud all incoming messages when first read.
- 22.- Request information from EOC members responsible for action to be taken
- 23.- Be informed verbally by the organisation responsible for the response for each message.
- 24.- Revise continuously the incoming messages to give an adequate follow up and updating of information about actions taken.
- 25.- After 12 hours of EOC operation, with the assistance of all EOC members and NEMO personnel, ensure that Team 2 is notified and called to the EOC.
- 26.- After 12 hours of operation request a report from all members of the EOC once both EOC teams are present.
- 27.- After 12 hours of activation of the EOC hand responsibilities over the Deputy Director NEMO after briefing him.
- 28.- After 24 hours of EOC activation return to the EOC and be briefed by the Deputy Director.

29.- After 24 hours of EOC activation request a report from all members of the EOC once both EOC teams are present.

30.- After 24 hours, request reports from all EOC members every 12 hours with the presence of both two teams.

31.- After 24 hours of the impact, along with the rest of the EOC members, considering the disaster situation and after consulting with the Cabinet Secretary and/or the Prime Minister, take the decision to continue the operations or deactivating the EOC.

32.- After the EOC deactivation, based on the disaster situation and after consulting with the rest of the EOC members, decide about the activation of a 'Task Force' chaired by the Ministry of Planning, based in NEMO headquarters, to conduct the rehabilitation and reconstruction issues that have to be conducted.

33.- If there is the need, participate in the creation of a Reconstruction Committee.

B.- The Deputy Director of NEMO shall:

Permanent:

1.- Be always prepared to assist the Director of NEMO in the case of a disaster and activation of the EOC

2.- Be trained to substitute the Director of NEMO in the EOC during his/her absence.

3.- Participate in EOC simulation exercises in which his/her performance in the EOC is tested.

After the Impact:

4.- After the EOC has been activated, contact NEMO Director to decide whether to stay home or to go to the EOC.

5.- After every 12 hours of activation of the EOC, substitute for the Director of NEMO as Co-ordinator of the EOC and its operations.

6.- Once arriving to the EOC, be briefed by NEMO's Director on the situation and pending issues.

7.- After 12 hours of being in the EOC, be substituted by NEMO Director in the EOC.

- 8.- Before leaving the EOC, brief NEMO's Director on the situation and pending issues.
- 9.- Repeat steps 5 to 8 until deactivation of EOC.
- 10.- Revise and update this procedure after every real event.

C.- The Cabinet Secretary shall:

Permanent:

- 1.- Know the National Earthquake Response Plan and its Emergency Procedures.
- 2.- Participate in simulation exercises that test the EOC and be informed of their evaluation.

After the Impact:

- 3.- Receive information from NEMO's Director about the situation.
- 4.- Be consulted by the Director of NEMO about the decision of activating the EOC.
- 5.- After the decision of activating the EOC has been taken, go to the EOC.
- 6.- When arriving to the EOC, be briefed by the EOC Director.
- 7.- Assist and advise the EOC chairperson in the co-ordination of the EOC.
- 8.- During NEMO's Director absence from the EOC, act as chairperson of the EOC and co-ordinate all activities therein.
- 9.- Remain in the EOC and advise the Director of NEMO in any situation that demands his/her opinion/decision or the Prime Minister's.
- 10.- Contact and consult the Prime Minister as he/she thinks fit regarding any message and situation that demands the Prime Minister's decision.
- 11.- After 12 hours in the EOC be substituted by the PS of the Ministry of Planning.
- 12.- After 24 hours of activation in the EOC return to the EOC and substitute the PS of the Ministry of Planning.

D.- The Members of the EOC shall:

Permanent:

- 1.- Know the Saint Lucia Earthquake Response Plan and its procedures and participate in the planning process by revising and updating them regularly under NEMO Director's co-ordination.
- 2.- Know their role in the EOC and determine their own needs regarding equipment, materials, stationary, information and others.
- 3.- Meet regularly with the Committee members in order to improve the plan and its procedures, identify roles and assign to the Committee members responsibilities regarding preparedness and response.
- 4.- Jointly with the Committee members, define mechanisms of co-ordination and communication in the case of an emergency or a disaster, particularly from the Chairperson in the EOC to all the members.
- 5.- Ensure that everything they would need in the EOC is always ready in case of its activation.
 - Information
 - Plan and procedures
 - Formats
 - Forms
 - Maps
 - Stationery
 - Communications equipment
 - Directories
 - Inventories

After the Impact:

- 6.- After the decision to activate the EOC has been taken, go to the EOC.
- 7.- Before going to the EOC notify the organisations/persons they would have to contact from the EOC to be in place and to wait for instructions from the EOC.
- 8.- Arrive at the EOC with everything that they would need for operation:
 - Information
 - Plan and procedures
 - Formats
 - Forms

Maps
Stationery
Communications equipment
Directories
Inventories

- 9.- Report to the Director of NEMO when arriving at the EOC
- 10.- Be briefed on the situation and pending issues
- 11.- Take the seat or place destined for him/her in the EOC
- 12.- Prepare dips (special, with boxes or with folders) for his/her incoming, pending and outgoing messages.
- 13.- Respond to every message that demands their attention
- 14.- Communicate with other members in the EOC for joint actions that have to be taken or for gathering of information.
- 15.- Write down in the log sheet the action taken and return it to the chairperson only when the action is finished.
- 16.- Establish permanent communication with the members of their Committee/Ministry/Organisation that are taking action in sectoral EOC's, in the Ministries, in the field or in their offices.
- 17.- Beside returning the messages with the written action taken, read the message and the action taken aloud so the chairperson and the rest of the EOC would know about it.
- 18.- Present a status on the situation every 12 hours to the chairperson and to the whole EOC.
- 19.- In the case of a visit of the Prime Minister to the EOC, or whenever a report is requested by the Prime Minister or by the EOC chairperson, present a full situation report concerning the responsibilities of his/her Committee /Ministry/ Organisation, including damage assessment, actions taken and results.
- 20.- Brief his/her substitute every time before leaving the EOC in the change of shifts.
- 21.- Be briefed every time arriving at the EOC.

- 22.- At all times, provide information and resources to the EOC members.
- 23.- Provide information and opinion for the decision, when needed, about the deactivation of the EOC.
- 24.- After the deactivation of the EOC, notify the members of his/her organisation/ Ministry/ about it.
- 25.- Participate as a member of the 'Task Force' if it is needed.

E.- NEMO's Secretary shall:

Permanent:

- 1.- Assist the Director and the Deputy Director to ensure that the EOC is kept in good shape.
- 2.- Assist the Director and the Deputy Director of NEMO to ensure that the EOC has all equipment, information and materials needed for its operations if it has to be activated after the impact of an earthquake:
 - Communications
 - Stationery
 - Maps
 - Situation report forms
 - Message forms
 - Emergency plan
 - Emergency procedures
 - Flip chart
 - Computers
 - Files
 - Directories
 - Food

After the Impact:

- 3- If the EOC is activated, go to the EOC.
- 4- Report in the EOC to the Director of NEMO.
- 5- Be in charge of the management of internal EOC supplies: food, stationery, photocopies, etc., and others needed by the EOC.

6- Provide the EOC chairperson with information needed from NEMO for the operations of the EOC: directories, files, etc.

7- Assist the Message Receiver (Runner) with the copying and distribution of messages to the EOC members.

8- Assist the EOC members with turning over the log sheets to the EOC chairperson.

9.- Assist the Director and Deputy Director in any other need.

10.- Assist the Director and the Deputy Director in the deactivation of the EOC.

11.- After 12 hours leave EOC and return 12 hours later.

12.- Co-ordinate the administrative staff when in the EOC.

F.- The Message Receiver (Runner) shall:

Permanent:

1.- Revise and improve this procedure and the log sheet.

2.- Participate in simulation exercises.

After the impact:

3.- If the EOC has been activated, go to the EOC.

4.- Ensure that enough copies of the log sheet are available.

5.- Once in the EOC report to the Director.

6.- Contact the Radio Operator

7.- Find out about any messages that have been received in the EOC and their status.

8.- Be informed about every message that is received in the EOC

9.- Log every message received in the EOC on the log sheet form

10.- Give copies of the log sheet for action to be taken to:

Chairperson

Members of the EOC

Main EOC member responsible for action

Secondary EOC members responsible for action

Other EOC members, for their information.

Situation Reporter (shares one copy with damage assessment logger)

11.- If the message involves information about damage, always give a copy to the damage assessment chairperson and one to the damage logger.

12.- Shout: 'Incoming!' every time that he/she delivers a message to the EOC chairperson or to any EOC member.

13.- Assist the EOC chairperson to have a sequential record of all log sheets including incoming messages and action taken by EOC members.

14.- After the EOC is deactivated, revise the log sheets and deliver them to the chairperson.

G.- The Situation Reporter (s) shall:

Permanent:

1.- Revise and improve the situation report sheets for their sectors.

2.- Participate in simulation exercises.

After the Impact:

3.- If the EOC is activated go to the EOC.

4.- Once in the EOC report to the EOC chairperson.

5.- Ensure that the EOC has enough situation report sheets to operate.

6.- Assist in the EOC set up and ensure that situation report sheets are hung on the wall so everybody can see them and follow the events and actions taken.

7.- Prepare dips (with boxes or with folders) for incoming, pending and outgoing (or logged) messages.

8.- Ask the EOC Chairperson or a specific member of the EOC about any doubts regarding any message and/or action taken.

9.- After 12 hours in the EOC leave after briefing the substitute.

10.- Return to the EOC twelve hours later.

H.- The Damage Assessment Logger shall:

Permanent:

1.- Revise and improve the situation report sheets.

2.- Participate in simulation exercises.

After the Impact:

3.- If the EOC is activated go to the EOC.

4.- Once in the EOC report to the EOC chairperson.

5.- Ensure that enough damage assessment report sheets are in the EOC.

6.- Assist in the EOC set up and ensure that damage report sheets are hung on the wall so everybody can see them and follow the events and actions taken.

7.- Prepare dips (with boxes or with folders) for incoming, pending and outgoing (or logged) messages.

8.- Work closely with the Situation Reporter and share log sheets.

9.- Ask the EOC Chairperson or a specific member of the EOC about any doubts about any message and/or action taken.

10.- After 12 hours in the EOC leave after briefing the substitute.

11.- Return to the EOC twelve hours later.

Attachments:

1.- Log sheet (messages)

2.- Situation report sheet (not shown)

3.- Damage assessment sheet (not shown)

END OF PROCEDURE

ATTACHMENT 1: LOG SHEET _____ NUMBER _____

INCIDENT NO. _____

SUMMARY OF INCIDENT: _____

NORMAL _____ URGENT _____ DEADLINE _____

RESPONSE_GIVEN _____

TIME RECEIVED (EOC) _____

TIME OF ACTION (EOC MEMBER) _____

COMPLETION TIME (RETURNED TO EOC CHAIRPERSON) _____

Distribution List

EOC Member	Primary Action	Secondary Action	Only for Information	Other
Cabinet Secretary				
EOC Chairperson (NEMO)				
Situation Reporter				
Damage Assessment Logger				
NEMO Secretary				
Radio operator				
Telecommunications Committee				
Transportation Committee				
Chief Medical Officer				
Welfare Committee				
Damage Assessment and Needs Analysis Committee.				
Supply Management Committee				
Works and Rehabilitation Committee				
Shelter Management Committee				
OPAC				
Ministry of Tourism/CMU				
Ministry of External Affairs				
Royal Saint Lucia Police Force				
Saint Lucia Fire Service				
Government Information Systems GIS				
SLASPA				
Comptroller of Customs				

Saint Lucia National Emergency Management Plan
Saint Lucia National Earthquake Response Plan
Emergency Procedure EP-150 Telecommunications

Version

Version 1. December 11th, 2002.

Objectives

To ensure that telecommunications are provided to NEMO and the EOC and its members in the case of the impact of an earthquake in order to conduct and co-ordinate the national emergency response as needed.

Responsible for the Procedure:

Main:

The Chairperson of the Telecommunications Committee.

Secondary:

- Committee Members:
 - Police
 - Fire Service
 - Cable and Wireless
 - Amateur Radio
 - Ministry of Works
 - Citizen's Band
 - Radio Operator Emergency Response Group

- EOC members

Steps of the Procedure.

A.- The Chairperson of the Telecommunications Committee shall:

Permanent:

- 1.- Develop a telecommunications plan to ensure that an adequate communications system to serve the communications needs for the NEMO before, during and after exists.
- 2.- Advise NEMO on communications matters.
- 3.- Advise on the purchases of emergency telecommunications equipment for the island and advise on the improvement, maintenance and upgrading of this equipment.
- 4.- Establish a dynamic inventory of all equipment purchased by NEMO.
- 5.- Nominate a radio operator-training officer and monitor his/her performance.
- 6.- Develop and implement a radio operator-training programme in association with the radio operator-training officer through the facilities of NEMO.
- 7.- Make annual review and revision of the radio operator-training programme.
- 8.- Develop and conduct a simulation exercise to test equipment on an annual basis under the coordination of NEMO.
- 9.- Assist in preparing, participating in and assessing joint annual exercises with all response services of NEMO and submit after action reports to the NEMO.
- 10.- Maintain a list of human and material resources.

After the Impact:

- 11.- If the EOC is activated, go to the EOC.
- 12.- Be in charge of telecommunications to and from the EOC.
- 13.- Manage all emergency telecommunications.
- 14.- Liaise with the rest of the Disaster Committees and EOC members in order to respond to their needs.

15.- Provide or suggest solutions, regarding telecommunications equipment and other telecommunications resources where needed according to existing resources in the different agencies in Saint Lucia and according to the telecommunications plan.

16.- Every 12 hours provide a Radio Operator for NEMO. When arriving at the EOC, prepare a roster for NEMO Director indicating name and time of arrival of radio operators to the EOC (1 radio operator every 12 hours).

17.- Assist the EOC in the rehabilitation of the telecommunications network.

18.- After the EOC is deactivated, prepare a report with recommendations regarding telecommunications: equipment, personnel, planning, etc.

19.- Revise and update this procedure.

20.- Revise and update the telecommunications plan.

B.- The Members of the Telecommunications Committee shall:

Permanent:

1.- Assist the Chairperson in providing material and human resources for the design and implementation of the Telecommunications Plan.

2.- Assist the Chairperson in providing material and human resources for training emergency responders at the national and local level in telecommunications issues.

3.- Assist the Chairperson in providing material and human resources for the planning, organisation and execution of the annual telecommunications exercise.

After the Impact:

4.- Provide telecommunication resources to the EOC and for the better operation of the Plan island-wide.

5.- After the EOC is deactivated, prepare a final report and send it to NEMO.

C.- The EOC Members shall:

Permanent:

- 1.- Identify their telecommunications resources
- 2.- Identify the EOC and the Saint Lucia National Earthquake Response Plan communications needs in the case of a disaster.
- 3.- Identify their telecommunications needs from the EOC to their own organisation/ agency/ ministry.
- 4.- Ensure that communication exists during EOC operations from the EOC to their own organisation/ agency/ ministry.
- 5.- Provide information to the Telecommunications Committee Chairperson regarding telecommunications resources in their own organisation/ agency/ ministry, so that resources can be optimised.
- 6.- Participate in the design, implementation and testing of the telecommunications plan.
- 7.- Participate in the planning, organisation, execution and evaluation of the yearly telecommunications exercise.

After the Impact:

- 8.- If the EOC is activated, go to the EOC and bring along the necessary communication equipment to communicate from the EOC to the organisation/ agency/ ministry they have to coordinate from the EOC.
- 9.- Offer their own telecommunication resources to the EOC as needed.
- 10.- Include in their final report recommendations for the improvement of communications and the Telecommunications Plan.

Attachments:

- 1.- Telecommunications Plan (Not shown. Still to be revised and updated by the Telecommunications Committee Chairperson and members)

END OF PROCEDURE

Saint Lucia National Emergency Management Plan
Saint Lucia National Earthquake Response Plan
Emergency Procedure EP-200 Transportation

Version

Version 1. December 11th 2002.

Objectives

To ensure that transportation is provided to NEMO and the EOC and its members in the case of the impact of an earthquake in order to conduct and co-ordinate the national emergency response as needed.

Responsible for the Procedure:

Main:

Chairperson of the Transportation Disaster Committee

Secondary:

- Committee members:
 - Deputy Chairperson-Air Transport
 - Representative-Ground Transport
 - Representative-Shipping
 - Coast Guard Commander or nominee
 - Chief Pilot, SLASPA
 - Representative of the Tourism Sector.

- EOC members

Steps of the Procedure.

A.- The Chairperson of the Transportation Committee shall:

Permanent:

- 1.- Revise and update this procedure regularly.

- 2.- Maintain a list of available land, sea and air transport resources from the public and private sector.
- 3.- Maintain links with District Disaster Committees and District Transportation Sub-Committees.
- 4.- Update the list of transportation resources every year.
- 5.- Submit the list of transportation resources every year to NEMO.

After the Impact:

- 6.- If the EOC is activated, go to the EOC.
- 7.- Liaise with other EOC members in order to respond to their transport needs.
- 8.- As soon as arriving at the EOC co-ordinate with NEMO Director in order to provide transportation to EOC members if needed.
- 9.- Provide aerial/sea transport for the initial aerial damage assessment if requested by the NEMO. Transport should be provided for 4 - 8 persons as follows in order of priority:

Group 1:

Prime Minister
Damage Assessment Committee Chairperson
Representative Ministry of Agriculture
Works and Rehabilitation Disaster Committee Chairperson
SLU-GIS representative (cameraman)

Group 2:

Police Commissioner
Chief Medical Officer
SLU-GIS representative (cameraman)

- 10.- Ensure that a panel van and an open back van are assigned to NEMO for transportation after the impact.
- 11.- Co-ordinate with NEMO and other EOC members to provide transportation of relief workers as needed.

12.- Coordinate with SLASPA and the Supply Management and the Shelter Management Disaster Committees Chairpersons to provide transportation for relief and rehabilitation supplies from the docks and airport to storage areas, warehouses and shelters.

13.- Co-ordinate with Police and the Shelter Management Committee Chairperson to provide transportation for land and sea evacuation.

14.- Co-ordinate with SLASPA, Police and Ministry of Tourism (CMT) to provide transportation for air/ sea evacuation out of the country if needed.

15.- Co-ordinate with NEMO and other EOC members for transportation of fuel to service points if needed.

16.- Co-ordinate with the Health and Welfare Disaster Committees' Chairpersons for the transportation of injured, inside or outside the island if needed.

17.- Co-ordinate with the Police and the Health and the Welfare Disaster Committees' Chairpersons and funeral homes for the transportation of dead people to Hospitals according to the 'Saint Lucia Policies and Guidelines for the Adequate Management and Disposal of Dead Bodies in Disasters'.

18.- Co-ordinate with the Health and the Welfare Disaster Committees' Chairpersons and with the Ministry of Agriculture to provide transportation for dead animals.

19.- Co-ordinate with the Works and Rehabilitation Disaster Committee Chairperson to provide transportation to assist in road clearing.

20.- Co-ordinate with the Chairpersons of the Disaster Committees of Works and Rehabilitation, Shelter Management and Damage Assessment and Needs Analysis and, if needed, with the Saint Lucia Solid Waste Management Authority to provide transportation for debris and garbage collection in roads and shelters and from collapsed buildings.

21.- After 12 hours in the EOC be substituted by the Deputy Chairperson. Come back to the EOC 12 hours later.

22.- Always brief and be briefed by the Deputy Chairperson when arriving and leaving the EOC.

23.- After the EOC is deactivated, prepare a report that includes situations faced, activities executed, results and recommendations and send it to NEMO.

24.- Revise and update this procedure.

B.- The Members of the Transportation Committee shall:

Permanent:

- 1.- Assist the Chairperson in the elaboration and yearly update of the transport list by providing the number, type, capacity and location of their transport and of their available human resources (drivers, operators, pilots, etc.)
- 2.- Make a commitment to provide transportation to the Transportation Committee, the EOC and NEMO in the case of an emergency and/or a disaster, if necessary through Memoranda of Understanding always specifying the conditions under which the transportation is provided.

After the Impact:

- 3.- Provide transportation resources to the chairperson as requested from the EOC as needed.
- 4.- Make recommendations for the future improvement of transportation resources and mechanisms under emergencies and disasters.

C.- The EOC Members shall:

Permanent:

- 1.- Provide information to the chairperson for the elaboration and updating of the list of transportation.
- 2.- Keep their own lists of transportation vehicles updated at least every year.

After the Impact:

- 3.- Provide transportation resources to the EOC and to the Transportation Disaster Committee Chairperson as needed.

Attachments (Not shown)

- 1.- List of transport available
 - Land
 - Sea
 - Air

2.- Directory

Land transport

Sea transport

Air transport

3.- Policies and Guidelines for the Adequate Management

END OF PROCEDURE

Saint Lucia National Emergency Management Plan
Saint Lucia National Earthquake Response Plan

Emergency Procedure EP-250 Evacuation

Version

Version 1. December 11th, 2002.

Objectives

To ensure that after the impact of an earthquake, damaged and/or areas at risk are evacuated as needed.

Responsible for the Procedure:

Main:

Commissioner of Police. Royal Saint Lucia Police Force.

Secondary:

Chief Fire Officer.

Steps of the Procedure.

A.- The Commissioner of Police shall:

Permanent:

- 1.- Establish co-ordination with NEMO and, at the local level, with the District Disaster Committees to establish and permanently improve evacuation mechanisms.
- 2.- Establish co-ordination with National Disaster Committees to ensure their assistance in the case of evacuation particularly with the Transportation Committee.
- 3.- Be provided by NEMO and the Shelter Management Committee Chairperson with the updated list of shelters every year.

After the Impact:

- 4.- If the EOC is activated, go to the EOC.
- 5.- Report to the EOC Chairperson.
- 6.- Be informed of the need of evacuation of specific areas.
- 7.- Deploy police personnel and vehicles (or boats) to co-ordinate evacuation activities.
- 8.- Request assistance from District Disaster Committees as needed in the case of evacuation.
- 9.- Request assistance from the Chairperson of the Transportation Committee when transportation and/or drivers are needed to conduct the evacuation process.
- 10.- Request information and assistance from the Chairperson of the Works/Rehabilitation Committee and from SLASPA representative in the EOC regarding roads cleared and airports, seaports open.
- 11.- Request information from the Shelter Management Committee regarding shelters.
- 12.- Assist in the evacuation of specific buildings as needed: hospitals, governmental buildings and any other that is in danger due to the earthquake effects.
- 13.- In the case of evacuation of tourists/foreigners from the island, request/offer information and assistance from the Ministry of Tourism and its Crisis Management Centre and from the Ministry of External Affairs.
- 14.- After 12 hours be substituted by the Deputy Commissioner of Police.
- 15.- Return after 12 hours.
- 16.- After the EOC is deactivated, prepare a final report of the Police Force activities and send it to NEMO.

B- The Chief Fire Officer shall:

Permanent:

- 1.- Work jointly with the Police in the tasks regarding this procedure and the National Earthquake Response Plan.

2.- Know the Earthquake Response Plan, its procedures and his role in it and during an emergency or disaster, particularly his activities regarding evacuation.

3.- Participate in simulation exercises that test this procedure within the National Earthquake Response Plan.

After the Impact:

4.- If the EOC is activated, go to the EOC and maintain communication with the Police and work together in any evacuation issues as needed.

Attachments (Not shown)

1.- Directory of Police and Fire Stations and resources.

2.- Inventory of Police and Fire Service means of communications

3.- Air evacuation plan

END OF PROCEDURE

Saint Lucia National Emergency Management Plan
Saint Lucia National Earthquake Response Plan
Emergency Procedure EP-350 Shelter Management

Version

Version 1. December 11th, 2002.

Objectives

To activate, operate and deactivate shelters in Saint Lucia in the case of a disaster caused by an earthquake.

Responsible for the Procedure:

Main:

Chairperson of the Shelter Management Disaster Committee: Chief Education Officer. Ministry of Education.

Secondary:

Deputy Chairperson. Education Officer. Ministry of Education.

Members of the Committee:

School Principals
Teachers Union
Religious Organisations in Saint Lucia
Managers Community Centres

Steps of the Procedure.

A.- The Chairperson of the Shelter Management Committee shall:

Permanent:

- 1.- Receive from NEMO, the list of shelters updated yearly before May 31st after the yearly physical inspection of shelters by the Ministry of Works.

- 2.- Distribute the list of shelters to all shelter managers from all shelters mentioned in the list: schools, churches, etc.
- 3.- Ensure, jointly with NEMO, that the list of shelters is published in the Gazette annually.
- 4.- Promote and ensure that schools and other buildings designated as shelters are retrofitted when needed in order to remain secure and considered as shelters.
- 5.- Have a list of personnel responsible for each shelter (shelter managers): school principals, social organisations, churches, etc., permanently updated and ready before May 31st every year including names, phone numbers and addresses of shelter managers and deputies.
- 6.- Design, and or revise and update, a map of Saint Lucia showing location of shelters all over the country to be used permanently for planning purposes and to be used in the EOC.
- 7.- Ensure that the personnel responsible for shelter activation and operations is trained in shelter management.
- 8.- Maintain permanent contact with NEMO, Police and with District Committee Chairpersons to plan the operations of shelters, particularly regarding activation after evacuation, security and deactivation.
- 9.- Maintain permanent contact with the Health, the Welfare, the Damage Assessment and Needs Analysis and the Supply Management Committees to plan the operations of shelters, particularly regarding damage to shelters and needs of the sheltered population.
- 10.- Submit, before May 31st every year, the list/directory of personnel responsible for shelter management to NEMO.
- 11.- Have at least one meeting before May 31st each year with all the members of the Committee to revise plan and procedures, resources, inventories, directories and supplies for shelter management and ensure that all members, shelters and shelter managers are ready.

After the Impact:

- 12.- When the EOC is activated, inform all the members of the Committee.
- 13.- Prepare all the information to be brought to the EOC if it is activated (maps, forms, inventories, directories, list of shelters and personnel responsible for their activation and operations, etc.)

- 14.- Go to the EOC.
- 15.- Report to the EOC Chairperson.
- 16.- Assist in setting up the EOC
- 17.- Ensure, along with the Ministry of Works, that within 48 hours after the impact of the earthquake, all shelters are re-certified as fit for use and submit revised list to NEMO.
- 18.- Ensure that the EOC is briefed about shelter management matters if a member of the Committee or of the Ministry of Education participated in the aerial damage assessment.
- 19.- In case evacuation of endangered/damaged areas is needed, assist the EOC by informing about shelters availability and capacity.
- 20.- Notify immediately, directly or through the Ministry of Education, the personnel responsible for activating the shelters that they have to be activated immediately to receive population from evacuated areas.
- 21.- Co-ordinate with NEMO and the Chairperson of the Information Disaster Committee, to ensure that the District Disaster Committees are notified about the activation of shelters and that the population in general is notified through Media broadcast about this situation, particularly those from endangered/affected areas that have to be evacuated.
- 22.- Co-ordinate with the Health and Welfare and the Supply Management Committees' Chairpersons regarding any needs in the activated shelters.
- 23.- Always inform the Damage Assessment and Needs Analysis Committee Chairperson about damage and needs in shelters.
- 24.- Co-ordinate with the Police for any security problems that may arise in the shelters.
- 25.- Co-ordinate with the Damage Assessment and Needs Analysis and the Transportation Committees' Chairpersons, the Police and NEMO in the case where areas where already-activated shelters are in danger and have to be evacuated. Indicate possible alternate shelters and their capacities, so evacuation can be planned and conducted.
- 26.- Prepare reports at least every 12 hours and when needed in the EOC about the operation of the shelters.

- 27.- Deactivate (and activate) shelters only when it is decided with NEMO and the rest of the EOC members involved.
- 29.- After 12 hours of activation of the EOC, leave the EOC and be substituted by the Deputy Chairperson of the Shelter Committee.
- 30.- Return 12 hours later to the EOC and substitute for the Deputy Chairperson.
- 31.- Always brief and be briefed by the Deputy Chairperson of the Shelter Management Committee when arriving or leaving the EOC.
- 32.- After the EOC is deactivated, prepare a final report and send it to NEMO; participate in the rehabilitation/reconstruction 'Task Force' that would remain in NEMO Headquarters if needed.
- 33.- Participate, as needed, in the reconstruction process to ensure that mitigation measures are included in buildings that are considered as shelters.
- 34.- Revise and update this procedure.

B.- The Deputy Chairperson of the Shelter Management Committee shall:

Permanent:

- 1.- Assist the Chairperson in his/her tasks regarding this procedure and the National Earthquake Plan.
- 2.- Know the Earthquake Response Plan, its procedures and his/her role in it and during an emergency or disaster, particularly his/her activities regarding shelter management.
- 3.- Participate in simulation exercises that test this procedure.

After the Impact:

- 4.- If the EOC is activated, maintain communication with the Chairperson and assist him/her in any shelter management matters as needed.
- 5.- Substitute for the Chairperson in the EOC every 12 hours after the EOC activation.

Attachments (Not shown).

- 1.- Directory of personnel responsible to activate and run shelters.
- 2.- List of shelters including phone number, address and capacity.
- 3.- Saint Lucia map showing location of shelters and capacity of each shelter.
- 4.- Format for Shelter Managers

END OF PROCEDURE

Saint Lucia National Emergency Management Plan
Saint Lucia National Earthquake Response Plan

Emergency Procedure EP-400 Land Search and Rescue

Version.

Version 1. December 11th , 2002.

Objectives.

To search for, and rescue personnel and their belongings, missing, lost or affected on land due to the earthquake effects.

Responsible for the Procedure.

Main:

Chief Fire Officer. Saint Lucia Fire Service.

Secondary:

Police Force Deputy Commissioner or Nominee by the Commissioner of Police.

Steps of the Procedure.

A.- The Chief Fire Officer shall:

Permanent:

1.- Formulate comprehensive search and rescue plans, training programmes and simulations to cope with:

Search and rescue of trapped persons to include:

Vehicle extraction

Rescue from collapsed buildings

High angle rescue

Rescue under toxic conditions

First aid treatment for disaster victims

Triage and hospital evacuation of victims

Incident Command System

After the Impact:

- 2.- If the EOC is activated, ensure that all vehicles and equipment that would be used in search and rescue operations are in good condition and ready to be used as needed.
- 3.- Go to the EOC.
- 4- Report to the EOC Chairperson.
- 5.- Be informed of the need of land search and rescue in specific areas or buildings.
- 6.- Deploy fire service personnel, equipment and vehicles to co-ordinate and execute search and rescue activities where needed.
- 7.- Provide the on-scene commander for search and rescue, and fire fighting operations.
- 8.- Request assistance from the Chairperson of the Transportation Committee, and the Chairperson of the Works and Rehabilitation Committee when transportation, heavy equipment and/or drivers are needed to conduct the search and rescue operations.
- 9.- Co-ordinate with the Police Force and the Health and the Welfare Committees' Chairpersons in search and rescue operations.
- 10.- Provide assistance, if needed, to the Police in the case of maritime search and rescue.
- 11- After 12 hours be substituted by the Deputy Chief Fire Officer.
- 12.- Return after 12 hours.
- 13.- After the EOC is deactivated, prepare a final report of the Fire Service activities and send it to NEMO.

B.- The Deputy Commissioner of Police or Nominee by the Commissioner of Police shall:

Permanent:

- 1.- Assist the Chief Fire Officer in his tasks regarding this procedure and the National Earthquake Response Plan.
- 2.- Know the Earthquake Response Plan, its procedures and his role in it, and during an emergency or disaster, particularly his activities and responsibilities regarding search and rescue.

3.- Participate in simulation exercises that test this procedure and/or Police Force within the National Earthquake Response Plan.

4.- Work jointly with the Chief Fire Officer in order to identify and optimise resources that would be used in search and rescue in the case of an emergency or a disaster.

After the Impact:

5.- If the EOC is activated, establish communication, directly or indirectly through the Police Commissioner in the EOC, with the Chief Fire Officer and assist him with Police resources in land search and rescue matters as needed.

Attachments. (Not shown).

1.- Land Search and Rescue Plan.

1.- Directory of trained personnel for land search and rescue.

2.- Inventory of search and rescue equipment.

END OF PROCEDURE

Saint Lucia National Emergency Management Plan
Saint Lucia National Earthquake Response Plan

Emergency Procedure EP-450 Security

Version

Version 1. December 11th, 2002.

Objectives

To provide security for the population, for their belongings, for public key infrastructure and for response teams in specific areas endangered or affected by earthquakes.

Responsible for the Procedure:

Main:

Commissioner of Police. Royal Saint Lucia Police Force

Secondary:

Deputy Commissioner of Police. Royal Saint Lucia Police Force

Steps of the Procedure.

A.- The Commissioner of Police. Of the Royal Saint Lucia Police Force shall:

Permanent:

1.- Identify, with the assistance of NEMO, all the areas, infrastructure, buildings and activities in Saint Lucia that are likely to need security in the case of an emergency or a disaster; these may include:

- EOCs
- Key governmental buildings
- Hospitals
- Affected and/or evacuated areas
- Shelters
- Airports and seaports
- Prison

After the Impact:

- 2.- If the EOC is activated, go to the EOC with equipment and information needed.
- 3.- Report to the EOC Chairperson.
- 4.- Send four policemen, or as many as needed, to the EOC for security purposes. Change the policemen every 12 hours until the EOC is deactivated.
- 5.- Be briefed by the security personnel every 12 hours in the EOC.
- 6.- Change the security personnel in the EOC every 12 hours until the EOC deactivation.
- 7.- Be informed of the need for security in specific areas or buildings.
- 8.- Deploy police personnel and vehicles (or boats) to co-ordinate security activities.
- 9.- Deploy personnel to control traffic in critical areas where traffic is causing trouble due to the effects of the earthquake.
- 10.- Request assistance from the Chairperson of the Transportation Committee when transportation and/or drivers are needed to conduct the evacuation process.
- 11.- Provide security in Shelters as needed and in co-ordination with district committees and the shelter management committee.
- 12.- Provide security in specific buildings as needed: hospitals, government buildings and any other that had been affected and/or whose assets are endangered.
- 13.- Provide security in airports and seaports particularly in the case of damage, evacuation and/reception of goods and supplies from overseas.
- 14.- Deploy police personnel for crowd control if needed.
- 15.- Deploy police personnel to prevent and avoid looting in specific areas as needed.
- 16.- In the case of casualties (deaths), provide security to areas where bodies are being collected and co-ordinate with the Ministry of Health and the Transportation Committee for subsequent actions.

17.- Establish co-ordination with the CDRU, the RSS or any other military forces that arrive in the country.

18.- Deploy SSU personnel as needed, when needed for specific cases that demand the SSU attention.

19- After 12 hours be substituted by the Deputy Commissioner of Police.

20.- Return after 12 hours.

21.- After the EOC is deactivated, prepare a final report of the Police Force activities and send it to NEMO.

B.- The Deputy Commissioner of the Royal Saint Lucia Police Force shall:

Permanent:

1.- Assist the Police Commissioner in his tasks regarding this procedure and the National Earthquake Response Plan.

2.- Know the Earthquake Response Plan, its procedures and his role in it, and during an emergency or disaster, particularly his activities regarding security.

3.- Participate in simulation exercises that test this procedure and/or Police Force within the National Earthquake Response Plan.

After the Impact:

4.- If the EOC is activated, maintain communication with the Police Commissioner and assist him in any security matters as needed.

5.- Substitute for the Police Commissioner in the EOC every 12 hours after the EOC activation.

Attachments (not shown)

1.- List of key buildings/locations likely to need security after the impact of an earthquake.

END OF PROCEDURE

Saint Lucia National Emergency Management Plan
Saint Lucia National Earthquake Response Plan
Emergency Procedure EP-500 Medical Attention

Version

Version 1. December 11th, 2002.

Objectives

To provide medical services and attention for the affected population after a disaster after an earthquake.

Responsible for the Procedure:

Main:

The Chief Medical Officer. Ministry of Health.

Secondary:

Medical Officer appointed by the Chief Medical Officer.

Steps of the Procedure.

A.- The Chief Medical Officer shall:

Permanent:

- 1.- Revise and update this procedure at least once a year and always after a simulation exercise and a real event.
- 2.- Keep an updated directory of hospitals and clinics in Saint Lucia.
- 3.- Keep an inventory of resources for medical attention in Saint Lucia: hospitals, clinics and capacity, doctors, ambulances, etc.
- 4.- Meet regularly with the Health Sector to improve the Ministry of Health Response Plan and this procedure and improve mechanisms for medical attention of injured personnel in disasters particularly for earthquakes.

- 5.- Identify human resources in the country for medical attention (physical and mental health). Establish co-ordination mechanisms in the case of a response during a disaster.
- 6.- Ensure that specific emergency response plans are written for hospitals and for mass casualty management.
- 7.- Ensure that, in co-ordination with NEMO and the Ministry of Health, training is provided to create mass casualty management teams in the country.
- 8.- Maintain contact with regional and international organisations to get assistance for training and emergency planning in medical attention during disasters.
- 9.- Maintain permanent contact with NEMO, the National Disaster Committees and District Committees to strengthen co-ordination mechanisms for health emergency preparedness, emergency response and disaster relief

After the Impact:

- 10.- If the EOC is activated, prepare all the information needed to be brought to the EOC (the MOH Response Plan, maps, forms, inventories, directories, etc.)
- 11.- Go to the EOC.
- 12.- Report to the EOC Chairperson.
- 13.- Assist in setting up the EOC
- 14.- Participate, if necessary and if there is enough available aerial transportation resources, in the aerial damage assessment and gather information about damage to areas where medical attention facilities are located or where are likely to be needed.
- 15.- Brief the EOC after the Rapid Aerial Damage Assessment if it was necessary for the CMO to fly in the reconnaissance helicopter flight.
- 16.- Establish contact and receive information from the MOH and hospitals and clinics to determine the damage to the health sector.
- 17.- Based on information provided by the MOH, hospitals and clinics, inform the Damage Assessment and Needs Analysis Committee Chairperson about the damage and needs for the Health Sector.

- 18.- Ensure that proper medical attention, physical and mental, is given to all the population traumatised by the impact of the earthquake.
- 19.- Request assistance as needed from the rest of the EOC members, particularly regarding transportation of the injured inside and outside Saint Lucia, road clearing and transportation of medical supplies and resources.
- 20.- In the case of a mass casualty event, establish, as stated in the mass casualty plans, a mass casualty system with the participation of the Police, the Fire Service and other EOC Committees as needed.
- 21.- Co-ordinate with the Police for any security problems that may arise in medical facilities.
- 22.- In the case of international assistance needed, always inform NEMO, MOH, the Ministry of External Affairs representative in the EOC and the Chairpersons of the Committees of Damage Assessment and Needs Analysis and Supply Management.
- 23.- If PAHO or any other international organisations are contacted, and assistance is provided, ensure that the Ministry of External Affairs, the MOH and NEMO are always contacted and informed about PAHO assistance and the entrance into the country.
- 24.- After 12 hours in the EOC leave the EOC and be substituted by the Medical Officer designated.
- 25.- Return 12 hours later to the EOC and substitute for the Medical Officer.
- 26.- Always brief and be briefed by the Medical Officer when arriving and leaving the EOC after every twelve-hour shift.
- 27.- After the EOC is deactivated, prepare a final report and send it to NEMO and participate, if needed, in the rehabilitation/reconstruction 'Task Force' that would remain in NEMO Headquarters.
- 28.- Revise and update this procedure.

B.- The Medical Officer appointed by the Chief Medical Officer shall:

Permanent:

- 1.- Assist the CMO in his/her tasks regarding this procedure and the National Earthquake Response Plan.
- 2.- Know the Earthquake Response Plan, its procedures and his/her role in it and during an emergency or disaster, particularly his activities regarding shelter management.
- 3.- Participate in simulation exercises that test this procedure.
- 4.- Be always a liaison between the Committee and the MOH in order to improve planning and response mechanisms and the optimisation of resources.

After the Impact:

- 5.- If the EOC is activated, maintain communication with the CMO and assist him/her in any medical attention matters and with the co-ordination of resources from the Health Sector.
- 6.- Substitute for the CMO in the EOC every 12 hours after the EOC is activated.

Attachments. (Not Shown)

- 1.- The Ministry of Health Response Plan.
- 2.- Directory of hospitals and clinics in Saint Lucia.
- 3.- List of human resources in the country for medical attention (physical and mental health).
- 4.- Policies and Guidelines for the Adequate Management and Disposal of Dead Bodies in Disasters Saint Lucia .

END OF PROCEDURE

Saint Lucia National Emergency Management Plan
Saint Lucia National Earthquake Response Plan
Emergency Procedure EP-550 Environmental Health

Version

Version 1. December 11th, 2002.

Objectives

To implement environmental health activities after the impact of a disaster caused by an earthquake in Saint Lucia.

Responsible for the Procedure:

Main:

The Chief Medical Officer. Ministry of Health.

Secondary:

The Chief Environmental Health Officer. Ministry of Health.

Steps of the Procedure.

A.- The Chief Medical Officer shall:

Permanent:

- 1.- Revise and update this procedure at least once a year and always after a simulation exercise and a real event.
- 2.- Keep an updated directory of environmental health inspectors
- 3.- Keep an updated inventory of equipment and materials that would be used for environmental health activities in the case of a disaster.
- 4.- Meet regularly with the Committee members to improve this procedure and improve mechanisms for environmental health.

5.- Ensure that specific plans and or specific procedures are written for environmental health activities during a disaster such as: adequate quality and quantity of water supply, food safety, vector control, epidemiological survey and adequate disposal of the dead.

6.- Maintain contact with regional and international organisations to get assistance for training on environmental health issues.

7.- Maintain permanent contact with NEMO, other National Disaster Committees and District Committees to strengthen co-ordination mechanisms for the implementation of environmental health activities in disasters.

8.- Prepare all the information to be brought to the EOC if it is activated (maps, forms, inventories, directories, etc.)

After the Impact:

9.- If the EOC is activated ensure that personnel responsible for environmental health is notified immediately of the situation in order to have everything ready to respond when and where needed.

10.- Go to the EOC.

11.- Report to the EOC Chairperson.

12.- Assist in setting up the EOC.

13.- Participate, if necessary and if there is enough available aerial transportation resources, in the aerial damage assessment and gather information about damage to areas where environmental health measures could be needed.

14.- Brief the EOC after the Rapid Aerial Damage Assessment if it was necessary to participate in the aerial damage assessment.

15.- Establish contact and receive information from the Chairperson of the Damage Assessment and Needs Analysis Committee, MOH and hospitals and clinics and from the Chief Environmental Health Officer to determine the damage and needs to the health sector and to critical infrastructure that would determine environmental health intervention (water supply, food sector, waste disposal).

16.- Maintain contact and co-ordination with NEMO, the Health Sector, the District Committees and the rest of the EOC members to determine areas where environmental health action has to be taken.

17.- Ensure the adequate quality and quantity of water supply is provided to the population. Co-ordinate with the Members of the EOC and PEOC as needed.

18.- Ensure that food safety measures are taken in food distribution sites, shelters and ports of entry. Co-ordinate with the members of the EOC and PEOC as needed.

19.- Ensure that the garbage and debris collection and disposal is not interrupted by the authorities (Saint Lucia Solid Waste Management Authority) and that it is increased and focused on critical areas: shelters, roads, ports of entry, collapsed buildings, etc). Co-ordinate with the rest of the members of the EOC, the PEOC and others as needed.

20.- Ensure that vector control activities (mosquitoes, rodent and others) is done in areas where needed. Co-ordinate with the rest of the members of the EOC and the PEOC as needed.

21.- Establish/increase epidemiological surveillance activities, particularly in shelters and other places with large concentration of displaced population. Co-ordinate with the rest of the members of the EOC and the PEOC as needed.

22.- Co-ordinate with the rest of the members of the EOC and the PEOC as needed, particularly with Police, Transportation Committee and Information Committee for the adequate handling (sanitary) of dead bodies (collection, storage, transportation, identification, delivery to next of kin and final disposal).

23.- Co-ordinate with the Information Committee to ensure that adequate and veracious information regarding dead bodies is disseminated in order to avoid false rumours about epidemics.

24.- At all times consult with the Chief Environmental Health Officer MOH as needed.

26.- In the case of international assistance needed, always inform NEMO, MOH, the Ministry of External Affairs representative in the EOC and the Chairpersons of the Committees of Damage Assessment and Needs Analysis and Supply Management.

27.- If PAHO or any other international organisations are contacted, and assistance is provided, ensure that the Foreign Ministry, the MOH and NEMO are always contacted and informed about PAHO assistance and the entrance of it to the country (environmental health experts, vector

control equipment, rodenticides, pesticides, water testing kits, personal protection equipment, water, chlorine tablets, etc.)

28.- After 12 hours in the EOC leave the EOC and be substituted by the Medical Officer designated.

29.- Return 12 hours later to the EOC and substitute for the designated Medical Officer in the EOC.

30.- Always brief and be briefed by the Medical Officer designated when arriving or leaving the EOC after every twelve-hour shift.

31.- After the EOC is deactivated, prepare a final report and send it to NEMO and participate, if needed, in the rehabilitation/reconstruction 'Task Force' that would remain in NEMO Headquarters.

32.- Participate, as needed, in the reconstruction process to ensure that environmental health measures are implemented.

33.- Revise and update this procedure.

B.- The Chief Environmental Health Officer shall:

Permanent:

1.- Assist the CMO in his tasks regarding this procedure and the National Earthquake Response Plan.

2.- Know the Earthquake Response Plan, its procedures and his/her role in it and during an emergency or disaster, particularly his activities regarding environmental health.

3.- Participate in simulation exercises that test this procedure.

4.- Ensure that training is provided to environmental health officers and that materials and equipment are in good working condition.

After the Impact:

5.- If the EOC is activated, maintain communication with the CMO and assist him/her in any environmental health matters.

6.- Co-ordinate the environmental health flow of information, and the response, from the Health Sector always in co-ordination with the CMO in the EOC.

7.- Request information or resources to the CMO in the EOC as needed for the better implementation of environmental health measures after the earthquake impact.

8.- Prepare reports as needed from the EOC including a final report with recommendations to follow even if the EOC is deactivated.

Attachments (Not shown)

1.- Directory of environmental health inspectors/officers.

2.- Inventory of resources for environmental health activities in Saint Lucia.

3.- Policies and Guidelines for the Adequate Management of Dead Bodies in Disasters in Saint Lucia.

END OF PROCEDURE

Saint Lucia National Emergency Management Plan
Saint Lucia National Earthquake Response Plan

Emergency Procedure EP-600 Damage Assessment and Needs Analysis

Version

Version 1. December 11th, 2002.

Objectives

To assess damage in Saint Lucia after the impact of an earthquake in terms of elements damaged and cost estimate to determine type and amount of assistance needed for relief, rehabilitation and reconstruction.

Responsible for the Procedure:

Main:

Chairperson of the Damage Assessment and Needs Analysis Disaster Committee.

Secondary:

Deputy Chairperson Damage Assessment and Needs Analysis Disaster Committee.

Steps of the Procedure.

A.- The Chairperson of the Committee shall:

Permanent:

- 1.- Revise and update this procedure and its attachments at least once a year and always after a simulation exercise and a real event.
- 2.- Keep an updated directory of damage assessment teams' members.
- 3.- Meet regularly with the Committee members to improve this procedure and improve mechanisms for damage assessment:
 - Director of Meteorological Services
 - Ministry of Agriculture
 - Rep. Department of Statistics

Rep Banana companies/WIBDECO
Chamber of Commerce
Ministry of Works
Ministry of Health
Ministry of Education
Telecommunication Companies
WASCO
LUCELEC.
Construction and Engineering Associations, Architects and Quantity Surveyors.

4.- Maintain permanent contact with NEMO, other National Disaster Committees and District Committees to strengthen co-ordination mechanisms for damage assessment.

After the Impact:

5.- If the EOC is activated, inform all the members of the Committee and prepare all the information to be brought to the EOC (maps, damage assessment evaluation forms, directories, etc.)

6.- Go to the EOC

7.- Report to the EOC Chairperson.

8.- Assist in setting up the EOC

9.- Participate in the Initial Aerial Damage Assessment to gather information about areas damages due to the earthquake impact.

10.- Brief the EOC after the Initial Aerial Damage Assessment in order to know the situation and establish priorities.

11.- Dispatch damage assessment teams to assess specific damage in priority areas.

12.- Request information from the private sector (LUCELEC, WASCO and Cable and Wireless), via PEOC, about damage to utilities: water supply (intakes, pipes, tanks) and sewage systems, Roseau dam, telephone poles and lines.

13.- Request and receive information from the Works/Rehabilitation Disaster Committee Chairperson about damage to roads and bridges.

14.- Request and receive information from the Ministry of Agriculture about damage to crops, fisheries and livestock.

15.- Request and receive information from the Health and Welfare Disaster Committee Chairperson about damage to the health sector (hospitals, clinics, equipment, medicines.)

16.- Request and receive information from SLASPLA about damage assessment to air and seaports.

17.- Request and receive information from the Tourism Sector about damage to buildings and infrastructure and from the cultural sector (National Trust, Historic Society, Folk Research Centre, National Archives), education and Ministry of the Environment when protocols are in place.

18.- Request and receive from the rest of the EOC members and the District Disaster Committees information about damage assessment.

19.- Prepare a damage assessment report every 12 hours or earlier if needed for the EOC or the Prime Minister.

20.- Assist the Chairperson of the Supply Management Disaster Committee, the EOC Chairperson and NEMO in writing the needs list for Saint Lucia.

21.- After 12 hours in the EOC leave the EOC and be substituted by the Deputy Chairperson of the Committee.

22.- Return 12 hours later to the EOC and substitute for the Deputy Chairperson.

23.- Always brief and be briefed by the Deputy Chairperson when arriving or leaving the EOC in every 12-hour shift.

24.- After the EOC is deactivated, prepare a final report and send it to NEMO and participate, if needed, in the rehabilitation/reconstruction 'Task Force' that would remain in NEMO Headquarters.

25.- Participate, as needed, in the reconstruction process to advise, where possible, whether mitigation measures are included in buildings that are considered as shelters.

26.- Revise and update this procedure.

B.- The Deputy Chairperson of the Committee shall:

Permanent:

- 1.- Assist the Chairperson in his tasks regarding this procedure and the National Earthquake Response Plan.
- 2.- Know the Earthquake Response Plan, its procedures and his/her role in it and during an emergency or disaster, particularly his activities regarding damage assessment.
- 3.- Participate in simulation exercises that test this procedure.

After the Impact:

- 4.- If the EOC is activated, maintain communication with the Chairperson and assist him/her in any medical attention matters.
- 5.- After 12 hours of activation of the EOC substitute for the Chairperson in the EOC.
- 6.- Be substituted every 12 hours by the Chairperson.
- 7.- Assist the Chairperson in the preparation of the final damage assessment report.

Attachments (Not shown).

- 1.- Directory of damage assessment teams.
- 2.- Damage assessment evaluation forms.

END OF PROCEDURE

Saint Lucia National Emergency Management Plan
Saint Lucia National Earthquake Response Plan
Emergency Procedure EP-650 External Assistance

Version

Version 1. December 11th, 2002.

Objectives

To take care of all affairs that demand contact with other countries and sub-regional, regional and international organisations by being the only official channel for the Government of Saint Lucia for the offer, request and receipt of information and donations during a disaster in the country caused by an earthquake.

Responsible for the Procedure:

Main:

Permanent Secretary. Ministry of External Affairs.

Secondary:

Deputy Permanent Secretary. Ministry of External Affairs.

Steps of the Procedure.

A.- The Permanent Secretary of the Ministry of External Affairs shall:

Permanent:

- 1.- Revise and update this procedure and its attachments at least once a year and always after a simulation exercise and a real event.
- 2.- Keep an updated directory of External Ministries from other countries, and from sub-regional, regional and international organisations and agencies involved in disaster response and relief.
- 3.- Keep an updated directory of external embassies and regional, sub-regional and international organisations and companies that have external personnel working and living in Saint Lucia.

- 4.- Maintain a list of Saint Lucia Offices overseas.
- 5.- Maintain permanent contact with NEMO, other National Disaster Committees and District Disaster Committees to strengthen co-ordination mechanisms for international assistance.
- 6.- Define with NEMO and the Disaster Committees' Chairpersons of Damage Assessment and Needs Analysis, Supply Management and Information the mechanisms for information to the international community and for the request and receipt of donations in the case of a disaster.
- 7.- Inform other countries and sub-regional, regional and international organisations about these mechanisms and about the channels to follow for information and the offer, request and receipt of international assistance in Saint Lucia.
- 8.- Ensure that all the NEOC members know that the Ministry of External Affairs is the only official channel for the Government of Saint Lucia for the offer, request and receipt of information and donations during and after a disaster in the country.
- 9.- Ensure that all the NEOC members know that they have to inform the Ministry of External Affairs in the NEOC about any issue or communications regarding the offer, request and receipt of foreign assistance.
- 10.- Determine the chairperson, members, location, means of communications and other equipment and materials for the International Emergency Operations Centre in Saint Lucia (IEOC), that will be in charge of the attention of all representatives and members of external regional, sub-regional and international organisations that are, or arrive in the country for the purpose of offering or bringing international assistance in the case of a disaster in Saint Lucia.
- 11.- Designate and inform NEMO of the liaison to the NEOC

After the Impact:

- 12.- If the NEOC is activated, determine, jointly with NEMO and with the rest of the NEOC members, if the IEOC has to be activated.
- 13.- If the IEOC is activated ensure it contacts the External Embassies and regional, sub-regional and international organisations in the country to inform them about the situation and to remind them about the measures for the protection of their personnel and their property and the mechanisms for the offer, request and receipt of international assistance. They have to be informed as well that the Ministry of External Affairs is the Ministry that will deal with them regarding information about the disaster and about foreign citizens in the country in a disaster after an earthquake.

- 14.- If the NEOC is activated, go to the NEOC.
- 15.- Report to the NEOC Chairperson. Inform him/her about the activation of the IEOC.
- 16.- Assist in setting up the NEOC. Ensure that there is communication between the NEOC and the IEOC.
- 17.- Assist the NEOC Chairperson and members in any issue that involves external issues.
- 18.- Maintain contact with the Chairperson of the Damage Assessment and Needs Analysis Committee to be informed about the damage assessment situation.
- 19.- Jointly with NEMO, the Chairpersons of the Committees of Damage Assessment and Needs Analysis and Supply Management and other NEOC members as needed, write the needs list of Saint Lucia and agree on the mechanisms to follow for its request, and on the organisations to be contacted.
- 20.- Jointly with NEMO, the Chairperson of the Information Committee and other NEOC members as needed, participate in the preparation of any official statement that would be broadcast overseas or sent officially to International, Regional or Sub-regional organisations and agencies.
- 21.- Be informed of any communication from or to other countries, and from and to any international, regional and sub-regional organisation regarding the disaster situation and the request and receipt of international assistance.
- 22.- Maintain permanent contact with the IEOC and ensure that any international organisations arriving go and stay in the IEOC. Be informed about their purpose and inform the NEOC.
- 23.- Be informed by the Supply Management Committee Chairperson and by the IEOC about any international assistance that arrives in the country. Always inform the NEOC Chairperson and the NEOC members.
- 24.- Ensure, along with NEMO and the Supply Management Committee Chairperson, that a follow up is given to the needs list and to the official request for international assistance.
- 25.- Ensure, along with NEMO, the Comptroller of Customs, the Supply Management Committee Chairperson, the Police and SLASPA, that no un-requested supplies are received and accepted into the country. Ensure that they are not received and taken back by the country or organisation that intended to bring them into the country.

26.- After 12 hours in the NEOC leave the NEOC and be substituted by the Deputy Chairperson of the Committee.

27.- Return 12 hours later to the NEOC and substitute for the Deputy Chairperson.

28.- Always brief and be briefed by the Deputy Chairperson when arriving or leaving the NEOC in every 12-hour shift.

29.- Ensure that the IEOC has 12-hour shifts for its chairpersons and members.

30.- Always brief and be briefed by the chairperson in the IEOC before each shift.

31.- After the NEOC is deactivated, prepare a final report and send it to NEMO and participate, if needed, in the rehabilitation/reconstruction Task Force that would remain in NEMO Headquarters.

32.- Participate, as needed, in the reconstruction process particularly in matters regarding foreign assistance. Always be informed of the results and impact of the assistance received.

33.- Revise and update this procedure.

B.- The Deputy Permanent Secretary of the Ministry of External Affairs shall:

Permanent:

1.- Assist the Chairperson in his tasks regarding this procedure and the National Earthquake Response Plan.

2.- Know the Earthquake Response Plan, its procedures and his/her role in it and during an emergency or disaster, particularly his activities regarding foreign assistance.

3.- Participate in simulation exercises that test this procedure.

After the Impact:

4.- if the NEOC is activated, maintain communication with the Chairperson and assist him/her in any matters related to external affairs.

5.- After 12 hours of activation of the NEOC substitute for the Chairperson in the NEOC.

- 6.- Be substituted every 12 hours by the Chairperson.
- 7.- Assist the Chairperson in the preparation of the final report.

Attachments (Not shown)

- 1.- Directory of sub-regional, regional and international organisations and agencies, involved in disaster response and relief.
- 2.- Directory of Embassies and regional, sub-regional and international organisations and companies that have foreign personnel working and living in Saint Lucia.
- 3.- Description, location, means of communications and other equipment and materials, names of chairperson and members of the International Emergency Operations Centre in Saint Lucia (IEOC.)
- 4.- Draft “Role of Foreign Affairs in Disasters” PAHO.
- 5.- Policies and Guidelines for the Adequate Management and Disposal of Dead Bodies in Disasters in Saint Lucia.

END OF PROCEDURE

Saint Lucia National Emergency Management Plan
Saint Lucia National Earthquake Response Plan
Emergency Procedure EP-700 Supply Management

Version

Version 1. December 11th, 2002.

Objectives

To manage (receipt, storage, sorting, transportation and distribution) of relief supplies (national and foreign) after a disaster caused by an earthquake.

Responsible for the Procedure:

Main:

Chairperson of the Supply Management Disaster Committee.

Secondary:

- Deputy Chairperson: Representative of Social Groups
- Committee Members:
 - Deputy Chairperson: Representative of Social Groups
 - Saint Lucia Rotary Clubs
 - Saint Lucia Red Cross
 - Kiwanis Club
 - Toast Masters Club
 - Optimist Club
 - Lion's Club
 - Adventist Development and Relief Agency
 - CARITAS Antilles
 - Salvation Army
 - Saint Lucia Boy Scouts
 - Saint Lucia Girl Guides
 - Saint Lucia Cadet Corps
 - Supplies Officer, Ministry of Trade
 - Customs and Excise Department
 - WASCO

Rep- Ministry of Social Transformation, Culture and Local Government

Chamber of Commerce

Tourism Sector

Rotarak Club

Leo Clubs

Food companies (JQ's and Julien's)

- NEOC members

Steps of the Procedure.

A.- The Chairperson of the Committee shall:

Permanent:

1.- Meet regularly with all the members to:

Assign roles and responsibilities and identify activities regarding supplies and supply management.

Identify possible needs for the population after a disaster.

Identify sources of supplies and suppliers (national [governmental and private for food and water], regional [CDERA, ECDG] and international [PAHO, Red Cross, ADRA, etc.]

Establish and agree on communications and co-ordination mechanisms for supply management and donations in the case of a disaster.

2.- Co-ordinate with the Damage Assessment and Needs Analysis Committee to establish mechanisms for the determination of needs in the case of a disaster.

3.- Co-ordinate with NEMO and the Ministry of External Affairs for the request, receipt, storage and distribution of supplies coming from other countries and from Regional and International Organisations.

4.- Establish and ensure a SUMA/RSTS Team is formed and trained in the country. Establish co-ordination Mechanisms with NEMO in accordance with PAHO and CDERA guidelines.

5.- Keep an updated directory of all the members of the committee, their roles and the kind of assistance they will provide in the case of a disaster (manpower, donations, water supply, food supply, etc.).

6.- Provide NEMO with a copy of the directory every year.

7.- To conduct an annual audit of the District Committee resources and to provide a written report to the Director of NEMO by May 31st each year.

8.- Ensure the Red Cross maintains the mechanisms for the relief supply for the first 72 hours after the disaster.

After the Impact:

10.- If the NEOC is activated, go to the NEOC.

11.- Assist in setting up the NEOC.

12.- Maintain contact with the Committee members and with the Private Sector NEOC.

13.- Establish permanent communication with the Chairperson of the Damage Assessment Committee to determine the needs of the country based on the assessment of damage to identify specific needs in specific areas.

14.- Establish permanent communication with the Chairperson of the Shelter Management Committee to identify needs in shelters and with District Committees to find out their needs.

15.- Based on the damage assessment reports prepare the needs report identifying what supplies are needed, what supplies can be provided from internal sources and what can be provided by regional and international sources.

16.- In contact with the National Committees' members the District Committees and with the NEOC members, manage the distribution of supplies where they are needed.

17.- If transportation is required for the management of supplies, request the assistance of the Transportation Committee Chairperson.

18.- Consult with the NEOC Chairperson and with the rest of the NEOC members about the needs list and prepare the final version to be distributed to NEMO Director, the Permanent Secretary of the Prime Minister's Office, the Prime Minister and the Ministry of Foreign Affairs.

19.- Depending on the needs that are to be requested and received from regional and international sources, decide, after consultation with the NEOC, if the SUMA team is to be activated or if a SUMA team would be needed from PAHO.

20.- After the first 72 hours after the disaster relieve the Red Cross and ensure that disaster relief continues being provided by the Committee.

21.- Prepare a final report after the NEOC has been deactivated.

B.- The Deputy Chairperson of the Committee shall:

Permanent:

- 1.- Assist the Chairperson in all his/her tasks before during and after the impact of an earthquake.
- 2.- Participate in the Committee meetings.
- 3.- Assist the Chairperson with the follow up of the members activities for the identification and implementation of mechanisms for the management of supplies during disasters.

After the Impact:

- 6.- Assist the Chairperson in the co-ordination of the members of the committee in the management of supplies after a disaster.
- 7.- Assist the Chairperson in the preparation of the final report regarding supply management.

C.- Members of the Committee.

Permanent:

- 1.- Meet regularly within the Committee to:
 - Assign of roles and responsibilities and identify activities regarding supplies and supply management.
 - Identify possible needs for the population after a disaster.
 - Identify sources of supplies and suppliers (national [governmental and private for food and water], regional [CDERA, ECDG] and international [PAHO, Red Cross, CARITAS, ADRA, etc.]
 - Establish and agree on communications and co-ordination mechanisms for supply management and donations in the case of a disaster.
 - Offer the Committee and the Chairperson their own resources in the case of a disaster (manpower, food, water, etc.)
 - Sign MOUs with ship-owners (Food, gas, etc.)

After the impact:

- 2.- If the NEOC and the PEOC are activated, send representative, when applicable, to the PEOC.
- 3.- Maintain communications with the PEOC and from it to the National NEOC.
- 4.- Provide supplies wherever they are needed and as requested from the PEOC and the NEOC.
- 5.- Inform the PEOC and the NEOC about any problems needed for the delivery of supplies (transportation, drivers, personnel, roads blocked, etc.) so they can be solved by the PEOC and/or the NEOC.

C.- NEOC Members.

After the Impact:

- 1.- Provide information to the Chairperson of the Supply Management Committee regarding needs. At all times indicate type of supplies, location where needed and amount needed.

Attachments (Not shown).

- 1.- Directory of Committee Members and List of Resources Committed by Members .
- 2.- Directory of Regional and International Organisations and type of assistance they provide in disasters.
- 3.- Donations and Importation of Relief Supplies Policy.

END OF PROCEDURE

Saint Lucia National Emergency Management Plan
Saint Lucia National Earthquake Response Plan
Emergency Procedure EP-750 Public Information

Version

Version 1. December 11th, 2002.

Objectives

To disseminate information, in English and Creole, for the people of Saint Lucia and, when needed, for the rest of the world, through the Media or through the PM or any other government official authorised to do so, to report about the impact of earthquakes in Saint Lucia, damage caused, measures taken by the government and results, and measures to be taken by the population to protect their lives and property.

Responsible for the Procedure:

Main:

The Director of Information Services. The Government Information Service.

Secondary:

The Principal Information Officer. The Government Information Service.

Steps of the Procedure.

A.- The Director of Information Services shall:

Permanent:

- 1.- Revise and update this procedure and its attachments at least once a year and always after a simulation exercise and a real event.
- 2.- Design, produce and conduct and evaluate a national public awareness campaign to increase the population's awareness about earthquakes that can impact Saint Lucia and about the measures the population has to take to protect their lives and belongings.

3.- Provide training to Committees on interacting with the media and on the conducting of a Public Relations/Education campaign.

4.- Establish and improve permanently, with NEMO and the Media, mechanisms for the dissemination of governmental information in the case of emergency and disasters.

After the impact:

5.- If the EOC is activated, go to the EOC.

6.- Report to the EOC Chairperson.

7.- Assist in setting up the EOC.

8.- Ensure that there is communication between the EOC and the Media. Check the emergency broadcast system: check the emergency telephone hotlines.

9.- Ensure that the re-certified shelters list is given blanket coverage in the media.

10.- Prepare an immediate report about the situation with information provided by the SRU to NEMO and the initial damage reports as well as information to the public to avoid rumours and protect their lives and property.

11.- Immediately after the initial assessment team (NEMO, Damage Assessment and Works Committees) briefs the EOC, prepare an initial report to be sent to the Media including: hazard characteristics, damage assessment, initial response and results, and recommendations for the population.

12.- With information from NEMO, the Damage Assessment Committee, the Supply Management Committee and the rest of the EOC members as needed, prepare and update a report every 6 hours after the initial report for the media.

13.- Maintain permanent contact with the members of the Media. Request updated information from the EOC Chairperson, NEMO and the rest of the EOC members as needed.

14.- Get the approval and consensus of the EOC before the broadcast of every six-hour report and before sending the PM's address to the Nation.

15.- Prepare the text of the Prime Minister's Address to the Nation when requested by the EOC.

16.- Inform the EOC about any special request of information from the media or the PM.

17.- After 12 hours in the EOC leave the EOC and be substituted by the Deputy Chairperson of the Information Committee.

18.- Return 12 hours later to the EOC and substitute for the Deputy Chairperson.

19.- Consult on press releases of the Ministry for External Affairs/IEOC and the Ministry of Tourism/CMC.

20.- Always brief and be briefed by the Deputy Chairperson when arriving or leaving the EOC in every 12-hour shift.

21.- After the EOC is deactivated, prepare a final report to be disseminated. Send a copy to NEMO to be included in the Plan.

22.- Revise and update this procedure.

B.- The Principal Information Officer shall:

Permanent:

1.- Assist the Chairperson in his tasks regarding this procedure and the National Earthquake Response Plan.

2.- Know the Earthquake Response Plan, its procedures and his/her role in it and during an emergency or disaster, particularly his activities regarding Public Information.

3.- Participate in simulation exercises that test this procedure.

After the impact

6.- If the EOC is activated, assist the Chairperson in any public information matters.

7.- After 12 hours of activation of the EOC substitute for the Chairperson in the EOC.

8.- Be substituted every 12 hours by the Chairperson.

9.- Assist the Chairperson in the preparation of the final report.

C. – Media Houses

Keep the public informed with official information

SCRIPT EXAMPLE: TV/RADIO ANNOUNCER:

We have just felt the earthquake here in the studio.

Remember:

- Remain calm.
- If you are still feeling shaking stay where you are stay still until the shaking stops.
- Once the shaking stops you can move around and take care of any injured persons.
- Move away from the coast line, get away from the sea.
- Be careful in case the earthquake shook anything loose.
- Remember to have an engineer to check your building to make sure it is safe.

Just repeating: We in the studio did feel the earthquake and as soon as we get the details from the Seismic Research Centre through the NEMO Secretariat we will share the details with you.

Attachments (Not shown.)

1.- Directory of Radio Stations, TV stations and Newspapers; contact persons, phone numbers, addresses and emergency numbers in Saint Lucia.

END OF PROCEDURE

Saint Lucia National Emergency Management Plan
Saint Lucia National Earthquake Response Plan

Emergency Procedure EP-800 Protection and Rehabilitation of Infrastructure

Version

Version 1. December 11th, 2002.

Objectives

To assess and repair damage to terrestrial communications and public utilities after the impact of an earthquake.

Responsible for the Procedure:

Main:

The Permanent Secretary of the Ministry of Works.

Secondary:

- Committee Members:
 - Permanent Secretary Planning
 - Local Council-Clerks
 - Planning Officer Ministry of Health
 - Director Community Services and Local Government
 - Executive Director Saint Lucia Hotel & Tourism Association
 - Private sector
 - WASCO
 - LUCELEC
 - Telecommunication Companies.
- EOC members

Steps of the Procedure.

A.- The Permanent Secretary of the Ministry of Works shall:

Permanent:

- 1.- Maintain a list of necessary light and heavy equipment (from chainsaw to bulldozer).
- 2.- Maintain a list of all voluntary personnel for immediate post impact action.
- 3.- Identify potential communication and public utilities failures.
- 4.- Maintain close contact with WASCO, LUCELEC, Telecom companies and main private contractors to identify resources and establish coordination and response mechanisms.
- 5.- Assist in developing memoranda of understanding with private companies.
- 6.- Assist in the implementation of mitigation measures.
- 7.- Establish damage assessment teams for the evaluation of damage to roads and bridges.
- 8.- Co-ordinate with the Damage Assessment and Needs Analysis Disaster Committee for the preparation of information about damage assessment to roads and bridges and forward to the NEOC for the damage assessment and needs analysis.

After the Impact:

- 9.- Request information from NEMO.
- 10.- Hold a meeting with the Ministry personnel (including damage assessment teams) that would be in the MOW-EOC and the personnel that would be in the PEOC. Brief them about the situation and ask them to be ready to respond once the order to activate the MOW-EOC and the PEOC is given.
- 11.- Depending on the situation, make the decision to activate the MOW-EOC.
- 12.- Depending on the situation and if the PEOC is activated, send liaison to the PEOC.
- 13.- If the NEOC is activated, send liaison to the NEOC.

14.- Once in the NEOC, test the communications equipment from NEOC to MOW-EOC and to PEOC.

15.- Assist in setting up the NEOC.

16.- Conduct a re-certification of the shelters and jointly with the Shelter Management Committee ensure that the re-certified list is given to NEMO for dissemination through the media.

17.- Participate in the initial aerial damage assessment and gather information about damage to roads and bridges and to public utilities.

18.- Brief the NEOC after the initial aerial damage assessment

19.- Establish co-ordination with the Chairperson of the Damage Assessment Disaster Committee for damage assessment.

20.- Establish co-ordination with the Chairperson of the Transportation Disaster Committee for the deployment of heavy equipment when needed.

21.- Establish co-ordination with the SLASPA representative in the NEOC for the assessment and prompt rehabilitation of air and seaports.

22.- Inform the MOW-EOC about the initial assessment.

23.- Inform the PEOC about the initial assessment.

24.- Ensure the prompt reopening of main roads and airports.

25.- Ensure the prompt restoration of main public utilities.

26.- Assist District Committees in their emergency work.

27.- Gather information from the MOW- EOC, the PEOC and the field teams and prepare reports at least every 12 hours and when needed in the NEOC.

28.- At all times, provide information to the Damage Assessment and Needs Analysis Disaster Committee Chairperson.

29.- After the NEOC is deactivated, prepare a final report and send it to NEMO and participate in the rehabilitation/reconstruction Task Force that would remain in NEMO Headquarters.

30.- Participate in the Reconstruction Committee until final reconstruction of overall damage.

31.- Ensure that mitigation measures are included in the rehabilitation/reconstruction process.

B.- The Members of the Committee shall:

Permanent:

1.- Assist the Chairperson in the preparation of inventories, directories, memoranda of understanding, assessment teams and NEOC information.

After the Impact:

2.- If the MOW-EOC and the PEOC are activated, go to the MOW-EOC or to the PEOC according to the Ministry of Works Plan.

3.- Assist the Chairperson at the EOCs (NEOC, PEOC and MOW-EOC) at all times by providing information about the status of terrestrial communications, ports and public utilities.

4.- Prepare a report once the NEOC and MOW-EOC are deactivated and send it to the Chairperson of the Committee.

C.- The EOC Members shall:

After the Impact:

1.- If the NEOC is activated, establish communication and coordination with the Chairperson, request/provide information to the chairperson as needed about air and seaports, roads and bridges as needed.

Attachments (Not shown).

1.- Inventory of light and heavy equipment

2.- List of damage assessment teams

3.- Directories
MOW- EOC
PEOC

END OF PROCEDURE

Saint Lucia National Emergency Management Plan
Saint Lucia National Earthquake Response Plan

Emergency Procedure EP-850 Environmental Protection and Rehabilitation

Version

Version 1. December 11th, 2002.

Objectives

To protect the environment after the impact of an earthquake and to rehabilitate the environment damaged or altered by the earthquake impact.

Responsible for the Procedure:

Main:

The Permanent Secretary, Ministry of the Environment.

Secondary:

Deputy Chairperson (to be nominated by the PS Ministry of Planning)
Saint Lucia Solid Waste Management Authority
Rep-OECS / Environment and Sustainable Development Unit
Rep- Department of Agriculture
Rep- Department of Fisheries
Rep- Department of Forestry
Rep- Department of Sustainable Development
Rep- The National Trust
Rep- The National Conservation Authority

Steps of the Procedure.

A.- The Permanent Secretary, Ministry of Planning shall:

Permanent:

1.- Revise and update this procedure and its attachments at least once a year and always after a simulation exercise and a real event.

2.- Establish regular contact with NEMO and the National Committees to identify environmental impacts after disasters, possible solutions and resources needed for mitigation and restoration measures.

3.- Maintain regular contact with NEMO and with the Public Information Disaster Committee in order to determine and recommend environmental protection measures in the case of the impact of an earthquake to be included in the public awareness campaigns, and in emergency broadcast through the Media.

4.- Identify activities the population and the governmental and private agencies have to execute after the impact of earthquakes in Saint Lucia to avoid adverse effects in the environment such as: water and underground water contamination, air pollution, soil contamination, destruction/alteration of habitats, effects on forestry, flora and fauna (endemic and endangered species), garbage generation and waste management in disasters, effects on beaches and in specific environmentally protected areas, historical/archaeological sites, etc.

After the Impact:

5.- If the EOC is activated, go to the EOC.

6.- Maintain contact with the Ministry of Planning, the Ministry of Agriculture and environmental organisations to receive information about any environmental damage and actions needed.

7.- Ensure that garbage and debris are collected from roads, ports, shelters, and other key locations and from collapsed buildings according to priorities set by the EOC and according to resources available.

8.- Always request assistance and/or action to the EOC when needed.

9.- Revise and update this procedure after the event.

B.- The Nominee of the Permanent Secretary from the Ministry of the Environment shall:

Permanent:

1.- Assist the PS, Ministry of the Environment in his/her tasks regarding this procedure and the National Earthquake Response Plan.

2.- Know the Earthquake Response Plan, its procedures and his/her role in it and during an emergency or disaster, particularly his/her activities regarding the protection and/or restoration of the environment before and/or after the impact of earthquakes.

3.- Participate in simulation exercises that test this procedure.

After the Impact:

4.- If the EOC is activated, maintain communication with the PS of the Ministry of the Environment and assist him/her in any environmental protection and restoration matters.

5- Assist the PS of the Ministry of the Environment in environmental damage assessment and in identifying environmental protection activities and agencies responsible for them and in implementing activities and deploying resources when applicable and when needed.

6.- Send Damage assessment and needs analysis to NEOC within 44 hours.

7.- Assist in the co-ordination of agencies related to environmental protection for the protection and rehabilitation of the environment.

8.- Substitute for the PS of the Ministry of the Environment in the EOC every 12 hours.

9.- Assist the PS of the Ministry of the Environment in the preparation of the final report regarding the environmental impact and protection and remediation activities.

10.- Participate, if needed, in the 'Task Force' or in the Reconstruction Committee, to ensure that any environment damage is mitigated.

Attachments: (Not shown)

1.- Draft OECS Rapid Damage Assessment and Needs Analysis.

END OF PROCEDURE

Saint Lucia National Emergency Management Plan
Saint Lucia National Earthquake Response Plan
Emergency Procedure EP-900 Reconstruction

Version

Version 1. December 11th, 2002.

Objectives

To reconstruct infrastructure and the environment to recover from the impact of an earthquake and its effects until society is back to normal and all its interrupted needs are satisfied, always considering mitigation, vulnerability reduction and improvement of the response capacity in the process.

Responsible for the Procedure:

Main:

The Prime Minister of Saint Lucia.

Secondary:

Deputy Prime Minister or Nominee.

Steps of the Procedure:

A.- The Prime Minister of Saint Lucia shall:

Immediately before the Impact:

1.- Establish a contingency fund in case it is needed after the earthquake strikes. Establish co-ordination with the Ministry of Finance, NEMO and any other Ministry or agency involved in the establishment of this contingency fund and its amount.

After the Impact:

2.- Establish a 'Task Force' after the EOC is deactivated for the purposes of the continuation of the rehabilitation of services and the commencement of the reconstruction process.

3.- Based on the final damage assessment report establish priorities and identify sources of financing of projects.

4.- If necessary, establish and chair a Reconstruction Committee with the following members and any other as necessary.

Ministry of Physical Development
Ministry of Finance
Ministry for External Affairs
Ministry of Works
Ministry of Agriculture
Ministry of Housing
NEMO

5.- Invite as permanent members of the Reconstruction Committee all those Ministries or agencies involved in the reconstruction process according to the existing damage and to the priorities set.

6.- Jointly with the Ministry of Physical Development, the Ministry of Finance, The Ministry for External Affairs, the Ministry of Works and any other Ministry or Disaster Committee as needed, establish contact with donors in order to get funds for reconstruction projects according to the donors' funding mechanisms, and to Saint Lucia internal financial mechanisms.

7.- Jointly with the Ministry of Physical Development, the Ministry of Finance, The Ministry of External Affairs, the Ministry of Works and any other Ministry or Disaster Committee as needed, establish a 'Saint Lucia Reconstruction Programme' considering, at least:

Number and Type of Projects
Amount (Funds)
Source of financing
Responsible for the supervision of the project
Activities
Programme

8.- Always revise, supervise and approve the Terms of Reference of every project within the Reconstruction Programme.

9.- Supervise and be informed by the Reconstruction Committee about the progress of every project within the Reconstruction Programme until every project and the Programme is finished.

B.- The Deputy Prime Minister or Nominee shall:

After the Impact:

- 1.- Assist the Prime Minister all his/her activities regarding reconstruction after a disaster in Saint Lucia.
- 2.- Assist the Prime Minister in the co-ordination of 'Task Force' and the Reconstruction Committee until all their works and projects are finished and reconstruction considered finished.

Attachments (Not shown.)

- 1.- Emergency Housing Policy

END OF PROCEDURE

Saint Lucia National Emergency Management Plan
Saint Lucia National Earthquake Response Plan

Emergency Procedure EP-950 District Disaster Committee General Procedure (Earthquake).

Version

Version 1 December 11th, 2002.

Objectives

To identify vulnerability and risks, respond and provide relief after an earthquake impact.

Responsible for the Procedure:

Main:

District Disaster Committee Chairperson.

Secondary:

Deputy Chairperson of the Committee.

Steps of the Procedure.

A.- The District Disaster Committee Chairperson shall:

Permanent:

1.- Meet with the Committee and revise and update this procedure and its attachments at least once a year and always after a simulation exercise and a real event.

2.- Ensure that the District Disaster Committee has amongst its members:

- Principals of schools
- All service clubs
- Churches
- Red Cross
- Development Committee
- Fishermen's cooperative
- Radio amateurs/citizen band

Farmer groups
Youth organisations'
Mothers and fathers groups
Minibus, taxi associations
Markets/supermarkets/commerce
Police representative
Fire service representative
Representative of the District Health Team (Chairperson or nominee)
Private companies (vehicles, light and heavy equipment, materials, etc)

3.- Ensure that the District Committee is organised and working permanently; assign responsibilities and permanent tasks to committee members at least for:

vulnerability assessment
telecommunications
transportation
public information
shelter management
health and welfare
supply management

4.- Inform all Committee members about the location of the District EOC and discuss their functions during a disaster.

5.-Identify means of communication between the District Committee EOC and the District committee members.

After the Impact:

6.- If the National EOC is activated, activate the District EOC and remain there.

7.- Notify the rest of the District Committee members that the District EOC has been activated.

8.- Contact NEMO and ask for instructions.

9.- Ensure that re-certified shelter list is received and circulated within 48 hours or before.

10- Contact neighbouring District Committees.

11- Make an initial assessment of the situation.

12- Inform NEMO about the situation and ask for instructions.

13- Solve any problems in the District due to the earthquake impact by asking the Committee members to take immediate action according to their responsibilities.

14- Keep permanent and uninterrupted contact with the National EOC and inform them about the situation, actions taken and results.

15- Activate shelters only when requested and agreed, according to the needs, by NEMO and the EOC. Call shelter managers to activate them immediately.

16- Manage the District resources to solve any situations due to the earthquake impact.

17- Request and offer assistance and resources to and from neighbouring District Committees as needed.

18- If the situation overwhelms all the resources of the District, its members and organisations, request assistance from the National EOC.

19- Every twelve hours after the DEOC activation change personnel through shifts.

20.- Prepare reports of the situation every six hours and general final report after the NEOC and the DEOC are deactivated.

21.- Send all reports to the NEOC and NEMO. (Situation report every six hours and final report.)

22.- Revise and update this procedure after the event.

B.- The Deputy Chairperson of the Committee shall:

Permanent:

1.- Assist the Chairperson in his tasks regarding this procedure and the National Earthquake Response Plan.

2.- Know the Earthquake Response Plan, its procedures and his/her role in it and during an emergency or disaster, particularly his activities regarding the District Disaster Committee preparedness and response.

3.- Assist the District Disaster Committee Chairperson in ensuring the members of the Committee prepare their directories and inventories of resources and give them to the Chairperson.

4.- Participate in simulation exercises that test this procedure.

After the Impact:

5.- If the District EOC is activated, maintain communication with the Chairperson and assist him/her in any attention matters.

6.- Assist the Chairperson in chairing the DEOC and with the follow up of every action taken by the committee members.

7.- Assist the Chairperson in the preparation of the final report.

Attachments (Not shown.)

1.- Directory of Committee members: names, responsibilities, address, phone numbers.

2.- Inventory of telecommunications in the District: type, location, and member responsible for them.

3.- Map of high vulnerability areas in the District.

4.- List of shelters.

5.- Directory of shelter managers of the District shelters: name, telephone numbers, fax, and address.

6.- Inventory of resources committed by the District Committee.

END OF PROCEDURE

ATTACHMENT 1

Records of Real Events

The records or events in Saint Lucia are supplied to the Government of Saint Lucia by the Seismic Research Unit of the University of the West Indies, St Augustine Campus

The records are stored at the National Emergency Management Organisation Secretariat and are a stand alone document.

ATTACHMENT 2

Comparing the Richter and Modified Mercalli scales

Remember - Richter measures energy of the seismic wave or shock while Mercalli measures the intensity or effect on the surface of the earth.

Richter	Modified Mercalli	Effect
2	I	Instrumental. Not felt except by a very few under especially favourable conditions detected mostly by Seismography.
	II	Feeble. Felt only by a few persons at rest, especially on upper floors of buildings.
3	III	Slight. Felt quite noticeably by persons indoors, especially on upper floors of buildings. Many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibration similar to the passing of a truck.
	IV	Moderate. Felt indoors by many, outdoors by few during the day. At night, some awakening. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like a heavy truck striking building. Standing motor cars rock noticeably.
4	V	Rather Strong. Felt by nearly everyone; many awakened. Some dishes, windows broken. Un-stable objects overturned. Pendulum clocks may stop.
5	VI	Strong. Felt by all, many frightened. Some heavy furniture moved; a few instances of fallen plaster. Damage slight.
	VII	Very Strong. Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable damage in ordinary structures; considerable damage in poorly built or badly designed structures.
6	VIII	Destructive. Damage slight in specially designed structures; considerable damage in ordinary substantial buildings with partial collapse. Damage great in poorly built structures. Fall of factory stacks, columns, monuments, walls. Heavy furniture overturned.
7	IX	Ruinous. Damage considerable in specially designed structures; well designed frame structures thrown out of plumb. Damage great in substantial buildings, with partial collapse. Buildings shifted off foundations.

	X	Disastrous. Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations. Rails bend greatly.
8	XI	Very Disastrous. Few, if any (masonry) structures remain standing. Bridges destroyed. Rails bend greatly.
	XII	Catastrophic. Damage total. Lines of sight and level are distorted. Objects thrown into the air.

Source: CDERA

ATTACHMENT 3

EXAMPLE OF MEDIA SCRIPT

TV/RADIO ANNOUNCER:

We have just felt the earthquake here in the studio.

Remember:

- Remain calm.
- If you are still feeling shaking stay where you are stay still until the shaking stops.
- Once the shaking stops you can move around and take care of any injured persons.
- Move away from the coast line, get away from the sea.
- Be careful in case the earthquake shook anything loose.
- Remember to have an engineer to check your building to make sure it is safe.

Just repeating: We in the studio did feel the earthquake and as soon as we get the details from the Seismic Research Centre through the NEMO Secretariat we will share the details with you.