



**SURVEY OF THE STRENGTHS, WEAKNESSES AND  
PROJECTS FOR DISASTER MANAGEMENT IN ACS  
COUNTRIES**

**ASSOCIATION OF CARIBBEAN STATES**

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**ACS/2000/NAT.DES.TG.III/WP.001**

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**FOR DISASTER MANAGEMENT IN ACS COUNTRIES**

**INTRODUCTION**

The First Meeting of the Executive Board of the Special Committee on Natural Disasters (March 2000) recommended “the need to evaluate existing programmes and agencies, strengths, weaknesses and gaps at the national, sub-regional and regional level”. This project is the tangible result of this decision.

The time frame was restricted from the onset as the material had to be prepared for the Meeting of the Special Committee on Natural Disasters in El Salvador, October 19-20, 2000. The Technical Group met in June 2000 to review the terms of reference and the questionnaires presently in circulation. The Consultant was contracted in July 2000 under the following terms of reference.

**Terms Of Reference For The Elaboration Of A Survey Instrument And Analysis On Management Of Natural Disasters In The ACS Countries**

Project: Evaluation of the Strengths, weaknesses and projects being undertaken by the Countries of the ACS in the area of Management of Natural Disasters.

Purposes of the TOR: To select a Consultant for the elaboration and Analysis of a Survey Instrument to be circulated among the Members and Associate Members on Management of Natural Disasters.

**TERMS OF REFERENCE**

1. Date to start with the Project: 27/7/00
2. Tasks to be undertaken by the selected candidate:
  - a) To design a questionnaire;
  - b) To design the strategy for compiling information;
  - c) To design a strategy for the analysis of the information.
3. Elements to be taken into account:

The consultant will evaluate several disaster programs so as to identify common cooperation priorities by:

- Designing a document made up of the questionnaire which would include prevention, preparation, mitigation and response in the following areas:
  - Risks

- Inter-State/sub-regional mechanisms
- Gaps/priorities
- Projects being executed

The consultant will also take into consideration Article 4 of the Agreement between Member and Associate Member States of the Association of Caribbean States for Regional Cooperation on Natural Disasters, at the moment the questionnaire is drafted. It was decided that with respect to the abovementioned points, a paragraph should be included on budgetary legislation and institution.

The following topics must also be included:

- Early warning
- Recovery
- Planning sector
- Public education
- Links with development projects
- Regional/state levels

#### 4. Timing:

- The consultant must be hired from July 27, 2000.
- The first draft of the questionnaire must be distributed for comments by August 7.
- The final draft must be circulated to countries by August 20, in two ways: one through liaison officials and the other through CDERA, CEPREDENAC and the Netherlands Antilles who will circulate it to the focal points. Responses must be received not later than September 15, 2000.

### **Strategy For Gathering, Compiling And Analysis Of The Survey Information**

#### **Design of Questionnaire:**

Based upon the objectives of the survey exercise outlined in the Terms of Reference, the questionnaire was a *structured questionnaire* to solicit facts in an easy manner from the respondents. The questionnaire was predominantly a *closed evaluation* instrument to ensure a maximum response. However, some *ranked* and a few *open-ended* (narrative) units were included to assist with the identification of common trends and more detailed assessment. This allowed the member states to contribute towards the identification of common areas of cooperation.

The questionnaire was circulated among a Technical Committee for review and the considerations of the members of the Group were included into the body of the

document. The latter was originally be prepared in English for review, and subsequently translated into Spanish and French by the office of the Association of Caribbean States prior to circulation. All questionnaires were available in hardcopy and electronic format (MSWord).

### **Strategy for Compiling Information**

The questionnaire was circulated via liaison officers, CDERA and CEPREDENAC mainly by facsimile and electronic mail to the ACS member states. Given the small time window for the completion of the survey instrument (August 20-September 10) and the moderate length of the questionnaire, a 68% response was originally anticipated from the 25 member states.

By September 22, eighteen responses had been received, including three from the British dependant territories of the British Virgin Islands, Montserrat and the Grand Turks and Caicos Islands. Thus a 60% response from ACS members was received. There is naturally some limitation to the analysis, as responses were not received from the largest member states of Mexico and Venezuela. However the 18 responses do reflect the position of the Central American and Caribbean Island grouping.

While the questionnaire was in circulation, a review of the discussions of the donor agencies and regional organizations, was undertaken to assess the approaches to disaster management initiatives in the region.

Mexico and Guatemala subsequently responded. These results were included after the August 19-20 Meeting in El Salvador and did not significantly change the body text of the discussion.

### **Strategy for the analysis of the information**

The Survey questionnaire itself was structured to provide for a statistical analysis of the country responses on a comparative basis. The ranking of responses (for example the ranking of risks and priorities) allowed for a refined stratification of the information. The inclusion of a few open-ended units (brief project descriptions) gave substance and clarification to the analysis. Such units were invaluable for identifying present projects in the region and also the areas of cooperation desired by the member states.

Gaps were identifiable within the negative responses of each section and by the poor responses to some of the questions. Anomalies were also sought. The analysis looked at not just the core data received, but crossed checked different sections to confirm responses. Cross-referencing of information also reflected geographic and disaster management groupings as well as the common hazard exposure of the responders.

### **Conclusion**

The survey achieved its objective to evaluate programmes to identify and promote common cooperation priorities for prevention, mitigation and management of natural disasters. Indeed some fifty-five (55) projects in the region were identified and four priority programme areas were identified for collaboration. These areas reflected common hazard concerns as well as strategic approaches such as training and education, institutional capacity strengthening and the enhancement of operational areas.

## 1.0 Analysis Of The Survey, Results And Recommendations

### 1.1 Risk

Most of the responders (85%) identified hurricanes and floods as the primary hazards to which their countries were exposed. As an extension of these weather phenomenon it was not surprising to find that storm surges (65%) and landslides (60%) featured as the main areas of concern. (Figure 1.0). It should be noted that forest fires is also an exposure requiring attention within the region.

#### Earthquakes:

Earthquakes were of interest generally to the Central American states of Costa Rica, Guatemala, El Salvador and Nicaragua; the northern Caribbean territories of Cuba, Jamaica, Dominican Republic, Antigua and Barbuda as well as Trinidad and Tobago and Mexico. Earthquakes and seismic activity was also one of the assessments selected as a priority (Figure 1.1) in the region as it features highly as a primary and secondary risk exposure.

Most of these countries (5) had already quantified the events and scale of the earthquake hazard (Table 1.0). Likewise 4 countries had mapped this hazard.

*Some assistance can be provided to the countries which are highly vulnerable to earthquakes, towards the completion of their risk assessments particularly as nations have completed different stages of the process and can share their knowledge/experiences with each other.*

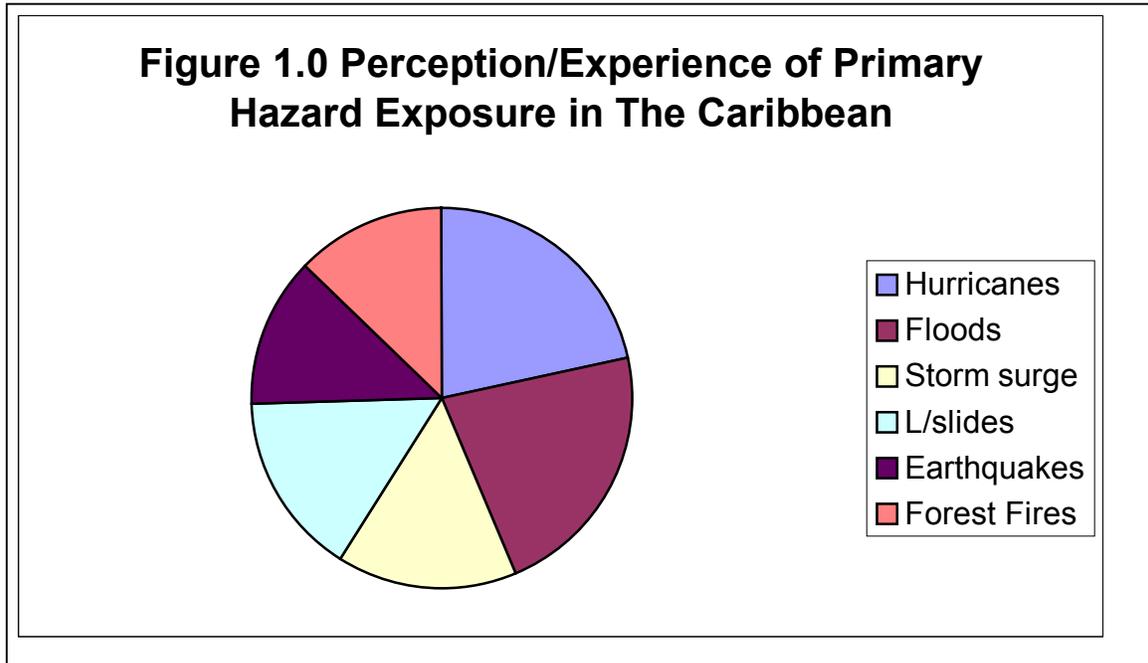
#### Floods:

The flood hazard is of regional concern. All but three countries cited this hazard as an exposure priority. Flooding is the most common hazard of choice for developing risk assessments and by far the hazard most countries would like to see early warning system (EWS) development (Figure 1.2).

Yet despite great concern for this hazard, less than one-third of the countries have completed the quantified occurrence of flooding, although approximately 55% of the nations at risk had mapped the flood impact. Countries are rightly trying to assess their vulnerability to flooding. Only four countries have been able to complete this study (Costa Rica, Belize, Panama and Antigua and Barbuda) ten others are in the process of assessing their vulnerability to flooding (Table 1.1).

*Given that floodplains are growth centres for socioeconomic activity, every effort must be made to speed along the analysis and EWS for this hazard. Such information would be invaluable for land-use planning, river-basin management and the protection of the existing floodplain inhabitants. Jamaica, Cuba, the Dominican Republic, Belize, El*

Salvador and Barbados have indicated that EWSs exist in these territories. Such applications may be reviewed and shared with the other territories to speed the process.



### Tropical Storms and Hurricanes

A naturally dominant hazard in the region, only Panama, Guatemala and Trinidad and Tobago identified this hazard as a secondary concern. It was therefore unsurprising that 66% of the countries responding acknowledged the existence of an EWS for tropical cyclones. Curiously, Grenada and St. Lucia stated that an EWS for tropical cyclones had not been established (as did Panama, although hurricanes was sited as a secondary risk there).

Most countries had quantified the occurrence of this hazard and completed (or were in the process of addressing) the mapped area of (potential) impact. Of greater concern are the *other factors* which increased the risk to tropical cyclones.

**Table 1.0 Achievements in Hazard Analysis and the Implementation of Early Warning Systems**

<b>Question 2.3 "YES"</b>	<b>Hazard Quantified</b>	<b>Impact Mapped</b>	<b>Vulnerably Assessment</b>	<b>EWS established</b>
<b>EQ</b>	6 BVI Costa Rica Dom Republic Jamaica Mexico Tdad & Tbgo	5 BVI Costa Rica Cuba Dom Republic Mexico	3 BVI Costa Rica Dom Republic	3 Cuba Dom Republic Mexico
<b>Volcanic Eruptions</b>	4 Costa Rica Dominica Mexico Montserrat	6 Costa Rica Dominica Grenada Montserrat Mexico Neth Ant	4 Costa Rica Dominica Mexico Montserrat	3 Dominica Mexico Montserrat
<b>Tsunami</b>	1 Mexico	2 Jamaica Mexico	1 BVI	3 Cuba El Salvador Mexico
<b>TS/ Hurricane s</b>	9 Ant & Barb Belize BVI Costa Rica Dominica Jamaica Mexico Montserrat Tdad & Tbgo	13 Ant & Barb Belize BVI Costa Rica Cuba Dominica Dom Republic GT & CI Jamaica Montserrat Mexico Neth Ant Tdad & Tbgo	7 Ant & Barb Belize BVI Costa Rica Dominica Dom Republic Montserrat	13 Ant & Barb Belize BVI Cuba Dominica Dom Republic GT & CI El Salvador Mexico Jamaica Montserrat Neth Ant Tdad & Tbgo
<b>Tornado</b>				1 Cuba
<b>Drought</b>	1 Panama	3 Cuba Dom Republic Panama	2 Dom Republic Panama	3 Cuba Jamaica Tdad & Tbgo
<b>Forest Fire</b>	1 Mexico	3 Cuba Dom Republic Mexico	2 Dom Republic Mexico	5 Cuba Dom Republic El Salvador Mexico Jamaica
<b>Flood</b>	6 Ant & Barb Costa Rica El Salvador Jamaica Mexico Panama	11 Ant & Barb BVI Barbados Costa Rica Cuba Dom Republic El Salvador GT & CI Jamaica Mexico Panama	4 Ant & Barb Belize Costa Rica Panama	6 Barbados Belize Cuba Dom Republic El Salvador Jamaica
<b>L/slide</b>	3 Barbados Dominica Panama	6 Barbados BVI Cuba Dominica Jamaica Panama	4 Barbados Belize Dominica Panama	2 Belize El Salvador
<b>St. Surge</b>	3 Ant & Barb Belize BVI	6 Ant & Barb Barbados Belize BVI Cuba Jamaica	3 Ant & Barb Barbados BVI	3 Belize Cuba Tdad & Tbgo
<b>Epidemic</b>	4 Belize Costa Rica Dom Republic El Salvador	4 Belize Costa Rica Dom Republic El Salvador	5 Belize Costa Rica Cuba Dom Republic El Salvador	7 Ant & Barb Belize Cuba Dom Republic El Salvador Jamaica Tdad & Tbgo
<b>Epizootic</b>	2 Belize Dom Republic	2 Belize Dom Republic	3 Belize Cuba Dom Republic	5 Belize Cuba Dom Republic Jamaica Tdad & Tbgo
<b>Agricultural Plague</b>	6 Ant & Barb Belize BVI Dom Republic Mexico St Lucia	3 Belize Dom Republic St Lucia	4 Ant & Barb Belize Cuba Dom Republic	5 Belize Cuba Dom Republic Jamaica Tdad & Tbgo

**Table 1.1** Developments in Hazard Analysis and the Implementation of Early Warning Systems

<b>Question 2.3 “Incomplete”</b>	<b>Hazard Quantified</b>	<b>Impact Mapped</b>	<b>Vulnerably Assessment</b>	<b>EWS established</b>
<b>EQ</b>	5 Ant & Barb Cuba El Salvador Panama St Lucia	5 Jamaica El Salvador Panama St Lucia Tdad & Tbgo (Nicaragua)	6 Ant & Barb Cuba El Salvador Panama Mexico Tdad & Tbgo (Guatemala)	2 BVI El Salvador (Nicaragua) (Guatemala)
<b>Volcanic Eruptions</b>	3 El Salvador Panama St Lucia (Nicaragua) (Guatemala)	3 El Salvador Panama St Lucia (Nicaragua) (Guatemala)	2 El Salvador St Lucia (Guatemala)	2 Grenada El Salvador (Nicaragua) (Guatemala)
<b>Tsunami</b>	5 Cuba Dom Republic El Salvador Panama Tdad & Tbgo	4 Cuba Dom Republic El Salvador Panama (Nicaragua)	5 Cuba Dom Republic El Salvador Mexico Tdad & Tbgo	2 Dom Republic Tdad & Tbgo (Nicaragua)
<b>TS/ Hurricanes</b>	5 Cuba Dom Republic El Salvador Neth Ant Panama (Guatemala)	1 El Salvador (Nicaragua)	6 Cuba El Salvador GT & CI Neth Ant St Lucia Mexico (Guatemala)	1 Costa Rica (Nicaragua) (Guatemala)
<b>Tornado</b>	3 Cuba Dom Republic Panama	2 Cuba Panama	3 Cuba Dom Republic Panama	2 Dom Republic Panama
<b>Drought</b>	6 Ant & Barb Cuba Dom Republic El Salvador Mexico Tdad & Tbgo	2 El Salvador Mexico (Nicaragua)	4 Ant & Barb Cuba El Salvador Mexico (Guatemala)	3 Dom Republic El Salvador Panama
<b>Forest Fire</b>	6 Belize Costa Rica Cuba El Salvador Panama Tdad & Tbgo (Guatemala)	5 Belize Costa Rica El Salvador Panama Tdad & Tbgo (Nicaragua) (Guatemala)	5 Costa Rica Cuba El Salvador Panama Tdad & Tbgo (Guatemala)	2 Costa Rica Panama (Guatemala)
<b>Flood</b>	7 Belize Cuba Dominica Dom Republic GT & CI St Lucia Tdad & Tbgo (Guatemala)	5 Belize Dominica Neth Ant St Lucia Tdad & Tbgo (Nicaragua) (Guatemala)	10 Barbados BVI Cuba Dominica El Salvador GT & CI Mexico Neth Ant St Lucia Tdad & Tbgo (Guatemala)	7 Ant & Barb Costa Rica Neth Ant Mexico Panama St Lucia Tdad & Tbgo (Nicaragua) (Guatemala)
<b>L/slide</b>	6 Cuba Dom Republic El Salvador Mexico St Lucia Tdad & Tbgo (Guatemala)	6 Dom Republic El Salvador Neth Ant St Lucia Tdad & Tbgo Mexico (Nicaragua) (Guatemala)	8 BVI Cuba Dom Republic El Salvador Neth Ant St Lucia Tdad & Tbgo Mexico (Guatemala)	5 Dom Republic Neth Ant Panama Mexico Tdad & Tbgo (Guatemala)
<b>St. Surge</b>	5 Cuba Dom Republic El Salvador Mexico St Lucia	3 El Salvador Mexico St Lucia	7 Belize Cuba Dom Republic El Salvador Neth Ant Mexico St Lucia	6 Ant & Barb Dom Republic El Salvador Jamaica Mexico Neth Ant (Nicaragua)
<b>Epidemic</b>	6 Ant & Barb Cuba Jamaica Neth Ant Panama St Lucia (Nicaragua)	5 Ant & Barb Jamaica Neth Ant Panama St Lucia (Nicaragua)	3 Ant & Barb Neth Ant Panama	2 Neth Ant Panama (Nicaragua)
<b>Epizootic</b>	1 Cuba			
<b>Agricultural Plague</b>	1 Cuba	3 Ant & Barb Jamaica Mexico (Nicaragua)	2 Mexico St Lucia	3 Ant & Barb St Lucia Mexico (Nicaragua)

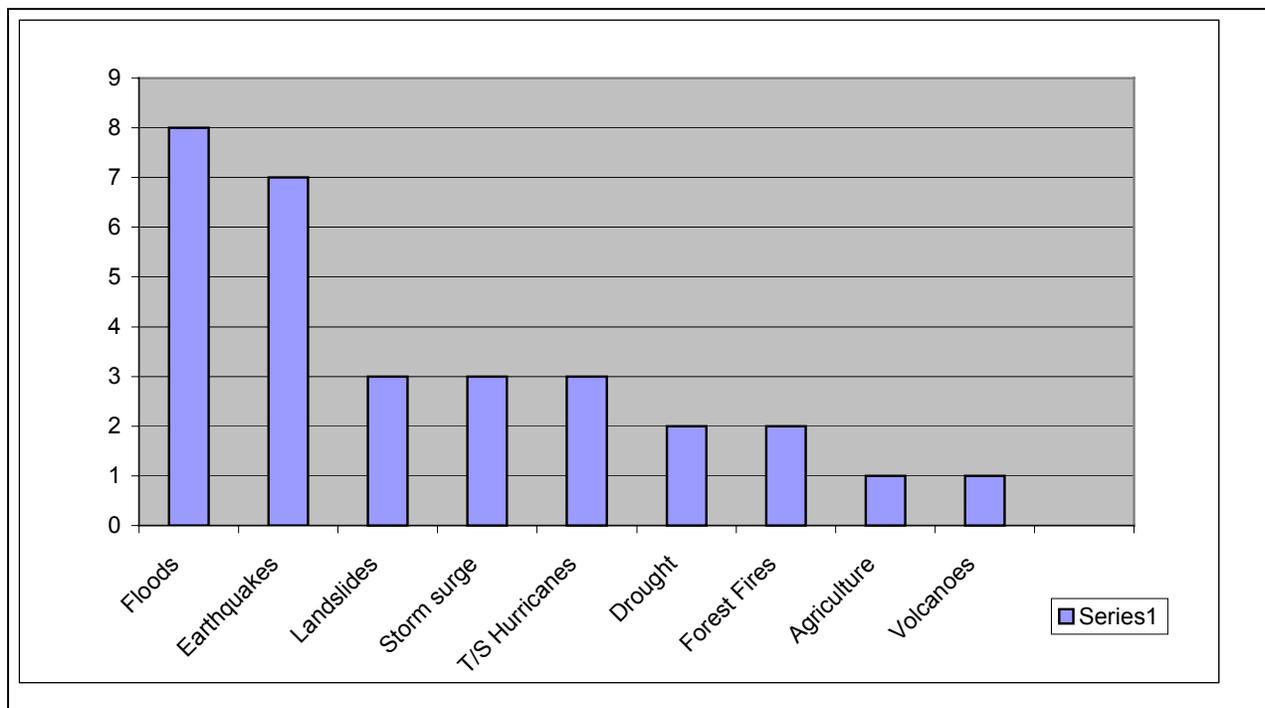
Nicaragua & Guatemala are included in brackets as the response acknowledged these assessments, “Yes/Incomplete” response was unclear

### Landslides:

Not unexpectedly all responders (except the Grand Turks ad Caicos Islands) identified landslides a hazard of concern. Ten (10) countries cited landslides as being of primary importance while seven (7) countries considered this hazard of secondary importance.

While hazard assessment is desirable, it would be difficult to justify initiating expenditure for this, at the regional level, where just three countries would benefit at this time (Figure 1.1). This is particularly in light of the discussions surrounding the ACS Special Fund criteria of benefiting at least 5 countries. *Such initiatives may need to remain as singular country concerns.*

**Figure 1.1 Responder’s Choice of Hazard Assessment to be Prioritized**



### Storm surges:

Every country in the survey results (with the exception of Mexico) identified storm surges as an important hazard to which they are exposed. Indeed only six countries identified this phenomenon as a secondary priority (BVI, Dominica, Dominican Republic, Guatemala, El Salvador and Panama).

Despite the interest in storm surges only 3 countries had quantified the hazard (Antigua and Barbuda, BVI, Belize). However 6 countries did complete their hazard mapping

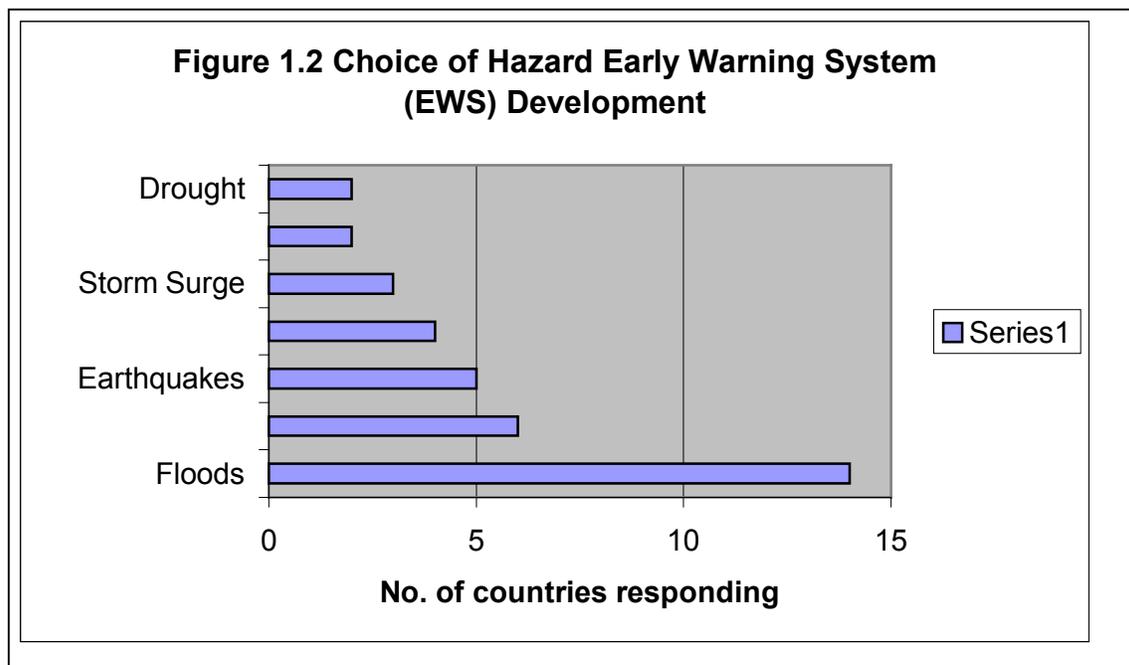
(including Barbados, Cuba and Jamaica), another 4 member states were in the process of quantifying the hazard mapping (Table 1.1).

An effective regional early warning system for storm surges is needed given the coastal settlement patterns and economic development related to tourism. The responders (Figure 1.2) had identified this need. Three countries have already established such an EWS (Belize Trinidad and Tobago and Cuba). Six (6) countries were in the process of developing such a system).

*The knowledge and experiences of those territories further ahead in the risk assessment process for storm surges should be harnessed:*

- *To help adjacent countries complete their hazard assessment in the shortest possible time.*
- *As an effective regional storm surge EWS (that the surprise of surges similar to events like Hurricane Lenny might not be repeated).*

Technical experts for the TAOS (CMHI, Barbados) and SLOSH (Puerto Rico) models should be encouraged to combine their efforts to promote the timely establishment of a regional EWS for storm surge.



### Forest Fires:

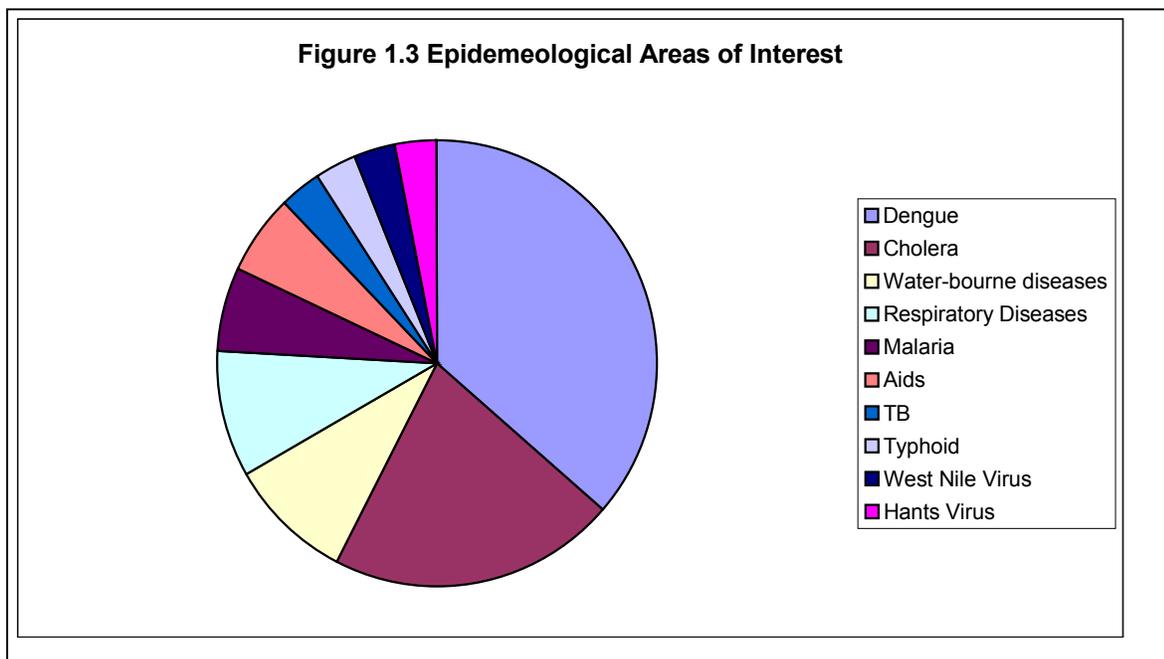
Although 80% of the responders identified forest fires as a risk, just less than half of these countries acknowledged that forest fires were a primary exposure. With the exception Cuba, the Dominican Republic and Trinidad and Tobago, all of the countries citing a primary exposure were within Central America. The risk assessment has not proceeded as far as other hazards, Only Mexico has quantified the risk, although as many as seven (7) are in the process of developing their risk assessment..

Three countries have mapped the hazard potential and impact (Cuba Mexico and the Dominican Republic). Another five are attempting to complete this activity. El Salvador, Cuba, Dominican Republic, and Jamaica have also acknowledged the establishment of an EWS for Forest Fires.

*The focus for collaboration here should be the completion of the risk assessments including the mapping and the simultaneous development of response plans. The latter should include and/or enhance existing sub regional cooperation arrangements in the area of forest fires. Further, educational/training resources should be combined to address the difficult deforestation issue facing all territories.*

### Biological:

Overwhelmingly dengue including its haemorrhagic strain was selected as a biological area of concern (Figure 1.2). Twelve of fourteen countries answering this question (2.2 (a)) cited dengue. Mindful that greater publicity can have potentially dire adverse effects on the economies of the region, a concerted combined regional and national effort is required to greatly minimize this threat.



such as gastro-enteritis and diarrhoea in general, it appears *that public-health programmes continue to need enhancement support.*

There were no common areas of concern for epizootics. Indeed the poor response to this question 2.2 (b) suggest that there may be the need raise the level of discussion between the D/EMO and agricultural ministries in the individual countries.

For other agricultural factors (such as agricultural plague) the response was not encouraging. Nevertheless the pink mealy bug was a common concern to five countries (Antigua, BVI, Dominica, Jamaica and Montserrat). Other individual hazards included locust, citrus canker, med. fly and fire ants. *Some progress has been made introducing a natural enemy to the mealy bug and citrus black fly in the Southern Caribbean. These initiatives can be explored to the benefit of farmers in the region.*

#### Other Factors which increase Risk:

Structural concerns, building codes and construction (in purple Figure 1.4) was an area of the most popular replies (22%) to concerns for *Other Factors* which increase risk. Mitigation (14%), education (15%) and land-use planning/zoning (12%) were also common.

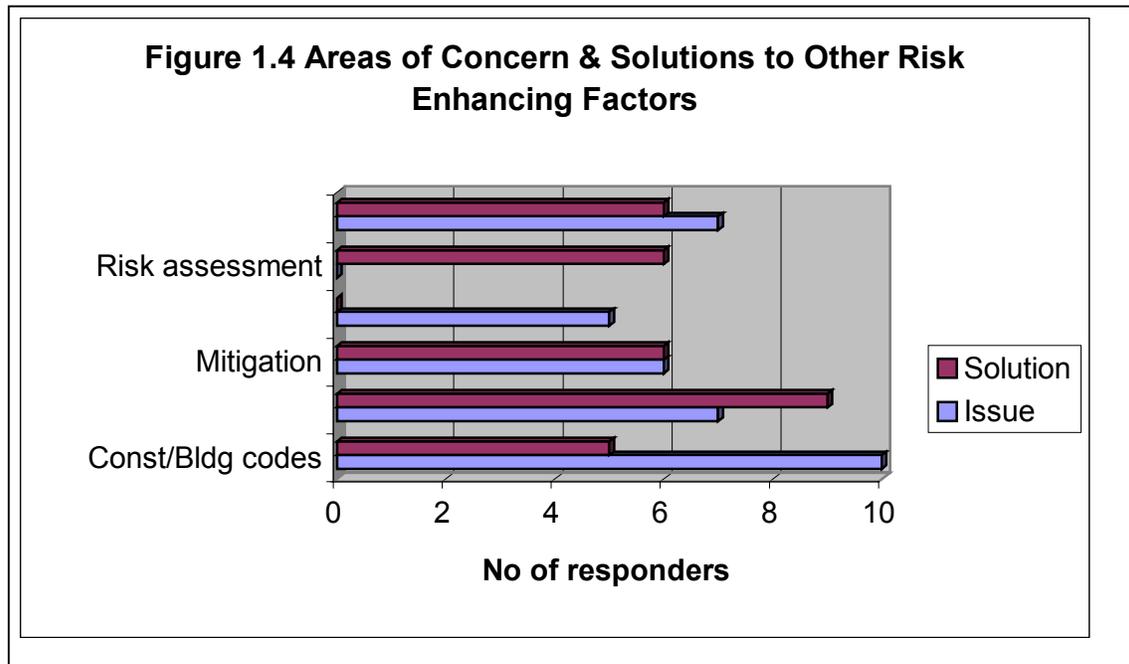
When asked where efforts should be concentrated to reduce the other factors (light blue Figure 1.4), the respondents did not vary. Overwhelmingly education, training and awareness was called for. Additionally structural issues and other mitigation activities were requested. The countries also reinforced their earlier calls for hazard and risk assessments.

*Present regional efforts to address structural issues should be supported. These initiatives by CDERA, CEPREDENAC and other agencies include, the sharing and disseminating information and support for the implementation of building codes for dwellings and other structures. Training for engineers and artisans, in best practice for construction and retrofitting, is also supported by regional tertiary institutions.*

#### Involvement of Experts Agencies:

Eleven out of thirteen countries indicated that their risk assessments were undertaken by national entities such as the Coastal Zone Management, Barbados, Centre for Geo-technical Information, El Salvador and the Universities of Panama and the West Indies. This call for the improvement and use of regional knowledge and skills is repeated in response of the countries identifying areas for regional cooperation. *Whichever initiatives are chosen every effort must be made to involve/include skills and knowledge which reside in the region.*

However, *the circle of discussion and knowledge needs to be enlarged to include greater involvement of the private sector, the land-use and development planning authorities.* In each of the cases, too few countries (35, 50 and 45% respectively) responded in the positive to the involvement of these groups. This compares unfavourably with 75% acknowledging the involvement of Public Works and other groups.



## 1.2 Projects Being Executed

Fifty-five projects have been identified from the survey. These are listed in Table 1.2 below and are roughly grouped together to give some perspective on where interest lies. In particular:

- Hazard and Vulnerability Assessment & EWS
- Community Disaster Preparedness
- Public Information, Education and Telecommunications
- Shelters
- Reconstruction and Recovery
- Response and Capacity Building
- Planning and Mitigation

Half of the project activities were positively linked to development programmes. Of these only Costa Rica, Dominica, Panama and Trinidad and Tobago could demonstrate a clear link to specific development initiatives. This linkage (or lack there of) demonstrates *the need to widen the process of consultation and to make disaster management an integral part of development financing in much the same way as environmental management now is.*

These projects are taking place in a clearly defined approach. Most D/EMOs have strategic plans (70%) and have defined and initiated work programmes (90%). The project areas reflect the interest of the D/EMOs and have been referred to in earlier sections.

### Priority Areas of Interest for Regional Cooperation

**Table 1.3** lists the priority areas of interest indicated by the responders. There are 8 general groupings.

**Group 1** demonstrates the relevance of such on going activities as the CRID and CARDIN initiatives towards the sharing of information. It also highlights the desires of the members to see the sharing and cooperative development of technical knowledge in areas of disaster management.

**Groups 2 and 8** have been discussed in the previous section on risk. Here the expressions of the responders reinforce the earlier findings on risk and hazard assessments.

**Groups 3 –5** represent many ongoing initiatives in the region. Interestingly there are many non-disaster oriented World Bank Projects in the region into which these proposals can easily be incorporated. For example:

- Telecommunications Reform- Jamaica, OECS, Nicaragua, Dominican Republic
- Health Sector Reform - Mexico
- Rural Development/Education – Mexico, Nicaragua
- Poverty Reduction – St. Lucia
- Sustainable Forestry – Nicaragua
- Transport Sector Rehabilitation – Honduras, Nicaragua
- Education Enhancement – Trinidad and Tobago, Nicaragua, El Salvador

The links are there, as is the funding. Yet, *there is still a need to widen the process of consultation and to advocate strongly for making disaster management an integral part of development financing that disaster management concerns may be built into the core of the initiative.*

**Group 6** emphasizes training, education and awareness as an integral part of any arrangement. *Whatever the project, e.g. risks assessment, the development of technical material must not be the core activity. Rather, the public must be made aware of the usefulness of the material and training programmes established, to integrate technical knowledge into daily activities. As much as possible these activities must reach the exposed community directly.*

The traditional disaster management message needs to be repackaged. However the development of creative and innovative awareness and training material is prohibitively costly for individual nations. *The pooling and sharing of awareness and training material must continue and be enhanced. In some instances the opportunity must be sought to develop awareness materials collectively that cost may be shared.*

**Group 7** reinforces the call for institutional strengthening. A matter discussed in more detail in the Legislative and Policy section.

**Table 1.2 Listing of Projects in the Caribbean**

***Hazard and Vulnerability Assessment & EWS***

	<b>Country</b>	<b>Project</b>	<b>Funding Agency</b>	<b>Summary</b>
1.	<b>T&amp;T</b>	Landslide hazard mapping & risk reduction	Gov't of T&T	
2.	<b>T&amp;T</b>	Community Flood EWS	Gov't T&T/CDERA	Following on Jamaica DIPECHO model
3.	<b>T&amp;T</b>	Seismic Hazard Vulnerability and risk assessment	Gov't of T&T	
4.	<b>Dominican Rep</b>	Geological and seismic risk	European Union	Installation of seismic station network in North-east, epicentre mapping & microzonation
5.	<b>Costa Rica</b>	EWS for landslides	CEPREDENAC/ASDI	Establishment of a system of training & strengthening local organisation
6.	<b>Grenada</b>	Kick Em Jenny volcano monitoring and EWS	CDB	
7.	<b>Guatemala</b>	<a href="#">Early Warning System</a>	<a href="#">World Bank</a>	
8.	<b>Costa Rica</b>	EWS for flooding	CEPREDENAC/GTZ/ECHO	Establishment of a system of training & strengthening local organisation
9.	<b>Mexico</b>	SIAT	<a href="#">Gov't of Mexico</a>	<a href="#">Early Warning System for Tropical Cyclones</a>
10.	<b>Mexico</b>	PRESISMICO	<a href="#">Gov't of Mexico</a>	<a href="#">Reduction of Seismic Risk</a>
11.	<b>Panama</b>	Flood EWS	CEPREDENAC/ASDI	Establishment of flood EWS in priority areas

### **Community Disaster Preparedness**

1.	<b>Jamaica</b>	Strengthening community capacity	DIPECHO	Community hazard and vulnerability assessment and training
2.	<b>St. Lucia</b>	Black Mallet/Maynard Hill landslide	CDB	Relocation of community and rehabilitation of affected site
3.	<b>Barbados</b>	Community preparedness activities	Gov't Bdos/CDERA	Reactivation of community based organisations and training
4.	<b>Guatemala</b>	Training and dissemination of knowledge	UNESCO	Community Education
5.	<b>St Lucia</b>	Community Disaster Preparedness	World Bank	Educating every household in the island on disaster preparedness
6.	<b>El Salvador</b>	Local emergency organisation	World vision	Community & municipal preparation and organisation
7.	<b>Dominican Rep</b>	Zonal minimization of risk	Intl Plan	Community risk assessment and response capacity building
8.	<b>Panama</b>	Education-Disaster prevention campaign	CEPREDENAC/Taiwan	Disaster prevention awareness through information dissemination
9.	<b>Nicaragua</b>	Prevention campaign	CEPREDENAC/IDB	Improved disaster information dissemination & mass communications training
10.	<b>Belize</b>	Community training programme	Gov't Belize	Development of local hazard plans

**Public Information, Education and Telecommunications**

22.	<b>BVI</b>	Emergency broadcast system	Gov't BVI	
23.	<b>Netherlands Antilles</b>	Emergency broadcast system	Gov't Netherlands Antilles	
24.	<b>Netherlands Antilles</b>	Public Education Program	Gov't Netherlands Antilles	New Website for DES h, Television Infomercials on Home/Business Prep , Radio programs for hurricane awareness in progress
25.	<b>Montserrat</b>	Communications Project 2000	Gov't of Mont/DFID	To relocate VHF repeater and improve VHF and HF communications

**Shelters**

26.	<b>Belize</b>	Shelters	IDB	Retrofitting hurricane shelter. Construction of regional shelters
27.	<b>Jamaica</b>	Shelter programme	Gov't Jamaica	Shelter inspection and marking, shelter management training
28.	<b>Montserrat</b>	Disaster Preparedness 2000	Gov't Mont/DFID	Construction and of 14 shelters

**Reconstruction and Recovery**

29.	<b>El Salvador</b>	Project MIRA - Hurricane Mitch	USAID	Post-Mitch reconstruction project
30.	<b>Dominican Rep</b>	Reconstruction- Hurricane Georges	IDB	Equipping emergency institutions, housing & bridge reconstruction, training for citizens
31.	<b>Dominica</b>	Emergency Recovery Project	World Bank	Sea defences reinstatement, community projects, retrofitting
32.	<b>Grenada</b>	OECS Recovery and Disaster Management Project	World Bank	

**Response and Capacity Building**

33.	<b>Montserrat</b>	Emergency Department Warehouse	Gov't Mont/DFID	Agreement in principal
34.	<b>St. Lucia</b>	Equipping NEMO and local committees	CDB	Providing offices with basic equipment for planning, preparing and responding to disasters
35.	<b>St. Lucia</b>	Training	Gov't SLU/Various	Number of courses ranging from damage assessment to SAR
36.	<b>Belize</b>	Institutional capacity	CDB	Construction of NEMO headquarters
37.	<b>Guatemala</b>	<b>Equipping of EOC</b>	<b>USAID</b>	<b>A regional model for an EOC has been set up</b>
38.	<b>Montserrat</b>	EOC Building Expansion	Gov't Mont/DFID	EDAN; Equipment for response institutions, "liderazgo" Reviewing and recommending staff proposal organisation structure, legislation etc. Consultation with local representatives New Automation, Warning and Emergency Communications system being put in place Upgrading technical personnel at the institutions of the SISVAB National disaster policy, plan and evaluation Reorganization the structure of emergency management system for a comprehensive approach Strengthening of national disaster prevention system Drafting
39.	<b>Dominican Rep</b>	Strengthening local training & risk management	DIPECHO	
40.	<b>Barbados</b>	Institutional strengthening of national disaster organisation	Gov't Bdos	
41.	Guatemala	Organisation of Department	USAID and CONRED	
42.	<b>Netherlands Antilles</b>	Automation of the EOC and Dept of Emergency Services	Gov't Neth Ant/ Federal	
43.	<b>El Salvador</b>	Preparation of national emergency systems	USAID/OFDA	
44.	<b>Costa Rica</b>	National disaster system	PNUD/OFDA	
45.	<b>Netherlands Antilles</b>	National disaster management system	Gov't Neth Ant/ Federal	
46.	<b>Nicaragua</b>	Preparedness assistance national disaster system	PNUD	
47.	<b>Barbados</b>	Legislation	Gov't Bdos	

**Planning and Mitigation**

48.	<b>Barbados</b>	Multi-hazard plan	Gov't Bdos	Review, development and consolidation of existing plans
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49.	<b>Panama</b>	Mitigation of high vulnerability zones- Floods & landslides	CEPREDENAC/IDB	Analysis investigation and development of contingency plans-areas threatened by floods and landslides
50.	<b>Antigua Barbuda</b>	PGDM		EC\$0.5m
51.	<b>Jamaica</b>	Hazardous material management	Gov't Jamaica	Hazardous materials database, plan review and public awareness
52.	<b>Belize</b>	Drainage	CDB	Improved drainage in Belize City. Expanded water system
53.	<b>BVI</b>	Mitigation and development planning framework	Gov't BVI	Development of mitigation strategies, policies, programmes etc including the administrative mechanism
54.	<b>El Salvador</b>	Strengthening the national COE	USAID/OFDA	
55.	<b>Panama</b>	Risk and disaster reduction programme	PNUD	Planning for the mobilization of national & international resources for prevention and mitigation in Darien Province

**Table 1.3 Priority Areas of Interest for Regional Cooperation**

Group 1	<b>Antigua Barbuda Dominican Republic Nicaragua Netherlands Antilles Mexico</b>	<p><b>&amp;</b> Sharing of scientific data</p> <p>Gathering and transfer of information within the region</p> <p>Studies in natural disasters and EWS</p> <p>A regional mechanism/library/resource for the sharing of information and experiences</p> <p>Transfer of Technology</p>
Group 2	<b>Jamaica  Cuba T&amp;T T&amp;T T&amp;T Netherlands Antilles Guatemala Mexico</b>	<p>Alerting systems</p> <p>Early Warning Systems</p> <p>Regional Tsunami EWS System</p> <p>Regional urban SAR capability</p> <p>Regional logistical arrangements (following a disaster</p> <p>More regional (rather than international) cooperation on the coordination of supplies for relief and recovery efforts</p> <p>Follow-up continuation of projects</p> <p>Vulnerability analysis</p>
Group 3	<b>Dominica  St. Lucia Guatemala</b>	<p>Telecommunication system and training</p> <p>Telecommunications</p> <p>Equipping</p>
Group 4	<b>Dominica  Dominica</b>	<p>Building codes for low income housing</p> <p>Retrofitting of vulnerable dwellings</p>
Group	<b>St. Lucia</b>	Community based disaster management

5	<b>El Salvador</b>	Urban Community preparations
Group 6	<b>Montserrat</b>	Scripting and Exercising National Disaster Plans
	<b>Montserrat</b>	Disaster Training in specific areas e.g. EOC Management, Radio Operators Training and Damage/Needs Assessments
	<b>Montserrat</b>	Exchange of staff between Disaster Offices to give experience and exposure of new disaster officials.
	<b>St. Lucia</b>	Stress Management
	<b>Belize</b>	Recovery Plans
	<b>Belize</b>	Relief supply tracking system
	<b>Belize</b>	Damage assessment training
	<b>Cuba</b>	Training and education
	<b>Jamaica</b>	Training
	<b>Ant &amp; Bar</b>	Training
	<b>Nicaragua</b>	Training
	<b>Barbados</b>	Increased disaster management training using training of trainers methodology
	<b>Guatemala</b>	Training
Group 7	<b>Costa Rica</b>	Project formulation and management
	<b>Barbados</b>	Institutional capacity enhancement for comprehensive integrated disaster management
	<b>Nicaragua</b>	Institutional strengthening
	<b>Don Rep</b>	Equipping & maintenance of response installations
	<b>Costa Rica</b>	Institutional Modernization
	<b>El Salvador</b>	Institutional strengthening & departmental strengthening
	<b>Netherlands</b>	A synergy of emergency management systems – similar set of standards among territories
	<b>Antilles</b>	
Group 8	<b>Barbados</b>	Comprehensive integrated disaster management

<b>Costa Rica</b>	Consolidation of national system
<b>Cuba</b>	Planning measures
<b>Dominican Republic</b>	Risk management and planning
<b>Dominican Republic</b>	Education on Risk management
<b>Jamaica</b>	Hazard mapping
<b>Mexico</b>	Communication and Coordination of actions for common phenomenon

### 1.3 Planning and Operations

75-85% of the member states have Standard Operating Procedures for most aspects of disaster management. The weak point was in the area of disaster recovery. Only 50% of the nations acknowledge procedure for this area.

These plans are also generally endorsed at the highest level and widely circulated. While the supporting agencies (80%) had emergency plans, many of these (50%) did not exercise their plans. DEMOs are establishing links to the private sector by Memoranda of Understanding (MoU). 70% of the responders had clearly defined the role of the private sector in their plans and this was supported by the signing of MoUs (35%). The ability of more countries to engage in MoUs may be hampered by their legislative position, discussed below.

Unfortunately, only half of the countries' plans included procedures for disaster recovery. *Recovery planning needs administrative and technical/training support.*

#### Telecommunications

Unsurprisingly VHF and HF were the most popular modes of communication after the telephone and just about half of the responders had Emergency Broadcast Systems in place. These were the Central American nations, the British Dependant territories and Jamaica, Cuba and the Dominican Republic.

*The responders (94%) want to see the telecommunications in the region improved. HF frequency seems a desirable route particularly with the increasing development of satellite access and this should be explored.*

#### Emergency Operations Centres

While everyone had EOCs, the effective equipping of these facilities and the training of staff (60% trained) to operate within them was found wanting. In fact the more decentralized the EOC the less capable it was (National 45% effectively equipped; alternate 35%, Local 25%).

*DEMO's must have a functioning EOC. The present EOC initiative by CDERA and SOUTHCOM are welcomed.*

#### Mitigation and Recovery

The score was poor for mitigation. While many countries were addressing the situation the actual application of the mitigation practice was found wanting. Even maintenance budgets showed much room for improvement, only 30% of the countries acknowledged an adequate provision.

There is some contradiction for recovery. Mechanisms were in place for recovery. Two-thirds of the countries had groups addressing this matter and it was acknowledged that the procedures tied into a damage assessment and needs analysis system. Yet when asked earlier under operating procedures, countries acknowledged that plans (50%) did not include recovery SoPs. It suggests that recovery is addressed in a fragmented (*rather than a holistic*) manner.

*Disaster recovery groups need planning and enforcement authority. Only 40 and 45 % of the responders respectively, acknowledged that the group addressing this matter had such authority. There is also the need for the health and private to enhance their recovery planning activities throughout the region.*

#### **1.4 Education**

Overwhelmingly the responding nations were undertaking all aspects of the education programme (70-90%). Yet, in their assessment of the impact of these initiatives 35% felt the programme was very good, while 30 and 25% respectively acknowledged that the impact was only good and fair. It may again suggest that the traditional disaster management message and approach needs to be repackaged as discussed earlier (page 11 – Group 6).

Table 1.4 gives a summary of the training being undertaken and still required in the region. Mass Casualty Management was regularly undertaken and similarly as popular as are Preparedness and Response Planning, Telecommunications and Shelter Management. Incident Command System training was generally undertaken intermittently as was the Management for Disaster Emergency Personnel.

Belize, Costa Rica, El Salvador, Nicaragua, Mexico and Grenada, while undertaking most of the courses, made the most frequent request for many of the various courses. Costa Rica Grenada and Nicaragua urgently required 7-10 of the courses. The Dominican Republic did make a request for Forest Fire Training and Grenada for Contingency Planning.

*While individual nations will need assistance in addressing their training needs Mitigation and Recovery Planning and Implementation needs a core course developed and disseminated in the languages of the ACS.*

**Table 1.4 Courses Undertaken and Required by the Countries**

<b>Required by D/EMO</b>		<b>Disaster Management Courses</b>	<b>Undertaken by D/EMO</b>	
<b>As soon as possible</b>	<b>Urgently</b>		<b>Regularly</b>	<b>Intermittently</b>
Grenada GT&CI Mexico Neth Antill Panama	Costa Rica Nicaragua	(a) Community-based Disaster Management	Ant & Bar Belize BVI Cuba Dom Rep Guatemala Jamaica Mexico Montserrat	Dominica El Salvador Panama St. Lucia T'dad & T'bgo
Cuba Dom Rep GT&CI Mexico Nicaragua	Barbados Costa Rica Grenada Montserrat Neth Antill	(b) Damage Assessment and Need Analysis	Ant & Bar Belize Dom Rep Guatemala Jamaica Mexico T'dad & T'bgo	BVI Dominica El Salvador St. Lucia Nicaragua
Belize Cuba Dom Rep Guatemala Mexico Nicaragua Panama	Barbados Costa Rica Dominica Grenada	(c) Disaster Environmental Management (Public Health)	Ant & Bar GT&CI T'dad & T'bgo	BVI Belize El Salvador Mexico Montserrat Neth Antill Nicaragua St. Lucia
Dom Rep GT&CI Mexico Nicaragua Panama	Barbados Costa Rica Belize Montserrat Neth Antill T'dad & T'bgo	(d) Donation and Relief Supply Management	Ant & Bar El Salvador Guatemala Jamaica	BVI Belize Dominica Grenada Mexico Nicaragua St. Lucia
Costa Rica Dom Rep Grenada Mexico Neth Antill	GT&CI Nicaragua	(e) Emergency Operation Centre	Ant & Bar BVI Belize Cuba Jamaica Montserrat	Barbados Dominica El Salvador Guatemala Mexico Nicaragua Panama St. Lucia T'dad & T'bgo
Costa Rica Dom Rep El Salvador GT&CI Guatemala Mexico Panama	Grenada Neth Antill	(f) Incident Command System	BVI Belize	Ant & Bar Barbados Dominica Jamaica Montserrat St. Lucia T'dad & T'bgo
Costa Rica Cuba Dom Rep El Salvador GT&CI Mexico	Belize Grenada Neth Antill Panama	(g) Management for Disaster Emergency Personnel	Ant & Bar Barbados Guatemala Jamaica Mexico Montserrat Nicaragua	BVI Belize Dominica Mexico St. Lucia T'dad & T'bgo
Cuba Dom Rep El Salvador Mexico Panama	Costa Rica	(h) Mass Casualty Management (Medical Management of Disasters)	Barbados Belize Dominica Guatemala Jamaica Montserrat Neth Antill T'dad & T'bgo	Ant & Bar BVI GT&CI Grenada Nicaragua St. Lucia
Belize Dom Rep El Salvador GT&CI Guatemala Jamaica Mexico Neth Antill Panama	Barbados Costa Rica Dominica Grenada T'dad & T'bgo	(i) Mitigation & Recovery Planning and Implementation	Cuba Montserrat	Ant & Bar BVI Belize St. Lucia

<b>Required by D/EMO</b>	<b>Disaster Management Courses</b>	<b>Undertaken by D/EMO</b>	<b>Required by D/EMO</b>	<b>Disaster Management Courses</b>
Dom Rep Grenada Guatemala Mexico T'dad & T'bgo	Costa Rica El Salvador	(j) Preparedness and Response Planning and Implementation	Ant & Bar BVI Barbados Belize Cuba Dominica Jamaica Mexico Montserrat Neth Antill Panama	GT&CI St. Lucia
Barbados Cuba Dom Rep GT&CI Mexico	Belize Costa Rica Dominica El Salvador Grenada Guatemala Nicaragua T'dad & T'bgo	(k) Project Management	Montserrat Neth Antill Nicaragua	Ant & Bar BVI Jamaica Panama St. Lucia
Dom Rep GT&CI Guatemala Mexico Panama	Costa Rica El Salvador Grenada Nicaragua T'dad & T'bgo	(l) Public Information (Mass Communication ) for Disaster/ Emergency Personnel	Ant & Bar Belize Cuba Mexico Montserrat	BVI Barbados Dominica Jamaica St. Lucia Neth Antill Nicaragua
Costa Rica Cuba GT&CI Mexico Nicaragua	Barbados Belize Grenada Jamaica T'dad & T'bgo	(m) Search and Rescue	Belize Dom Rep Mexico Montserrat Neth Antill Nicaragua Panama	Ant & Bar BVI Dominica El Salvador St. Lucia
Costa Rica Guatemala Mexico	Dom Rep El Salvador GT&CI Neth Antill Nicaragua	(n) Shelter Management	Ant & Bar BVI Barbados Belize Dominica Jamaica Mexico Montserrat Nicaragua T'dad & T'bgo	Grenada Panama St. Lucia
Costa Rica Cuba Dom Rep Jamaica Mexico Montserrat Panama T'dad & T'bgo	Belize El Salvador Grenada Guatemala Nicaragua	(o) Stress management for emergency responders	Mexico	Ant & Bar BVI Barbados Belize Dominica GT&CI Nicaragua St. Lucia
Grenada Mexico Neth Antill Panama	Costa Rica El Salvador Nicaragua	(p) Telecommunications for Emergencies/ Disasters	Ant & Bar BVI Barbados Belize Cuba Dominica Dom Rep Guatemala Montserrat Nicaragua	GT&CI Jamaica Mexico Neth Antill St. Lucia T'dad & T'bgo
Belize Cuba Mexico T'dad & T'bgo	Costa Rica Grenada Montserrat Neth Antill Nicaragua	(q) Warehouse Emergency Supplies Management	BVI Dom Rep El Salvador Guatemala	Ant & Bar Barbados Belize Dominica Jamaica Panama Mexico Nicaragua St. Lucia
Belize Cuba GT&CI Mexico	Neth Antill Nicaragua	(r) Table Top, drills and simulation exercises	Ant & Bar Belize Dom Rep Guatemala Jamaica Montserrat Panama	BVI Barbados Dominica GT&CI St. Lucia T'dad & T'bgo

Required by D/EMO	Disaster Management Courses	Undertaken by D/EMO	Required by D/EMO	Disaster Management Courses
Dom Rep		(s) Other Contingency Planning – Jamaica  Curso Capacitación para Instructores Curso Administración para Desastres Curso Incendios Forestales Curso Materiales Peligrosos Curso la Comunicación en Tiempo de Desastres	Jamaica Dom Rep	
Dom Rep		Cursos listos para su ejecución Curso Introducción a los Desastres Curso Elemental de Primeros Auxilios Curso Organización Local para situaciones de Emergencia Curso Plan Familiar Curso Plan Comunal		
		Cursos en fase de elaboración Curso Manejo Psicológico con posterioridad en los Desastres Curso Primeros Auxilios Básico Curso Primeros Auxilios Avanzados Curso para Voluntarios Curso Introducción al manejo de los Desastres Curso sobre Manejo de Crisis		

## 1.5 Interstate and Sub-regional Mechanisms

### National Disaster Management System:

The national disaster management system in the responding nations is centrally organised. However the areas of responsibility differ among states. Half 50% of the responding DEMOs acknowledged authorized ownership for managing all aspects of disaster management cycle. Nevertheless, most agencies (65-90%) were involved in managing a full range of disaster management activities. *Areas which seemed to present challenge were:*

1. *Implementing and monitoring prevention programmes*
2. *Implementing the national recovery programme and*
3. *Financing all areas of disaster management activities (from preparedness through mitigation and recovery).*

*Item 1 is expected for natural hazards such as earthquakes. Items 2 and 3 are areas which need to be strengthened in the region.*

### Municipal/local Authority Disaster Management Execution:

The disaster management programme was executed by the municipal/local authority in almost half of the countries which responded. This was especially true for multi-island states where disaster preparedness had the necessary administrative, human and physical resources. These resources were not unexpectedly acknowledged as being limited during disasters.

The responsibility of the municipal or local authority was restricted to preparation in El Salvador. In Nicaragua preparedness and administrative structures were available. Overall all the responders identified shortfalls in the financial resources at the municipal level. Two areas also need enhancing:

1. Mitigation activities at the local level and
2. Recovery initiatives executed through the municipal authorities.

*Despite the many initiatives carried out in the region to promote mitigation and more recently recovery, this executing ability is not saturating the local authorities, as it should. Projects need to focus not only on national initiatives, but also upon impacting at the local level.*

### Sub-regional Mechanisms:

Many of the responders (70%) stated that there were formal agreements with immediately adjacent countries. It was acknowledged by 40% of the countries, that there was still a need to improve arrangements for making the agreements functional. The following are the authority instruments for the relationships stated:

- Inter-Antillean Agreement and the French Dutch Accord
- Sub-regional focal groups-Agreement establishing CDERA

As expected the CDERA and CEPREDENAC groupings were identified as the regional disaster management mechanisms. Some responders also went on to identify the following disaster mechanisms:

- USAID
- Security Commission (Panama)
- TUXTLA (Panama)
- Arrangements with public and private universities (Panama)
- Regional Security System

### Policy:

Most of the responders (75%) have a national disaster management policy. The exceptions being Trinidad and Tobago, Grenada, Barbados. In the Netherlands Antilles, policy is the responsibility of the individual islands rather than a territorial national policy. As a sign of the increasing importance placed on disaster management, 55% of the responding territories had publicized or revised their national disaster policy between 1995 and 2000. The notable exception being Cuba, which had a comprehensive national disaster policy from 1966.

The encompassing nature of the legislation, to address all spheres of disaster management, varies from country to country. It was common to find that disaster relief and recovery were not adequately addressed, as was mitigation.

*Governments must be encouraged to establish relief, and recovery priorities and policies in advance. Disaster mitigation must be addressed as an intrinsic part of development programmes and capital works. Policy must be implemented with appropriate financial support. This funding can be sourced both internally and by combined effort with other ACS countries.*

## **1.6 Budgetary Legislation and Institution**

### Institution and Legislation:

The perception of an administrative or functional approach towards Disaster/Emergency Management Organisations (DEMO) may be inferred by the Ministries/offices to which it is accountable. Many of the DEMOs (55 %) are established within the offices of the head of state or the head of government. In the latter cases the Vice President or Deputy Governor's office has responsibility for the DEMO. This might suggest the importance given to disaster management in such countries as well as the establishment of a direct chain of command.

In other cases an administrative or functional approach is inferred. For example, in Antigua and Barbuda, Barbados, Mexico and El Salvador the ministry for local state

affairs (such as Home Affairs and the Interior Ministries) are responsible. Other DEMOs are given a more functional grouping and are divided among Communications and Works, National Security and Water and Housing.

A significant 90% of the respondents acknowledged legislation specifically addressing disasters in their countries. Indeed only 25% of the DEMOs were not established by law, many of these being activated by Cabinet. The legislation in most cases (75%) allowed for the “*Declaration of a National Disaster*”, although less countries allowed for declaring “*Disaster areas*”. A large percentage (70%) also stated that the legislation identified the DEMO.

Yet it is clear that in the Eastern Caribbean in particular, the legislation that existed generally did not go far enough in providing the link to the DEMO, its authority in normal and disaster times and the chain of command. Indeed overall 50% of all of the respondents indicated that the chain of command during a disaster was clearly stated.

*Legislation must not only clarify the chain of command, but also establish the authority for directing disaster recovery. There is a need to advocate for the implementation of comprehensive disaster management legislation in the Eastern Caribbean states in particular. The CDERA model legislation is valuable in furthering this process. In other instances existing legislation needs reworking to make it more comprehensive and in particular clarify the authority of the DEMO and the chain of command during a disaster.*

#### Budget:

Budgets showed a predictable and recurrent pattern. Small island states generally received allocations of between US\$200,000 to 500,000 per annum. Larger nations such as Jamaica, Belize and Panama received US\$1.3-2.2 million per annum in keeping with their larger area responsibility. The anomaly here was Montserrat, which received a sum comparable with the larger territories despite its size. This figure was understandable given the recent history of that island.

Costa Rica, El Salvador, Montserrat and St. Lucia each used the “lions share” (60-89%) of their budgets for programme activities. A few countries (Barbados, Belize and Grand Turks and Caicos Islands) allocated this share 55-70% to “other activities”).

*Whatever the activity initiated, beneficiary countries must contribute financial as well as in-kind resources towards the project. This will ensure ownership adoption and increase the chances of a successful and sustainable activity.*

## 1.7 Conclusion

The analysis of the survey responses has identified a number of areas for mutual cooperation within the region. These are:

- Hazard Assessment for floods and earthquakes
- Early warning Systems for floods and storm surge
- Combined efforts for education and awareness activities as well as training
- Enhancing the DEMO and strengthen the skill capacity of its staff

From the findings more than 5 countries will benefit from the initiatives identified. Where possible mitigation and recovery initiatives should be included in these cooperative activities. Cooperation in agricultural pest management and forestry can also be explored but at a more sub-regional level. Table 1.5 provides a summary of these cooperation areas and projects presently on going in the region. Areas suggested by the countries to be explored are included in the matrix in *italics*.

The advocacy role of the ACS in matters of legislation, policy and regional and international financing is restated. In particular mitigation and recovery are areas for attention in legislation and policy. The promotion of building standards and practice as well as improving the regional emergency communications (through the HF band) were highlighted and will need to be pursued.

The consultant supports the practice that the initiatives do not remain technical applications, but translate directly to the exposed communities of the countries in which the initiative is applied. The responding nations are emphatic that the resident technical expertise in the region be utilized. It is the view of the consultant that beneficiary countries should, as much as possible, also be encouraged to contribute to the expenditure of implementing the initiatives that they may take ownership and ensure that the project is sustained.

Table 1.5 Cooperation Areas and Projects Already Ongoing & Areas to be Pursued

<b>Hazard Analysis</b>	<b>Early Warning Systems</b>	<b>Training Education and Awareness</b>	<b>DEMO Facility &amp; Staff Skills</b>	<b>Advocate Legislation Policy &amp; Finance</b>
Flood Analysis (T&T)	Flood EWS (T&T Costa R Panama)	Community Disaster Preparedness (Jca SLU Bdos El Sal Dom Rep Belz)	DEMO Building (SLU Belz Mont)	Legislation Bdos
Seismic Risk Assessment (T&T Dom Rep Gda)	Volcano EWS (Gda)	Shelters (Jca)	DEMO Equipment (SLU Neth Ant Dom Rep Mont)	Re-organising/strengthening system (Nica Neth Ant Costa R Bdos)
	Storm Surge (CMHI Bdos SLOSH Puerto R)	Regional Training Prog (ACS List Project # 4)	DEMO Staff (El Salv)	Reconstruction Financing (El Salv Dom Rep OECS)
	Warning and Mitigation Meteorological Events (ACS List Project # 10)	Disaster Handbook (ACS List Project #5)	Shelter enhancement Belize Jca Monts	
			Emergency Broadcast System (BVI Neth Ant)	
<i>Hazard mapping (Jca)</i>	<i>EWS (Jca Cuba T&amp;T)</i>	<i>Sharing &amp; transfer of data (Ant &amp; Barb Dom Rep Neth Ant)</i>	<i>Telecommunications (Dom SLU)</i>	
		<i>Community Preparedness (SLU Dom)</i>	<i>Institutional Strengthening (Bdos Nica Costa R Dom Rep El Salv Neth Ant)</i>	
		<i>Training (Mont SLU Belz Cuba Jca Ant &amp; Bnica Bdos)</i>		

ASSOCIATION OF CARIBBEAN STATES  
SURVEY OF THE STRENGTHS, WEAKNESSES AND PROJECTS FOR DISASTER MANAGEMENT IN ACS COUNTRIES

**2.0 FINDINGS AND RECOMMENDATIONS**

<b>Category</b>	<b>Finding</b>	<b>Recommendation</b>	<b>Action Plan</b>	<b>Date</b>	<b>Custodian</b>
<b>1.0 Q 1.2 Legislation</b>	In Eastern Caribbean Disaster Management authority instruments did not clearly state authority of DEMO	Continued advocacy for implementation of comprehensive disaster management legislation (note CDERA's Draft Legislation)			
	The Eastern Caribbean generally is without disaster management legislation.	Legislation must not only clarify the chain of command but establish the authority for directing disaster recovery			
	Legislation generally did not establish the chain of command.				
<b>Q 1.3 Interstate and Sub-regional Mechanisms:</b>	Countries found challenges with implementing of the national recovery programme	See 1.4			
	Improved financing all areas of disaster management activities				

	<p>Mitigation activities at the local level and Recovery initiatives executed through the municipal authorities.</p>	<p>Projects need to focus not only on a national initiatives but upon impacting at the local level.</p>			
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<b>Category</b>	<b>Finding</b>	<b>Recommendation</b>	<b>Action Plan</b>	<b>Date</b>	<b>Custodian</b>
<b>Q 1.4 Policy</b>	It was common to find that disaster relief and recovery were not adequately addressed, as was mitigation.	Governments must be encouraged to establish relief, and recovery priorities and policies in advance.  Disaster mitigation must be addressed as an intrinsic part of development programmes and capital works.			
	<b>AREAS WHICH SEEMED TO PRESENT CHALLENGE WERE:</b> <b>1. IMPLEMENTING AND MONITORING PREVENTION PROGRAMMES</b> 2. Implementing the national recovery programme and 3. Financing all areas of disaster management activities (from preparedness through mitigation and recovery).	<b>ITEM 1 IS EXPECTED FOR NATURAL HAZARDS SUCH AS EARTHQUAKES. ITEMS 2 AND 3 ARE AREAS WHICH NEED TO BE STRENGTHENED IN THE REGION.</b>			
<b>2.0 Risk Assessment</b>	8 countries are at different stages of the assessment process for earthquakes	As part of the upcoming Seismic Research Unit initiative gather the players who have or are in the process of completing			

		their EQ risk assessments to share experiences and knowledge.			
	Flooding is of regional concern, yet, less than half the countries have completed the quantified occurrence of flooding although two-thirds (66%) of the nations at risk had mapped the flood impact.	Seek ways to share assessment and EWS development experiences/methodologies and to solicit funding for such activities in the member states.			

<b>Category</b>	<b>Finding</b>	<b>Recommendation</b>	<b>Action Plan</b>	<b>Date</b>	<b>Custodian</b>
<b>2.0 Risk Assessment Continued</b>	Storm surge risk assessment and an EWS are of great importance to the region given our settlement patterns and economic development on coastal plains.	The knowledge and experiences of those territories further ahead in the risk assessment process for storm surges should be harnesses to develop: <ul style="list-style-type: none"> <li>▪ To help adjacent countries complete their hazard assessment in the shortest possible time.</li> <li>▪ An effective regional storm surge EWS (that the surprise of surges similar to events like Hurricane Lenny might not be repeated).</li> </ul>			
	The Central American Grouping and Cuba have identified Forest Fires as a priority risk. Progress in risk assessments had not proceeded as rapidly as	The focus for collaboration here should be the completion of the risk assessments including the mapping and the simultaneous development of response plans. The latter should include and/or enhance existing sub regional cooperation arrangements in			

	with other hazards.	the area of forest fires. Further educational/training resources should be combined to address the difficult deforestation issue facing all territories.			
	The pink mealy bug was a common concern to five countries (Antigua, BVI, Dominica, Jamaica and Montserrat).	Some progress has been made introducing a natural enemy to the mealy bug and citrus black fly in the Southern Caribbean. These initiatives can be explored to the benefit of farmers in the region.			

<b>Category</b>	<b>Finding</b>	<b>Recommendation</b>	<b>Action Plan</b>	<b>Date</b>	<b>Custodian</b>
<b>2.0 Risk Assessment Continued</b>	Other factors:  Structural and other mitigation issues as well as land-use/risk exposure continue to increase risk.	<i>Present regional efforts to address structural issues should be supported.. These include dissemination of information and implementation of building codes for dwellings and other structures. Training for engineers and artisans in best practice for construction and retrofitting.</i>			
	Risk assessments are presently being undertaken by experts within the region.	Whichever initiatives are chosen every effort must be made to involve/include skills and knowledge which resides in the region.			
	Too few countries acknowledged the involvement of the private sector, land-use and development planning authorities in their risk assessments.	The circle of discussion and knowledge need to be enlarged to include more involvement of the private sector, the land-use and development planning authorities.			
	Overwhelmingly dengue including its haemorrhagic strain was selected as a biological area of concern	A concerted combined regional and national effort is required to greatly minimize this threat.			
<b>3.0 Planning and Operations</b>	Too few nations had recovery plans and many did not have Memoranda of Understanding in place with the private sector.	Recovery planning needs administrative and technical/training support. The legal issues discussed need to be resolved to allow Memoranda of Understanding to be developed.			

<b>Category</b>	<b>Finding</b>	<b>Recommendation</b>	<b>Action Plan</b>	<b>Date</b>	<b>Custodian</b>
<b>3.0 Planning and Operations continued</b>	The responders (94%) want to see the telecommunications in the region improved.	HF frequency seems a desirable route particularly with the increasing development of satellite access and this should be explored.			
<b>4.0 Education and Training</b>	<p>Despite the effort being made, countries recognise the need for greater effectiveness of their education and awareness programmes.</p> <p>The traditional disaster management message needs to be “repackaged”. However, the development of new and innovative education material is expensive.</p>	By pooling the collective resources within the region, new materials can be generated and the cost of developing creative materials/approaches shared.			
	Countries generally were carrying out the spectrum of training. Individual needs still existed. Mitigation and Recovery was found wanting.	Mitigation and Recovery Planning and implementation needs a core course developed and disseminated in the languages of the ACS.			

<b>Category</b>	<b>Finding</b>	<b>Recommendation</b>	<b>Action Plan</b>	<b>Date</b>	<b>Custodian</b>
<b>5.0 Projects, Budgets and Strategic Plans</b>	Disaster management initiatives are often viewed as a tenuous link to development initiatives.	Need to widen the process of consultation and to advocate strongly to make disaster management an integral part of development financing			
	Need to integrate technical activities directly with the affected community.	Whatever the project e.g. risk assessment, technical material must not be the core activity. Rather the public must be made aware of the usefulness of the material and training programmes establish, to integrate technical knowledge into daily activities. As much as possible these activities much reach the affected community directly.			
	The traditional disaster management message needs to be repackaged. However the development of creative and innovative awareness and training material is prohibitively costly for individual nations	The pooling and sharing of awareness and training material must continue and be enhanced. In some instances the opportunity must be sought to develop creative awareness materials collectively that cost may be shared.			
	Many countries already allocate the lions share of their budget to programme implementation.	<i>Whatever the activity initiated beneficiary countries must continue to contribute financial as well as in-kind resources towards the project. This will ensure ownership adoption and increase the chances of a successful and sustainable activity.</i>			

## Appendix 1 List Of Contact Information

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## Appendix 2 Survey Instrument

### EVALUATION OF THE STRENGTHS, WEAKNESSES AND PROJECTS BEING UNDERTAKEN BY THE COUNTRIES OF THE ACS IN THE AREA OF MANAGEMENT OF NATURAL DISASTERS

#### ***PURPOSE OF THE QUESTIONNAIRE***

*The purpose of this questionnaire is to evaluate programmes to identify and promote common cooperation priorities for prevention, mitigation and management of natural disasters. This is in keeping with the intention of the Agreement between Member States and Associate Members of the Association of Caribbean States for Regional Cooperation on Natural Disasters.*

*The survey seeks to assess gaps in risk assessments, local and sub-regional mechanisms, standards and laws, policies and programmes in the region. From analysis of the data, areas of mutual interest in disaster management will be identified for participation by member states. This approach will make the best use of limited funding in the region, while strengthening the position of member states negotiating assistance from regional and international organisations.*

Respondents are given the opportunity to identify the areas that they would wish to see cooperation promoted based upon their own present disaster management focus.

#### ***Instructions for completion of the questionnaire***

The questionnaire should be completed by the head of the disaster/emergency management organisation or their designate. The instrument uses **yes/no reply options**. However, as such an approach can give an incomplete picture, a few ranked/scaled and narrative questions have been included throughout the survey.

For **completion by hand**, simply ***tick the appropriate options and complete the narrative questions.***

For completion of this survey **on a computer**, please: ***delete the inappropriate YES/NO option leaving the chosen answer. Where requested, tick the appropriate box and type in the answer to the narrative questions.***

The estimated time to completion is 90 minutes. Thank you for your assistance.

Please return this questionnaire to the sending organisation **on or before the September 15, 2000** by fax or email.

### **1.0 DISASTER /EMERGENCY MANAGEMENT ORGANISATION**

General information regarding the D/EMO as an institution, legislation and policy.

#### **1.1 Identification of the Disaster/Emergency Management Organisation (D/EMO)**

*Please complete the following:*

(a)	D/EMO Name:
(b)	Address:
(c)	Telephone No.:
(d)	Facsimile No.:
(e)	Email:
(f)	Name and title of the Head of Organisation:
(g)	Name and title of representative of the organisation (if there is no organisational head designated):
(h)	Name and title of respondent (if different from above):

#### **1.2 Authority of the D/EMO**

*Please complete the following*

(a) Responsibility for the D/EMO lies with:

i/      The Ministry of

---

ii/ The Military

---

iii/ Other?

---

Answer **yes or no** to the following applicable questions:

### **COUNTRIES WITH DISASTER LEGISLATION**

- |     |  |               |
|-----|--|---------------|
| (b) | Does the country have legislation specifically addressing disasters?   | <b>YES/NO</b> |
| (c) | Does the disaster legislation specifically identify the D/EMO?<br><i>If no, please see 1.2 (l)</i>                 | <b>YES/NO</b> |
| (d) | Does the legislation state a designated head for this D/EMO?   | <b>YES/NO</b> |
| (e) | Does the legislation define the role of the D/EMO?   | <b>YES/NO</b> |
| (f) | Does the legislation define the responsibility of the D/EMO?   | <b>YES/NO</b> |
| (g) | Does the legislation clearly state the authority of the D/EMO in normal times?                                     | <b>YES/NO</b> |
| (h) | Does the legislation clearly state the authority of the D/EMO during disasters/emergencies?                        | <b>YES/NO</b> |
| (i) | Does the legislation clearly state the chain of command, with reference to the D/EMO, during a disaster situation? | <b>YES/NO</b> |
| (j) | Does the legislation allow for the declaration of a national disaster?   | <b>YES/NO</b> |
| (k) | Does the legislation allow for the declaration of disaster area(s)   | <b>YES/NO</b> |

*Countries with no legislation identifying the D/EMO*

- |     |   |               |
|-----|---|---------------|
| (l) | <i>If the answer to question 1.2 (b) was no, by what authority does the D/EMO function?</i> |               |
|     | i/ The D/EMO is established by the Head of State  | <b>YES/NO</b> |
|     | ii/ The D/EMO is established by Head of Government  | <b>YES/NO</b> |
|     | iii/ The D/EMO is established by Cabinet  | <b>YES/NO</b> |
|     | iv/ (Other?)The D/EMO is established.....   |               |
| (m) | Does this authority specifically identify the D/EMO?  | <b>YES/NO</b> |
| (n) | Does this authority state a designated head for this D/EMO?                                 | <b>YES/NO</b> |
| (o) | Is there a designated head appointed to the D/EMO?  | <b>YES/NO</b> |
| (p) | Does the authority clearly state the authority of the D/EMO in normal times?                | <b>YES/NO</b> |

- (q) Does the authority clearly state the authority of the D/EMO during disasters/emergencies? **YES/NO**
- (r) Does the authority clearly state the chain of command, with reference to the D/EMO, during a disaster situation? **YES/NO**
- (s) Are there other agreements/instruments of authority which dictate the role and functions of the D/EMO? *(please state)* **YES/NO**

### 1.3 National and Regional Disaster Management System

Answer **yes or no** to 1.3 (a & b) and **tick** the appropriate answer in the matrix 1.3 (c)

#### NATIONAL DISASTER MANAGEMENT SYSTEMS - DMS - (CENTRALISED)

- (a) Is there a national disaster management system for the country? **YES/NO**
- (b) Is the national disaster management system (DMS) centrally organised? **YES/NO**
- (c) For which of the following disaster management functions is central government responsible?

Phases of disaster Management	Development of national programme	Implementation of the programme	Monitoring the programme	Financing of the programme
Preparedness				
Prevention				
Mitigation				
Response				
Recovery				

Answer **yes or no** to 1.3 (d) and **tick** the appropriate answer in the matrix 1.3 (e)

#### FOR COUNTRIES WITH FEDERAL ADMINISTRATIVE ARRANGEMENTS

- (d) Are the federal jurisdictions/states responsible for aspects of the disaster management system DMS? **YES/NO**
- (e) For which of the following areas of disaster management functions is the federal government responsible? *(Please tick)*

Phases of disaster Management	Development of national programme	Implementation of the programme	Monitoring the programme	Financing of the programme
Preparedness				
Prevention				
Mitigation				
Response				
Recovery				

- (f) Are the federal states legally obligated to report to the national D/EMO for the activities identified in (e) above? **YES/NO**

**FOR COUNTRIES WHERE THE MUNICIPAL/LOCAL AUTHORITY EXECUTES ASPECTS OF THE DISASTER MANAGEMENT PROGRAMME**

*Please complete the matrix by using (Y) yes; (N) no; (I) incomplete*

(g) Under the headings in the left column, is the municipal/local authority able to support the DMS within its administrative area?					
Capability by	Preparedness	Prevention	Mitigation	Response	Recovery
<b>Administrative structure</b>					
Available human resources					
Available physical resources					
Available financial resources					

## DISASTER MANAGEMENT AGREEMENTS

(h) Are formal Agreements (for disaster management) in place for cooperation with and among immediately adjacent countries? **YES/NO**  
*(Please list these Agreements e.g. country to country agreements for medical assistance; assistance from military/civil defence of adjacent country.)*

(i) Have arrangements been put in place to make the Agreement functional? **YES/NO**

(j) Does the country participate in any regional disaster response mechanisms? **YES/NO**

(k) Which regional disaster mechanisms does the country participate in? CEPREDENAC **YES/NO**

CDERA **YES/NO**

Other? *(Please name)*

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Other? *(Please name)*

---

### 1.4 Disaster Management Policy

Answer **yes or no** to question 1.4 (a) and yes (**Y**); no (**N**) or Incomplete (**I**) to question 1.4 (b). Please give the date for the policy (if known) 1.4 (c):

(s) Does the country have a stated national disaster policy? *(If no go to 2.0)* **YES/NO**

(s) Does the policy specifically address: *Please answer yes (Y); no (N) or Incomplete (I)*

i/ disaster prevention?	Y	N	I
ii/ disaster preparation?	Y	N	I
iii/ disaster mitigation?	<b>Y</b>	<b>N</b>	<b>I</b>
iv/ disaster response?	<b>Y</b>	<b>N</b>	<b>I</b>
v/ disaster relief?	<b>Y</b>	<b>N</b>	<b>I</b>
vi/ disaster recovery?	<b>Y</b>	<b>N</b>	<b>I</b>
vii/ public information with respect to disasters/emergencies?	<b>Y</b>	<b>N</b>	<b>I</b>

(c) In what year was the national disaster policy publicized/revised

**(s) NATURAL HAZARDS RISK ASSESSMENT**

***Rank the risk of exposure to the following natural hazards by your organization by placing a tick in the appropriate box:***

**2.1 RANKING**

Hazards	First Priority	Second Priority	Not a threat
(s) Earthquakes			
(t) Volcanic eruptions			
(u) Tsunamis			
(v) Tropical Storms /Hurricanes			
(w) Tornados			
(x) Drought			
(y) Forest Fires			
(z) Flood			
(aa) Landslides			
(bb) Storm Surges			
(cc) Epidemics			
(dd) Epizootics			
(ee) Agricultural plagues			

**2.2 Biological**

***Specify three priority areas of interest for the following hazards at this time:*** e.g. Epidemics Malaria

Denque  
Cholera

		Areas of Interest
(a) Epidemics	i/	_____
	ii/	_____
	iii/	_____
(b) Epizootics	iv/	_____
	v/	_____
	vi/	_____
(b) Agricultural plagues	vii/	_____

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### 2.3 State of Risk Assessment

Completion of the following question gives an indication of the status of risk assessment for specific hazards.

Using the letters **Y** – yes  
**N** – No  
**I** – Incomplete

answer the following appropriate questions in the matrix.

Hazards:

	Has a hazard analysis been <b>quantified</b> for the following hazards?	Has the area of potential/real impact been mapped?	Have associated hazard vulnerability assessments been completed?	Has an <b>early warning system</b> been established for this hazard?
(s) Earthquakes				
(t) Volcanic eruptions				
(u) Tsunamis				
(v) Tropical storms/ Hurricanes				
(w) Tornado				
(x) Drought				
(y) Forest Fires				
(z) Flood				
(aa) Landslides				
(bb) Storm surge				
(cc) Epidemic				
(dd) Epizootic				
(ee) Agricultural				

#### Common Priority Areas for risk assessment and early warning systems

(n) Which two hazard risk assessments would you wish to prioritize for development?

I/  
II/

- (o) Which two hazard early warning systems would you wish to prioritize for implementation?  
 I/  
 II/

**Other factors which increase the risk to natural hazards**

- (p) Are there other factors (e.g. settlement patterns/construction techniques/deforestation etc.), which increase the risk and impact of natural hazards in your country? **YES/NO**

- (q) In the space below, give three (3) areas on which the D/EMO and its partners are concentrating to reduce these "other factors":

I/

II/

III/

- (r) In the space below, give three (3) areas on which the D/EMO and its partners *would like to* concentrate to reduce these "other factors":

I/

II/

III/

**INVOLVEMENT OF EXPERT AND OTHER AGENCIES IN RISK ASSESSMENT**

- (s) Are any of the risk assessment being undertaken by the Country's expert agencies of the particular hazard? **YES/NO**  
*(Please name agency)*

- (t) Are any of the risk assessments being undertaken by expert agencies (other than the national institution), from within the region? **YES/NO**  
*(Please name agency)*

- (u) Are the following agencies participating in the risk assessments presently being undertaken?  
 i/ The development planning authorities? **YES/NO**  
 ii/ **The private sector?** **YES/NO**

- iii/ The national agencies concerned with disaster mitigation
  - Public Works? **YES/NO**
  - Engineering bodies? **YES/NO**
  - Land-use planning authorities? **YES/NO**
  - Other? **YES/NO**
- iv/ Other agencies responsible for disaster response and recovery? **YES/NO**

### 3.0 DISASTER/EMERGENCY PLANNING AND OPERATIONS

#### 3.1 Preparedness

Answer **Y** – yes

**N** – No

**I** – Incomplete

to the following applicable questions

- |     |   |          |          |          |
|-----|---|----------|----------|----------|
| (a) | Is there a current national disaster/emergency plan?  | <b>Y</b> | <b>N</b> | <b>I</b> |
| (b) | Do standard operating procedures exist to support the plan?   | <b>Y</b> | <b>N</b> | <b>I</b> |
| (c) | Do the standard operating procedures detail procedures for:   |          |          |          |
|     | i/ Disaster/emergency preparations  | <b>Y</b> | <b>N</b> | <b>I</b> |
|     | ii/ Warnings and alerts   | <b>Y</b> | <b>N</b> | <b>I</b> |
|     | iii/ Disaster/emergency response  | <b>Y</b> | <b>N</b> | <b>I</b> |
|     | iv/ Disaster/emergency recovery   | <b>Y</b> | <b>N</b> | <b>I</b> |
|     | and v/ A current 24 hour emergency contact list   | <b>Y</b> | <b>N</b> | <b>I</b> |
| (a) | Has the plan been exercised in the last 2 years?  | <b>Y</b> | <b>N</b> | <b>I</b> |
| (b) | Does the plan have the endorsement of the country's Head of Government?   | <b>Y</b> | <b>N</b> | <b>I</b> |
| (c) | Is this Plan circulated among the supporting agencies for disaster/emergency management?                            | <b>Y</b> | <b>N</b> | <b>I</b> |
| (d) | Do most of these supporting agency have plans in place for disaster/emergencies?                                    | <b>Y</b> | <b>N</b> | <b>I</b> |
| (e) | Have most of these supporting agencies exercised their plans recently (within the last 2 years)?                    | <b>Y</b> | <b>N</b> | <b>I</b> |
| (f) | Have the supporting agency plans been developed with reference to the national disaster plan?                       | <b>Y</b> | <b>N</b> | <b>I</b> |
| (g) | Is the public aware of this national disaster emergency plan and in particular their role within this plan?         | <b>Y</b> | <b>N</b> | <b>I</b> |
| (h) | Is the role of the private sector clearly defined in the plan?  | <b>Y</b> | <b>N</b> | <b>I</b> |
| (i) | Have Memoranda of Understanding been established with the private sector regarding their role in times of disaster? | <b>Y</b> | <b>N</b> | <b>I</b> |

#### EMERGENCY TELECOMMUNICATIONS

- |     |   |          |          |          |
|-----|---|----------|----------|----------|
| (m) | Is there a functional telecommunications plan?  | <b>Y</b> | <b>N</b> | <b>I</b> |
| (n) | Is there a national emergency broadcast system in place?  | <b>Y</b> | <b>N</b> | <b>I</b> |
| (o) | Please give an indication of the structure of your emergency telecommunications system by filling the following boxes with the appropriate means of communications:<br>e.g. (T) telephone; VHF; UHF; HF (include CB/Ham); (S) satellite |          |          |          |

	<b>Local (in country) disasters</b>	<b>Sub-Regional (with adjacent countries)</b>	<b>Regional (Caribbean)</b>
Means of Communications			

- (p) Is the communications network of the D/EMO supported by stand-by power in an emergency? **Y N I**
- (q) Do you see a need to improve the emergency telecommunications in your country? **YES/NO**
- (r) Do you see a need to improve the emergency telecommunications with countries adjacent to your own? **YES/NO**
- (s) Do you see a need to improve the emergency telecommunications within the Caribbean region? **YES/NO**

### **EMERGENCY OPERATIONS CENTRE**

- (m) Has a national Emergency Operations Centre (EOC) been identified? **YES/NO**
- (n) *If yes*, is this national EOC equipped to effectively function in an emergency? **Y N I**
- (o) Has an alternated EOC been identified? **YES/NO**
- (p) *If yes*, is this alternate EOC equipped to effectively function in an emergency? **Y N I**
- (q) Should these be deemed necessary, have local EOCs been established? **Y N I**
- (r) *If yes*, are these local EOCs equipped to effectively function in an emergency? **Y N I**
- (s) Have standard operating procedures been developed to support the operations of the EOC? **Y N I**
- (t) Has the EOC staff been trained for operations? **Y N I**
- (u) Has the EOC been exercised in the last 2 years? **YES/NO**

### 3.2 Mitigation & Recovery

*Answer **yes or no** to the following applicable questions:*

- (a) Is disaster mitigation being addressed in the country? **YES/NO**
- (b) Are there current national statutory codes, regulations and standards supporting disaster mitigation? **YES/NO**
- (c) *If yes*, are these codes/regulations/standards effectively enforced? **YES/NO**

- (d) Are the natural hazard risk levels applied to mitigation policies? **YES/NO**
- (e) Are the natural hazard risk levels applied to mitigation strategies? **YES/NO**
- (f) Do the agencies addressing disaster mitigation have financial support to address mitigation matters? **YES/NO**
- (g) Is maintenance viewed as an integral part of the mitigation process? **YES/NO**
- (h) Are maintenance budgets for public facilities supported by an appropriate release of funds? ("appropriate" – as a rule of thumb, a minimum release of 5-10% the value of the facility) **YES/NO**
- (i) Does natural disaster mitigation also address economic risk? **YES/NO**
- (j) Is there a functional agency or group planning for/addressing disaster recovery? **YES/NO**
- (k) Does the disaster recovery agency or group have any planning authority? **YES/NO**
- (l) Does the disaster recovery agency or group have any enforcement authority? **YES/NO**
- (m) Is a standard operation procedure in use to assess the damage, needs and recovery recommendations? **YES/NO**
- (n) Do all sectors of government know of and apply this or any similar damage assessment and needs analysis (DANA) procedures? **YES/NO**
- (o) Does a functional mechanism exist to feed this DANA information into the response and recovery process in a timely manner? **YES/NO**
- (p) Does the disaster mitigation initiative impact on the country's development planning sector? **YES/NO**
- (q) Does the disaster recovery initiative impact on the country's development planning sector? **YES/NO**
- (r) Do functional mechanisms exist to solicit regional support for disaster recovery? **YES/NO**
- (s) Specifically, do the health care facilities undertake maintenance as a mitigation activity? **YES/NO**
- (t) Does the health sector undertake recovery planning? **YES/NO**
- (u) Does the private sector undertake recovery planning? **YES/NO**
- (v) Is recovery planning at the national level synchronized with recovery planning among the private sector? **YES/NO**

## 4.0 DISASTER/EMERGENCY EDUCATION AND TRAINING EDUCATION

Answer **yes or no** to the following applicable questions:

- (a) Is there a disaster/emergency public education programme in your country? **YES/NO**
- (b) The Disaster/emergency public education programme:
- i/ Targets both the urban and rural populations? **YES/NO**
  - ii/ Focuses on communities in the highly vulnerable areas? **YES/NO**
  - iii/ Targets local agencies/organisations/services which form part of the national disaster emergency response? **YES/NO**
  - iv/ Addresses the awareness of hazards to which the target population is exposed? **YES/NO**
  - v/ Addresses the alert and warning procedures for the public? **YES/NO**
  - vi/ Addresses the appropriate preparedness and responses during and after the event? **YES/NO**
  - vii/Addresses public health issues related to disasters and emergencies? **YES/NO**
  - viii/Addresses awareness of the national disaster plan? **YES/NO**
  - ix/ Increases awareness of the role and function of the D/EMO? **YES/NO**
  - x/ Builds knowledge and skills to undertake mitigation activities? **YES/NO**
  - xi/ Builds knowledge and skills to undertake retrofitting works? **YES/NO**
  - xii/Encourages the public to organise and help themselves? **YES/NO**

- (a) How would you **rate the success** of the education programme?

Excellent	
Very Good	
Good	
Fair	
Poor	

### 4.2 Training Activities and Requirements

*Tick the appropriate boxes*

<b>Required by D/EMO</b>		<b>Disaster Management Courses</b>	<b>Undertaken by D/EMO</b>	
As soon as possible	Urgently		Regularly	Intermittently
		(a) Community-based Disaster Management		
		(b) Damage Assessment and Need Analysis		
		(c) Disaster Environmental Management (Public Health)		
		(d) Donation and Relief Supply Management		
		(e) Emergency Operation Centre		
		(f) Incident Command System		
		(g) Management for Disaster Emergency Personnel		
		(h) Mass Casualty Management (Medical Management of Disasters)		
		(i) Mitigation & Recovery Planning and Implementation		
		(j) Preparedness and Response Planning and Implementation		
		(k) Project Management		
		(l) Public Information (Mass Communication) for Disaster/Emergency Personnel		
		(m) Search and Rescue		
		(n) Shelter Management		
		(o) Stress management for emergency responders		
		(p) Telecommunications for Emergencies/Disasters		
		(q) Warehouse Emergency Supplies Management		
		(r) Table Top, drills and simulation exercises		
		(s) Other?...		

## 5.0 Strategic Plans, Work Programmes, Projects and Budgets

### 5.1 STRATEGIC PLANS AND WORK PROGRAMMES

Answer **yes or no** to the following applicable questions:

- (a) Does the D/EMO have a current strategic plan spanning at least a 3 year period? **YES/NO**
- (b) Have the supporting agencies participated in the development of the strategic plan? **YES/NO**
- (c) Have costs been defined for the implementation of the plan? **YES/NO**
- (d) Has implementation of the plan begun? **YES/NO**
- (e) Has a current work programme been defined? **YES/NO**
- (f) Has a current work programme been initiated? **YES/NO**
- (g) Has work programme been shared with the D/EMO partners? **YES/NO**

### 5.2 Budget and Funding

Please state the total annual budget (to the nearest thousand) for the D/EMO.

	Currency	Amount (to the nearest thousand)
(a)		

- (a) Identify the main sources of funding for the disaster management programme from the list below

Public Financing?	<b>YES/NO</b>
Private Sector funds?	<b>YES/NO</b>
International/Regional Organisations	Loans? <b>YES/NO</b>
	Grants? <b>YES/NO</b>
	Other? <b>YES/NO</b>
Other sources?...	<b>YES/NO</b>

- (a) Give the approximate **% breakdown** of the budget to: **%**

i/ Staffing

ii/ Undertaking programme activities

iii/ Other?...

100%

(d)	Please state the number of staff at the D/EMO including the organisational head/representative?	
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### 5.3 Projects

Complete the following **summaries**

(a)	Briefly summarise the major projects presently being undertaken by the D/EMO,		
	Project Title	Funding Agency(ies)	Summary of Activity
i/			
ii/			
iii/			
iv/			

(b) Are these projects or any others linked to development projects? **YES/NO**

(c) *If yes, please elaborate briefly?....*

(d) State briefly three priority areas you would wish to see regional cooperation on natural disasters promoted/enhanced?

(e) i/ .

(f) ii/ .

(g) iii/ .

Thank you for your assistance. Please return this questionnaire to the sending organisation on or before the September 15, 2000 by fax or email.