

# Annex A - Main Findings.

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## 1. Findings

The following findings are presented based on responses from Regional and National DRR agency representatives and SME operators in the Tourism and Agriculture sectors in the nine (9) countries selected for assessment. SME factors used for assessment were gleaned from traditional DRR issues as well as in response to questions raised by the TORs. Presented and were presented diagrammatically in the main report.

### 1.1 SME Hazard Identification

Despite the availability of and public access to risk and hazard mapping information and tools, of which SMEs were not aware and spent little effort to find, no formal Hazard Risk and Vulnerability identification and analysis was reported by SMEs. **Figure 1** however shows SME operators' informal indications of their hazard vulnerabilities, which clustered around hurricanes, flooding and earthquakes, with droughts, fires and storm surge hazards posing secondary risks. Interestingly, SMEs in some states with active volcanos, (one within a few years of its forecasted return period), though aware of this threat, never considered themselves vulnerable to catastrophic volcanic eruption.

This attitude was reported by national DRM authorities to be 'cultural', where residents (and SMEs) found life more tolerable denying the threat and simply planned to quickly evacuate their homes and livelihoods or else accept their fate should it materialize, rather than stress about mitigation measures such as relocation, which they believed were not practically or financially feasible. In such cases, SMEs do not conform to the tenets of sustainable livelihoods, development or CDM.

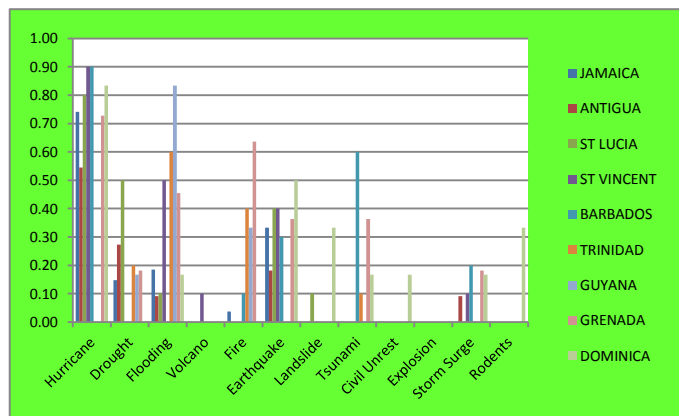


Figure 1 – SME Vulnerabilities (% of Sample)

### 1.2 Research and Data for SME DRR Decision Making

A considerable amount of DRR information and data has been produced over three decades of project activity, studies, after action reviews and lessons learned, commissioned by various international, regional, national and local institutions, but due to the uncoordinated, under-publicized nature of these interventions and poor records management practices by the DRR community, data from numerous sources is indiscriminately scattered throughout various government ministries and other institutions or on various web sites in not easily accessible or user friendly formats making it difficult or practically impossible to access.

More specifically, respondents were not aware of any DRR research targeting SMEs. One National Disaster Coordinator reported not being recently able to find any significant information or data in this area, which was a main topic of her Ph.D. dissertation.

CDEMA, CTO and other regional and national organizations have facilitated several training workshops, but while sometimes "including" SMEs, none specifically "targeting" them. One NDMA's 'Country Document' however recently targeted the "SME sector" in its latest work plan relating to risk insurance and DRR assistance including business planning for preparedness and recovery.

Caribbean states have not collectively adopted any standard comprehensive policy concerning collection, analysis, availability or dissemination and awareness for DRR data particularly relating to SMEs.

There remains no single virtual entry access point, warehousing or data mining tools through which SMEs (and others) may systematically locate this information to effectively conduct research and track trends for comprehensive analysis or modeling to be done to drive DRR decision making processes.

### 1.3 Legislation, Strategy, Standards and Compliance

DRR legislation exists in various stages of passage throughout Caribbean states, but none specifically targeting SMEs. Although huge gaps remain in the legislative framework relating to SME resilience, other established DRR related Laws, Acts of Parliament, Regulations, Regional and National DRR Strategies, Policies and Standards that include SMEs already exist (eg Fire prevention, Electrical inspections, Pesticide management, etc), however significant gaps in resources and DRR knowledge continue to undermine compliance.

Just as critical is the need for prioritizing compliance at the political leadership level to implement and enforce existing regulations, given that challenges of compliance are as political, social, economic and financial as they are regulatory and enforcement. Respondents suggested that a “Buy In” strategy would be more productive than a “Push Back” one, which can only be attained by more DRR education and understanding.

### 1.4 Organization and Partnerships

SMEs do not have dedicated DRM staff or resources within their small organizational structures, but some designate staff members for DRR responsibilities (**Figure 2**). DRR knowledge and standards vary widely between SMEs and states, with a majority of respondents considering fire, evacuation and pesticide plans as adequate preparedness.

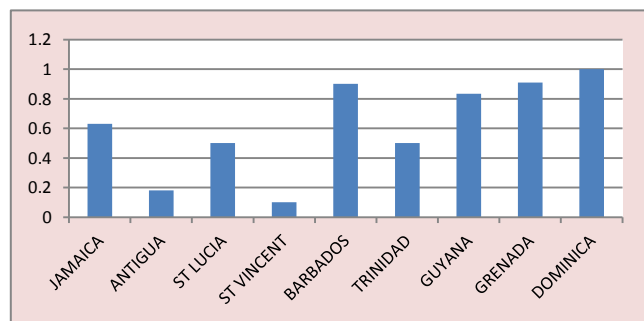


Figure 2 - %s of SMEs with DRR Designated Staff

Tourism SMEs and their sector associations were not particularly warm to the idea of partnering with government agencies including their NDMA's, as this could be a possible opening to incurring additional mandatory fees and charges. It was also felt that any formal partnerships beneficial to SMEs would not work, as governments would not be able to meet their obligations. There were however ad-hoc instances of bilateral relations where Hotel and Tourist Associations contracted the NDMA as consultants for DRR plan development and other activities.

Tourism and Agri Sector associations were similarly undersubscribed with SMEs avoiding membership fees and costs as well as questionable governance practices within these associations.

It was suggested that a less structured approach would be considered more acceptable, with ad-hoc 'charitable' contributions made by associations through mechanisms such as a 'Tourism Enhancement Fund' towards objectives within a national development framework.

### 1.5 Planning and Plan Operationalization

Surveys found less than 50% of respondents from all states identifying vulnerability to disaster hazards outside the traditional ones (Hurricanes, Earthquakes, Flooding) (**Figure 3**) while an average of 50% (with up to 90% in one state) having any form of disaster plans (**Figure 4**) and where these existed, only informal unwritten plans primarily for fire, evacuation and pesticides.

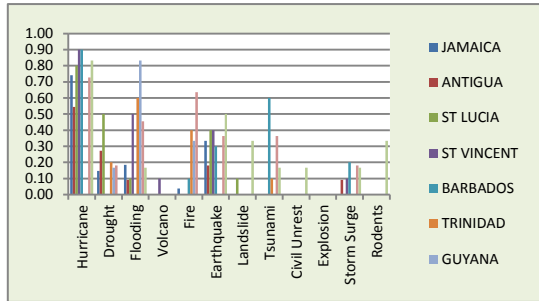


Figure 3 - SME Vulnerabilities

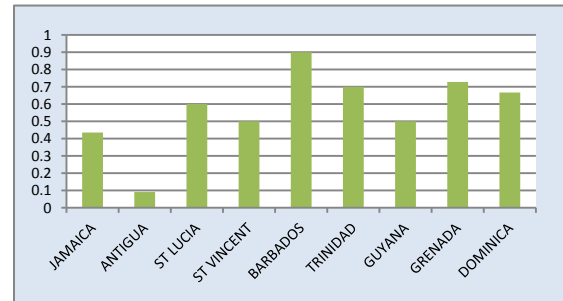


Figure 4- % of SMEs with Disaster Plans

A generic “Agriculture Disaster Risk Management (ADRM) Plan” was prepared by the FAO in collaboration with the Ministries of Agriculture across the region. The Plan represented an important achievement in supporting Disaster Risk Reduction on the national agenda of the agricultural sector. The ADRM Plan comprehensively prescribes roles, responsibilities and activities at all stages of the DRM Cycle: Preparedness, Mitigation, Response and Rehabilitation /Recovery.

The ADRM Plan also provided basic guidelines for the achievement of food security and the improvements in agricultural livelihoods through the promotion of sustainable agriculture. It sought to augment local/community-level DRR initiatives in the relevant agri sub-sectors by the preparation of Community-based Agricultural Disaster Risk Reduction (CB-ADRM) Plans. These plans were focused on enhancing the resilience of vulnerable communities before, during and after crises through risk assessment, risk reduction (preparedness, prevention and mitigation), emergency response, rehabilitation and recovery. Agricultural Extension Officers across the region are well aware of these plans and are already applying their concepts in limited ways while assisting the sector, but agri SMEs typically being unregistered small farms receive no training or benefit from these plans.

Similarly, The Inter-American Development Bank (IDB) and the Caribbean Disaster Emergency Management Agency (CDEMA) since 2007 formalized a Grant in support of the Regional Disaster Risk Management for Sustainable Tourism in the Caribbean Project. The Grant financed the development of a regional disaster risk management strategy for sustainable tourism including the formulation of standards for vulnerability assessments and risk mapping applied to the tourism sector; and institutional strengthening of the CDEMA, the Caribbean Tourism Organization (CTO), and other stakeholders in disaster risk management for sustainable tourism.

Agri and Tourism SMEs know little about these plans and projects or their outcomes.

## 1.6 Resources and Technology

SMEs generally have limited specialized DRR resources aside from basic fire and medical supplies stipulated by health and fire authorities along with portable and fixed electrical lighting supplies and elementary and short range emergency communications equipment and as shown in **Figure 5**.

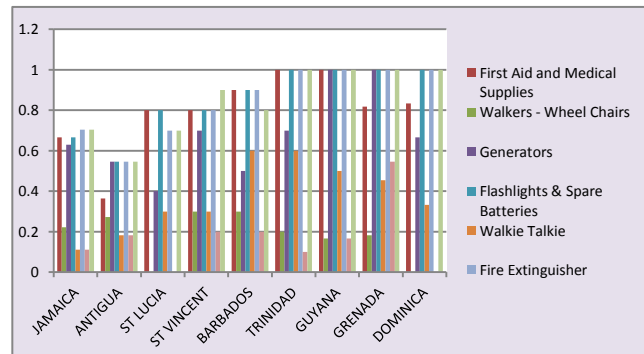


Figure 5 - SME Resources (% of SMEs by Country)

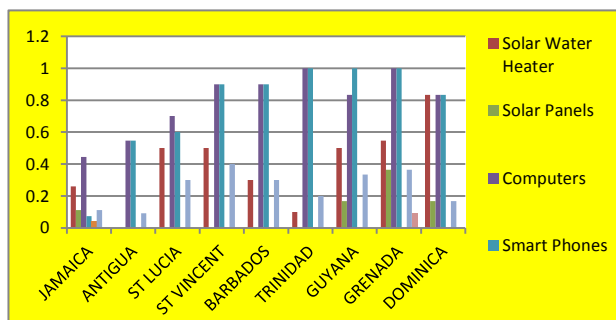


Figure 6 - SME Use of Technology

They consider these items adequate for any emergency based on prior experiences and are further limited by budgets which typically have no specific provisions for disaster response or recovery, but rather meant for normal business operations.

The use of modern, affordable and available technology such as the internet, computers, smart phone 'Apps', solar panels and water heaters, radio communications, security cameras, greenhouse nurseries with drip irrigation, and other devices and techniques is without doubt a necessity for SMEs to achieve and retain competitiveness and profitability and **Figure 6** shows that these methods are indeed being employed to varying degrees, dominated by smart phones and computers. These technologies are equally important for DRR activities and with access to additional software tools and training and can be effectively employed as DRR resources.

## 1.7 DRR Financing

Aside from normal business challenges and risks, including affordable commercial loan facilities, undoubtedly a major DRR gap in Caribbean SMEs is a lack of affordable catastrophic hazard insurance or other risk transfer mechanisms, as they would not qualify for government assistance in such events. An average of 20% (highest about 33% (**Figures 7 and 8**)) of SMEs surveyed practiced 'self-insurance' with funds set aside for recovery.

This gap is well recognized by CDEMA and National Finance Ministries which continue to address this challenge by targeting the regional finance sector to develop new and feasible initiatives, given undersubscription of the CCRIF facility which it was hoped would satisfy this gap.

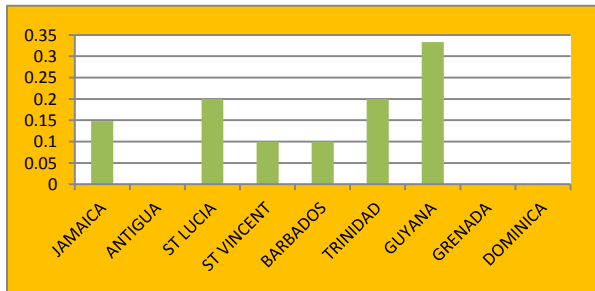


Figure 7 - % of SMEs with Funds Set Aside

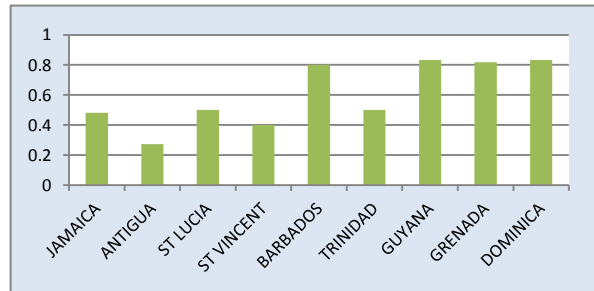


Figure 8 - % of SMEs with Risk Insurance

### 1.8 Recovery Marketing

Globalized tourist destination marketing and complex agricultural trade negotiations carried out by national governments and regional marketing organizations were traditionally considered indispensable to the success of tourism and agriculture in the region.

In addition to a critical shortage of ‘farm labour’, the loss of preferential status for banana exports to traditional markets along with the real and constant threat of weather hazards resulted in a major downturn in agriculture in the Caribbean, which according to respondents, has seen price and production declines with concurrent shifts of agricultural lands into housing and tourism ventures (apartment buildings, hotels, golf courses, etc).

Rapid expansion of the internet and proliferation of “Smart Phone Apps” such as ‘Air B&B’, ‘Uber’ and others have greatly facilitated SME marketing and operations at phenomenally low and affordable costs, spurring the emergence of “community tourism”, transportation, tours and other small operator hospitality services directly marketed internationally through the web.

Small farm and agri processors are also increasingly able to benefit from use of available technology such as greenhouse nurseries with drip irrigation, (possibly controlled by smart phone apps), to gain competitiveness for supply to local and regional markets, which have been met and supported by a significant increase in local wholesale and food retail outlets and restaurants, being themselves rapidly emerging SME sub sectors.

Technology has therefore provided SMEs with the ability to sustainably exist alongside large tourism and agricultural enterprises with direct marketing techniques both for normal business practices as for marketing that will allow quick recovery without having to rely on government resources and effort.

## 1.9 Education, Training, Drills and Capacity Development

Some 70% of SMEs surveyed across the region are operated by owners and staff that show a high degree of interest and varying degrees of exposure to DRR, mainly through government sponsored workshops and personal experiences, (**Figures 9 and 10**), but lack the depth of education, training and resources necessary to reduce their vulnerability and increase business sustainability, given the high exposure to natural and man-made threats that face them.

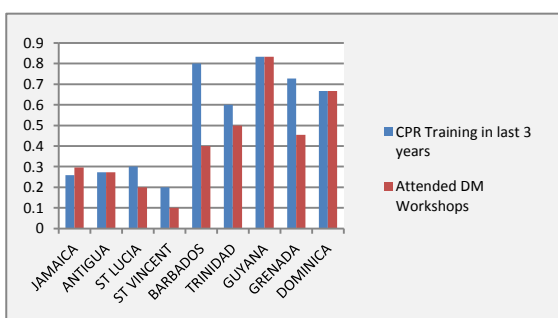


Figure 9 – Staff DRR Training (% of Sample Surveyed)

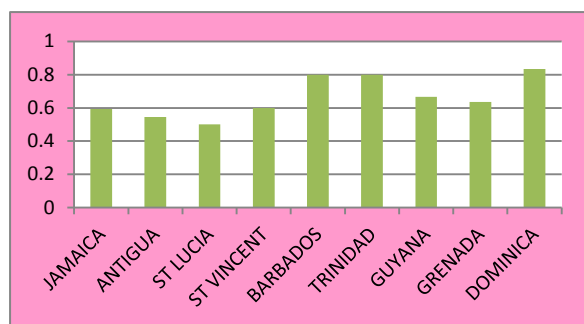


Figure 10 - Staff Interest in DRR (% of Sample Surveyed)

Their enterprises do not connect to national DRR frameworks or programs for lack of this capacity, which they expect to be offered to them by government DRR agencies. While facilitating and conducting ad-hoc DRR exposure and training primarily for first responders in the government services and usually under externally sourced project funding, government agencies lack the capacity and the policies to satisfy this need within SMEs. SMEs are however either financially unable or unwilling to specifically pay for DRR capacity in difficult and competitive business and labor environments, except those which are mandated by legislation or regulation, otherwise those which directly benefit operational business imperatives.

Such a set of DRR imperatives for small hotels would include training and equipment for avoidance of litigation by disgruntled or aggrieved guests such as for CPR, evacuation, shelter management, pesticides management, fires, first aid and medical responses, emergency electricity, communications, search and rescue and others depending on their locations and setup.

Basic DRR educational and promotional material is available from a number of electronic and institutional sources and in some cases easily accessible. The focal point for acquisition of such material is seen to be the NDMA from which printed material for most major natural hazards is provided on request by any credible organization or group (within availability and cost limitations). Fliers, brochures, reports, SOPs, response tips, booklets, maps, special facilities and concessions for SMEs, etc can either be directly provided, sometimes at a cost, or indirectly by reference to other appropriate agencies or departments, or to web sites which contain significant amounts of printable information. Much of this material can also be sourced directly from any number of local or regional agencies (including CDEMA) on request.

DRR material specifically relating to SMEs is less likely to be available as this is typically produced under 'special projects', which to date have been few. NDMAs and DRR agencies were often "out of printed copies" that were neither available on web sites.

A greater challenge however was the cost of acquiring sufficient amounts of printed material to conduct internal training, as costs often prohibited SMEs which often had expectations of being provided this material at no cost.

### 1.10 Early Warning, Communications, Awareness and Information Sharing

There is generally limited communication between tourism SMEs and DRM authorities before disaster events (**Figure 11**). Businesses are traditionally viewed and treated by public authorities as the 'private sector' which they believe is sufficiently resourced and capable of taking care of themselves, while DRM was targeted to 'more vulnerable' constituents where poverty prevailed. There is also an emerging trend in one country where young professionals engage in high tech agricultural projects through small family farms on a part time basis. As these are well informed and educated small farmers who access the internet and other sources for relevant information and find partnerships where needed to acquire the necessary resources, there is little need for special government assistance for elementary DR activities such as liaison, training, awareness, or information sharing about DRR matters.

This however differs from the established farming community where Ministries of Agriculture extension officers work very closely with small farmers and provide an effective information sharing mechanism to assist with technical DRR issues.

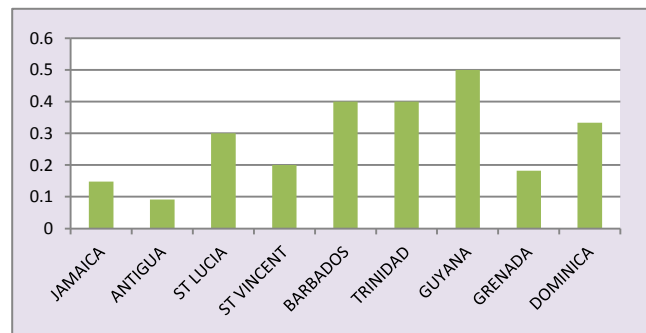


Figure 11 - % of SMEs Liaison with NDMA's

The level of public awareness and general knowledge of hydrological and seismic hazards, is generally high, but this is less so for non-traditional and less frequent 'anthropogenic' hazards including those related to the effects of Climate Change, Biological and Chemical threats.



## 1.11 Other Findings and Perceptions

Additional factors affecting SME resilience to disasters were gleaned from the study as described below.

### 1.11.1 Culture, Political and Social Tradition – impact on SME resilience

Prior to current concepts of disaster management and national development, Caribbean culture was characterized by political and social dogma largely led by multinational conglomerates and colonial landowners who often had their way whether or not their personal views or interests were in line with what is now known as ‘best practice’ for national resilience to disasters.

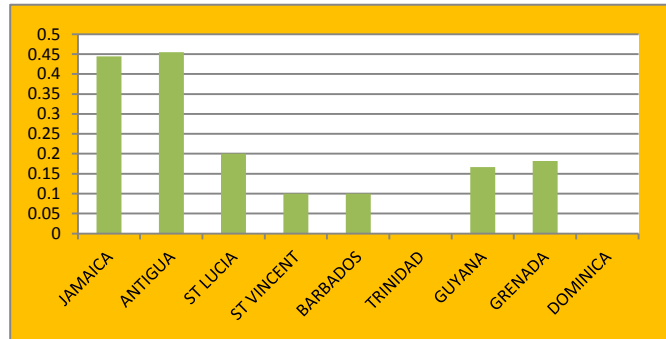


Figure 12 - % of SMEs that received Government Assistance

This has resulted in many harmful DRR practices, some of which have become traditional or even cultural, such as the growth of makeshift communities and small businesses in areas most vulnerable to natural hazards, disregard for the environment and mitigation regulations, among many others.

More recently however, some Caribbean governments have encouraged the development of local ownership in tourism, agri-production and other enterprises as a means of promoting sustainable economic and social development for its citizenry. Challenges of financing capital and ‘economies of scale’ however often hinder such strategies, making limited government assistance to SMEs necessary for start-up and recovery (**Figure 12**).

Removal of unreliable and insufficient recovery support from the public purse where this occurs, can be accelerated through DRR understanding and practice among SMEs and even more importantly as cost saving and sustainability measures from improved efficiency, stability and growth through their increased ability to recovery from disasters.

### 1.11.2 Gender, Age and Specially Vulnerable Groups

Data from this study showed that men and women of all ages ranging from 16 – 87 (averaging about 39 years old) (**Figure 13**) are employed, participate and treated equally in the tourism sector throughout the Caribbean. Gender and age neutrality is also well practiced with DRR responsibilities throughout the hotel SME community.

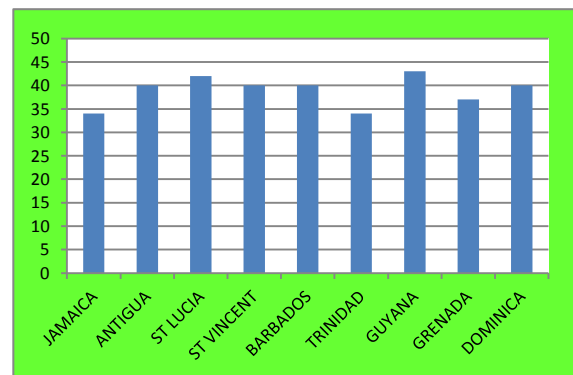


Figure 13 - Average Age of Hotel SME Employees

While properties were largely constructed on hilly ground often with long stairways, aside from a few wheelchair ramps, no special emergency provisions were noted for vulnerable populations such as the physically challenged or aged persons. This was thought to be partially due to a ‘culture’ of catering to healthy, able bodied tourists. Limited day care provisions were made for babies and young children on some properties.

The small farming sector however showed predominance with men, given the typically rugged farming terrain and operating environment, as well as lingering cultural rural traditions of subsistence agriculture being a male avocation, with men providing and women “preparing the food”. The average age of farm workers is however currently about 55 years, with younger persons opting away from traditional farming into more lucrative and/or ‘glamorous’ urban activity.

### 1.11.3 Existing institutional mechanisms which could support SME-CDM-NDMA linkages:

The following International, Regional, National and Local institutions represent established linkages that continue to support CDM in the Caribbean region, including capacity building interventions for NDMA’s and SMEs.

<b>INTERNATIONAL ORGANIZATIONS</b>	
<b>ADRA</b>	The Adventist Development and Relief Agency (ADRA), one of the more prominent international faith-based organizations engaged in development and relief in the Caribbean, is also a partner with CDEMA under formal memorandum of understanding. ADRA’s activities are focused on local community level relief, training and education and disaster management programs.
<b>FAO</b>	The UN Food and Agriculture Organization (FAO) recently completed its “Emergency Assistance for the Formulation of National Hurricane Disaster Preparedness and Impact Mitigation Plan for the Agriculture, Forestry and Fisheries Sector.” Research and national consultations produced significant information sharing and recommended approaches. The activity highlighted the need for more sector specific content – especially with regard to the economic and food security aspects of agricultural production – in national disaster management plans.
<b>IFRC</b>	The International Federation of Red Cross and Red Crescent Societies (IFRC), besides being preeminent in disaster response, is one of CDEMA’s key partners in promoting community level disaster preparedness and mitigation in the Caribbean and an implementing entity under the DIPECHO project. The CDEMA partnership with IFRC is spelled out in a formal memorandum of understanding. The role of the International Federation is to standardize training curricula, train trainers in National Societies, facilitate and support training in disaster management at national, regional and international level.
<b>ITU</b>	The International Telecommunications Union (ITU) has collaborated closely with CDEMA in preparation of telecommunications manuals, coordination of frequencies, and provision of equipment and training. In response to the recognized need of the maritime aspect of disaster prevention and response, ITU has worked with the International

	Maritime Organization in sponsoring seminars and development of national plans.
<b>UNDP</b>	Besides this Comprehensive Disaster Management Strategy initiative, the UN Development Program (UNDP) has a substantial role in facilitating and coordinating the activities of the many agencies engaged in assistance to the region. Of specific relevance, UNDP chairs Caribbean Donors Groups, which supports CDEMA in coordinating disaster response assistance.
<b>USAID OFDA</b>	USAID/OFDA– USAID’s Office of Foreign Disaster Assistance (USAID/OFDA) is engaged in several varied preparedness, response and mitigation activities including community level disaster management (CDMP), public education, disaster management training, institutional strengthening of disaster offices and emergency response and disaster recovery programs, all designed toward vulnerability reduction. USAID/OFDA has instituted support for development of a Disaster Mitigation Facility for the Caribbean at the Caribbean Development Bank, and USAID has included mitigation as a serious component of the reconstruction program.
<b>World Bank</b>	The World Bank supports Regional Emergency Recovery and Disaster Management Programs, including individual lending operations in Caribbean states for physical investments, capacity building, institutional strengthening, and community preparedness.
<b>INTERNATIONAL DONORS</b>	
<b>DFID</b>	The Department for International Development (DFID) of the UK Government engaged in an assessment of disaster management within the Caribbean to determine points of intervention which could best support on- going initiatives and advance sustainable development. DFID continues to support disaster management within the Caribbean, to assist targeted countries to achieve sustainable national disaster management systems, and to treat vulnerability reduction as a major contribution to poverty alleviation.
<b>DFATD (Formerly CIDA)</b>	The Department of Foreign Trade and Development supports a Disaster Response and Preparedness Program in the Caribbean through bilateral and multilateral activities. This includes a International Humanitarian Assistance (IHA) division, which supports disaster preparedness projects implemented by specialized agencies such as the IFRC and PAHO. DFATD’s ongoing support includes establishment of funds for Climate Change, Disaster Risk Reduction and Resilience through the CDB (CDRRF and CDRMF).
<b>European Community</b>	The European Union through the European Community Humanitarian Office (ECHO) has implemented a program in disaster preparedness (DIPECHO) which has supported successful Community-based initiatives and training through CDEMA, PAHO, the International Federation of Red Cross societies (IFRC), and the National Disaster Organization (NDO) in Jamaica and elsewhere throughout the Caribbean. DIPECHO supported establishment of the sub-regional Caribbean Disaster Information Network (CARDIN) at the University of the West Indies, which is intended to strengthen the capacity within the Caribbean to collect, index and disseminate disaster relevant material.
<b>JICA</b>	The Japan International Cooperation Agency (JICA) continues to support the Caribbean Disaster Management Planning Project. The project has provided experts in Disaster Management, Volcanic Planning and Earthquake Planning and includes initiatives in hazard mapping, application of GIS technology to planning, and enhancing emergency communications.
<b>REGIONAL ORGANIZATIONS</b>	

<p><b>ACS</b></p>	<p>The Association of Caribbean States (ACS), comprises some 28 states “bordering” the Caribbean Sea. In 1999 members and associate members signed an Agreement for Regional Cooperation on Natural Disasters. The ACS identified natural disasters as a priority in its first phase work program and formed a Special Group on Natural Disasters to promote cooperation among the members and interaction with relevant regional and international organizations.</p> <p>Two working groups were formed at a meeting in October 2000 to deal with 1) Early Warning Systems, Floods and Earthquakes, and 2) Training Program, Education, Awareness and Institutional Strengthening of NDMA’s. Three projects emanated from the discussions:</p> <ul style="list-style-type: none"> <li>• Strengthen Response Capabilities of the Disaster Relief Systems of ACS members</li> <li>• Utilize existing disaster information centers to create information related to the activities of the priority areas of the work program identified, and</li> <li>• Develop the exchange of technical cooperation in emergency relief among members in order to strengthen Disaster Management Organizations.</li> </ul> <p>The ACS also spearheaded a study on wind and earthquake codes for the Greater Caribbean Basin undertaken through the University of the West Indies in collaboration with Universities of Costa Rica and Pavia (Italy).</p>
<p><b>CDB</b></p>	<p>In May 1998 the CDB adopted a new Strategy and Operational Guidelines for Natural Disaster Management. Embracing the entire disaster management cycle from mitigation and preparedness through to restoration, the strategy aimed to assist borrowing member countries (BMCs) in disaster management, fully integrate disaster management into the bank’s own operations, and improve collaboration and coordination with other development institutions working in the region on this issue.</p> <p>The Caribbean Development Bank has since established a Disaster Mitigation Facility for the Caribbean with support from USAID/OFDA. The two principal objectives are 1) to assist BMCs to adopt and institutionalize disaster mitigation policies and practices, and 2) to strengthen CDB’s institutional capacity to implement the 1998 strategy and integrate its provisions into its work program.</p> <p>The CDB has more recently expanded its role as fund managers for disaster related donor funding.</p>
<p><b>CDEMA</b></p>	<p>CDEMA is the central disaster management organization within the Caribbean. A specialized agency, CDEMA relates to CARICOM through the COTED (Council for Trade and Economic Development) and was established by agreement of its member states to:</p> <ul style="list-style-type: none"> <li>• Mobilize and coordinate emergency disaster relief for member states;</li> <li>• Secure, coordinate and channel reliable and comprehensive information on disasters;</li> <li>• Mitigate the immediate consequences of disaster; and</li> <li>• Promote a sustainable disaster response capability among members.</li> </ul>

<b>CHA and CTO</b>	<p>The Caribbean Hotel Association and the Caribbean Tourism Organization are long-established regional industry organizations that have taken active roles in disaster management. They have developed hurricane procedures and provided training for hotel operators. Under its Sustainable Tourism strategy, CTO</p> <p>Conducted a series of integrated planning workshops and has developed a cadre of trainers.</p> <p>CTO regularly exchanges information with CDEMA and is well positioned to be an effective partner for CDM.</p>
<b>CIMH</b>	<p>The Caribbean Institute of Meteorology and Hydrology (CIMH) provides the main training for meteorologists in the region with two programs. CIMH has the TAOS/L storm surge model software, installed under the CDMP project. Modeling that is more specific to the Caribbean scale can be developed by CIMH if financing is made available. CIMH has produced storm surge vulnerability maps for OECS states. The mapping should be extended to all CDEMA members and vulnerability information integrated into CDM training programs.</p> <p>CIMH will maintain the sea-level monitoring network instituted under the CPACC project. CIMH also has responsibility for regional hydrology research and data base development, and should therefore play a larger role in research regarding water availability and management and such activities as floodplain mapping.</p>
<b>IDB</b>	<p>The Inter-American Development Bank has placed disaster mitigation and risk reduction high on its agenda and has supported technical capacity building through geographic information systems (GIS) in Jamaica and elsewhere. IDB has collaborated closely with the</p> <p>CDB in recovery assistance to regional states following disasters, establishing useful models for incorporating mitigation and prevention into recovery assistance.</p>
<b>OAS</b>	<p>The OAS partnered with USAID/OFDA to execute the Caribbean Disaster Mitigation Project (CDMP) activities in six major streams:</p> <ul style="list-style-type: none"> <li>• Community-based preparedness,</li> <li>• Hazard assessment and mapping,</li> <li>• Hazard-resistant building practices,</li> <li>• Vulnerability and risk audits for lifeline facilities,</li> <li>• Promotion of hazard mitigation within the property insurance industry, and</li> <li>• Incorporation of hazard mitigation into post-disaster recovery.</li> </ul> <p>The outputs from these activities provided a significant body of technical products, which are available for use within each territory.</p> <p>The OAS has also been the implementing agency for the Caribbean Planning for Adaptation to Climate Change (CPACC) project, an initiative funded by the Global Environmental Facility (GEF) and executed through the UWI Centre for Environment and Development.</p>
<b>PAHO</b>	<p>The Pan American Health Organization (PAHO) has a strong disaster mandate particularly as it relates to the health sector and is a key partner of CDEMA. PAHO has been engaged in mitigation activities with respect to health and sanitation infrastructure and the preparedness and response mechanisms. Training has included contingency planning for the health sector, mass casualty management, stress</p>

	management during and after disasters, incident command systems and the Humanitarian Supply Management System (SUMA).
<b>UWI, U Tech</b>	<p>The University of the West Indies (UWI) provides training relevant to CDM, including building design and structural mitigation through the Engineering Faculty and courses in geo-hazards, disaster management and environmental management through the Department of Geography and Geology. The CPACC project is implemented through the UWI Centre for Environment and Development, with the Centre for Marine Sciences and Institute for Marine Affairs as effective partners. The sub-regional Caribbean Disaster Information Network (CARDIN) at UWI was established with DIPECHO support.</p> <p>The Faculty of the Built Environment, which includes the School of Architecture and the Department of Planning at the University of Technology (U Tech), offers courses relevant to CDM, and provides opportunities for integrating CDM into the relevant curricula and courses of study.</p>
<b>NATIONAL GOVERNMENT ORGANIZATIONS</b>	
<b>National Disaster Organizations (NDOs)</b>	<p>National Disaster Organizations (NDOs) have primary responsibility for disaster management at the national level. The NDO includes not only the National Disaster Management Agency (NDMA), but also the committees and other linkages that are necessary for effective multi-hazard management through all phases of the disaster cycle.</p> <p>The NDMA is expected to fulfil at least following criteria in readiness to promote CDM:</p> <ul style="list-style-type: none"> <li>• An established organizational structure with highly trained professional staff</li> <li>• Well-established and functioning linkages/ partnerships for disaster management (government agencies, private sector, NGOs, community organizations)</li> <li>• Research and data management capability</li> <li>• Fully functional Emergency Operations Center</li> <li>• Operational outreach program</li> <li>• Public education, public information and dissemination capability</li> <li>• Operational multi- hazard disaster plan</li> <li>• Legislative framework</li> </ul>
<b>LOCAL GOVERNMENT</b>	<p>Parish Councils participate as a part of the NDO through training and operations of various Local Government Agencies including:</p> <ul style="list-style-type: none"> <li>• Police</li> <li>• Health</li> <li>• Education</li> <li>• Fire</li> <li>• Utilities</li> <li>• Others</li> </ul>
<b>Fire services</b>	DM Training and operations for fire, rescue, evacuation, building-plan review, building-subdivision inspection, fire-drill simulations, fire-hydrant inspection, etc.
<b>Met Office</b>	Hydro met monitoring and tracking systems
<b>Ministry of Education</b>	Education and Awareness through schools safety programmes

<b>Ministry of Health</b>	Health Disaster Management and Training
<b>Ministry of Agriculture (Extension Division)</b>	Plant and animal diseases control, Applied technologies, monitoring and training for small farmers
<b>Ministry of Tourism</b>	Provision, monitoring and training on Tourism disaster policies, plans, resources, business concessions, , etc
<b>Rural Agricultural Development Authority, RADA</b>	Agri-business and technical training, planning and management
<b>Water Resource Authority</b>	Water resources and monitoring systems
<b>NGOs and CBOs</b>	
<b>Community Based Organizations (CBOs), Community Disaster Committees (CDCs) and Non-Governmental Organizations (NGOs)</b>	<p>Communities and CBOs play a vital role in preparing for natural disasters and mitigating their effects. The community must be first to respond when disaster strikes so must be well prepared and trained for this role, which is the most effective approach to integrating the CDM process into the population. In addition, community initiatives may be more readily implemented as they are not necessarily constrained by the procedures and timing of national budget requests and allocations.</p> <p>Non-governmental organizations (NGOs) stand as a crucial third leg with government and the private sector in serving communities' needs. They frequently take the role of intermediary between the community and national and international agencies and are important partners for the CDM process. A number of NGOs are active in the Caribbean, some of which have formal agreements with NDMA and CDEMA.</p>
<b>Hotel and other Small Business Associations</b>	Facilitate DM Training and resources for SMEs
<b>National Red Cross Societies</b>	<p>Provide DM training in Basic DM, Response SOPs, Communications, develop hotel emergency plans, response plans, first responders.</p> <p>This training will reflect the mandate of the National Society in disaster management in its country and will generally include:</p> <ul style="list-style-type: none"> <li>○ First Aid</li> <li>○ Volunteer induction</li> <li>○ Volunteer management</li> <li>○ Community based first aid (CBFA)</li> <li>○ Community based disaster management (CBDM).</li> </ul>

	<ul style="list-style-type: none"> <li>○ Participatory hygiene and sanitation transformation (PHAST).</li> <li>○ Water and sanitation</li> <li>○ Vulnerability and capacity assessment needs assessment training</li> <li>○ Relief and distribution.</li> <li>○ Logistics management</li> <li>○ National disaster response team (NDRT).</li> <li>○ Public health in emergencies</li> <li>○ Food security and nutrition.</li> <li>○ IT/Telecommunications</li> <li>○ Basic training course for delegates.</li> </ul>
<b>Salvation Army</b>	Provide training and work experience for EMTs, Ambulance services First Aid Training
<b>St Johns Brigade</b>	Provide EMT training and work experience, Ambulance services, First Aid Training

#### 1.11.4 Influential Private and Public Stakeholders

“Challenges with agriculture in the region are not so much technical as they are largely political, institutional and social” (FAO Rep). Traditionally large agricultural entities are now turning towards tourism as the ‘industry of choice’, as they are no longer given the kind of government attention they once commanded while international agencies such as FAO have become a much stronger voice for advice and partnership in navigating turbulent agricultural waters in these changing times. This shift was exemplified in one country experiencing dramatic fall in prices of its gold and bauxite and while not running away from its traditional rice and sugar, have left traditionally influential mining operators looking to diversify into tourism principally for Caribbean consumption, but with some degree of difficulty to date.

UN agencies and organizations hosted within the region are direct clients of the governments who are UN member states and whom they serve. They therefore do not operate on their own agenda, but Governments should be willing to consider technical advice as offered by these agencies of which some governments are more receptive than others and where receptivity often changes with political cycles. The FAO prides its interventions as inclusive and consistent in selected agricultural projects and programmes and cited a strategic model project where large tracts of overgrown lands previously covered with sugar cane were leased to private concessionaires for planting and growing income generating trees on a large scale basis as opposed to operating unsustainable ‘small farms’, a trend it believes is irreversible, even if happening by default.

While poultry farming now represents one of the most prolific agricultural sub sectors in the region, small farmers tend to look to government ministries for assistance mainly through their typically proficient extension officers, but get very little tangible assistance in return owing to financial constraints and little social and political connections or influence. Joint ventures between agricultural SMEs and ‘influential’ international partners could provide a path forward, but government agri sector agencies should facilitate such partnerships and monitor such arrangements.



Hotel Associations are generally the largest and most influential stakeholder in tourism and use their influence to make recommendations to Government on policy direction while trying to maximize their profitability and maintain consistency between political changes. Large franchise and chain operators are not always members of hotel associations but maintain great influence with governments through private, individual and direct lobby of government decision makers.

Development of the tourism sector however depends heavily on government policy and on “Tourism Authorities” who control the purse strings for advertising and marketing etc, so will always be considered the most powerful and influential stakeholders for mass scale tourism. They were often however cited as not doing enough to assist the industry and in some cases were thought of being aloof.

Below is a limited list of stakeholders with varying degrees of influence in no special order:

## **AGRICULTURE – PRIVATE SECTOR**

### **Associations**

- Agricultural Societies, Manufacturers Associations, Organic Farmers Associations, Green House Growers Associations, Rice Farmers and Millers, Rice and Sugar Association, Cooperative of Nutmeg Associations, Farmers Coops, Banana Associations

### **Financial Institutions**

- Banks, Insurance Companies, Chambers of Commerce,

### **Business Enterprises**

- Agri- Processors, Investors, Farmers, Supermarket chains, Agri processing plants, Poultry Farmers, Input Suppliers, (eg seeds and fertilizers, pesticides), Marketing Agencies,

## **AGRICULTURE - PUBLIC SECTOR**

### **Government Agencies**

- NDMAs, Lo NDMAs, Local Government, / Parish Councils, cal Government, / Parish Councils, Ministry of Agriculture / Extension Officers, Rural Agricultural Development Authorities, Ministries of Lands and Surveys, Ministry of Fisheries and Inland Fishing, Min of Commerce Investment and Consumer Affairs, Min of Industry and Commerce, Bureaus of Standards, Planning Institutes, Energy and Mining Ministries, Fire services, Met Office, Water Resource Authority, Ministry of Health, Environmental Protection Agency (EPA), Climate Change Office, Civil Aviation Authority, Min of Sustainable Development, Public Works, Poverty Relief Department, Min of Social Development

### **Statutory Agencies**

- ICT Agencies, Investment Promotion Agencies, Business Development Centres, Scientific Research Council, Rice Development Boards, Sugar Corporations, Marketing Corporations

### **Cooperatives**

- Industrial Dev Corporation

### **Regional and International Institutions**

- UN agencies (FAO / UNDP), Donor Group (DFATD / EU/ DFID / USAID,etc) / CARDI

## **TOURISM PRIVATE SECTOR**

### **Associations**

- Hotel and Tourist Associations, Small Tourism Assn, Regional “Traffickers” (speculators who buy and export food regionally) control price and market, Aircraft owners assn. (internal flights), Calypsonian Association, Investment Partnership Associations, Tourism and Hospitality Association, Cruise Tourism Association, Taxi Operators Association, Water and land taxis associations, Tours and excursion associations,

### **Financial Institutions**

- Banks, Insurance Companies, Chambers of Commerce, Credit Unions,

### **Business Enterprises**

- Airport Taxi, Travel Agents, Hoteliers, Retail business owners, Tour Guides, IT industry emergent stakeholder marketing through web sites etc, for information and gaming, Restaurants, Incoming tour operators, Hotel Chains, Supermarket chains

## **TOURISM PUBLIC SECTOR**

### **Government Agencies**

- Ministry of Tourism, NDMA, Dept. of Industry and Commerce

### **Statutory Agencies**

- Investment Promotion Agencies, Marketing Corporations, Small Business Development Funds, Environmental and DCAs (Development Control Authorities), Small Business Bureau, Small Business Council, Tourism Authorities, Private Sector Commission, Business Development Centres, Cultural Foundation, Tourism Development Co, Tourism Marketing Inc

## Regional and International Institutions

- UN agencies (FAO / UNDP), Donor Group (DFATD / EU/ DFID / USAID/etc)

### 1.11.5 Strategic Sectors Dominated by SMEs

Although with insufficient supporting data, it was widely reported in all participating states that the tourism and agriculture industries were the dominant strategic sectors for SMEs with a number of other feeder SMEs constantly emerging.

The **Tourism** sector was perceived as the largest SME employer both directly and indirectly on which economies were increasingly dependent and mainly includes:

- Small hotels and guest houses
- Taxi drivers
- Tour operators – sometimes attached to small hotels
- Apartment rentals mainly for international tenants
- Estate resorts

The **Agriculture** sector includes:

- Small subsistence farmers – Root Crops and greenhouse vegetables
- Agri-Trading (small agri retail stalls in strip malls)
- Light manufacturing (agri processing)
- Poultry farming is potentially the fastest growing sector regionally, but is import dependent for feed.
- Timber, Forestry, Fishing,

### 1.11.6 Emerging SMEs

**Some influential emerging SME stakeholders are:**

- **Eco Tourism** being promoted for development of interior beaches and water falls, etc
- **Off shore Medical Universities** around the Caribbean making significant contribution to economies
- **Apartment Rental** providing accommodation for foreign university students and researchers.
- **Taxi drivers and tour operators** potentially use “Uber” and similar on line services for marketing
- **Construction** Housing Projects
- **Wholesale and Retail Traders** – Input Suppliers (Seeds, fertilizers, pesticides), Food stalls, Increasing and widening variety. Retail goods dominate small and medium selling of consumer items. Indigenous and imported products,
- **Large oil find** off shore Guyana expecting full oil production by 2018 and expected to generate significant new and expanded SMEs
- **Community Social and Personal Services** – Hair styling, Barbers, Nails, Grocery delivery services
- **Restaurants** – Supporting Food stalls, Catering

- **Supermarkets** - Already being overtaken by small agri retail people in stalls and strip malls
- **Financial** –Short micro loans – 6 months
- **Health and Medical** services - individual doctors' offices), small medical complexes
- **Recreation** – Fitness enterprises,
- **Light manufacturing** – Cottage Industry, 3-4 person operations, clothing and textiles
- **Service based sector and feeder industries** - Casinos and on-line gaming, Accounting firms, Legal (small local legal services), Car Rentals, IT services, Advertising, Video graphics, Diving, Yachting, water sports, etc
- **Direct government employment** in agri and tourism sectors. Labour market, short term employment programme (JEEP, STEP, NICE, SMILE)

Most sub-sectors have associations with which to interact that will represent their sectors.