Assessment of Current Disaster Risk Management Practices in Small and Medium Enterprises in the Caribbean and Identification of Needs and Barriers to Integration of Disaster Risk Management in Business Practices

Final Report

Prepared for:
Disaster Risk Reduction Centre (DRRC)
Institute of Sustainable Development
University of the West Indies, Mona, Kingston 7, Jamaica W.I.

Prepared by:
Stacey E Thompson
Trevor Hamilton and Associates
15 Seaview Avenue
Kingston 6, Jamaica W.I.
Acknowledgements

The consultant wishes to express sincere gratitude to all respondents for their time and knowledge in supporting this activity, with special thanks to Ronald Jackson of CDEMA, Philmore Mullings of NODS Antigua, Donovan Stanberry and Carlton Wedderburn from the Ministry of Agriculture and Fisheries in Jamaica, Howie Prince of NEMO St Vincent & the Grenadines, Gerard McPhail of Grenada, Anna Mohase from the Guyana Forestry Commission, Velda Octave-Joseph of NEMO Saint Lucia, Claus Ecklemann of FAO regional office in Barbados, Leah Monderoy at ODPEM Trinidad & Tobago, Samantha Dixon of NADMA Grenada and Noorani Azeez of the Saint Lucia Hotel and Tourist Association, who showed particular interest and made extra efforts to provide information and assistance.
Contents
Acknowledgements ......................................................................................................................... 7
1. Executive Summary ............................................................................................................. 7
2. Introduction ........................................................................................................................ 10
2.1 Purpose .................................................................................................................................... 10
3. Background to Assignment ................................................................................................ 10
3.1 CDM – The “Sendai” Framework ..................................................................................... 10
3.2 Disaster Risk Management (DRM) .................................................................................... 12
3.3 CDM and SMEs ................................................................................................................. 12
4. Assignment Objectives ....................................................................................................... 13
5. Methodology ...................................................................................................................... 14
5.1 Sectors for Assessment....................................................................................................... 14
5.2 Regional States under Assessment ..................................................................................... 15
5.3 Overall Approach ........................................................................................................... 15
5.4 Survey Methodology ...................................................................................................... 16
5.5 Situation Analysis ........................................................................................................... 17
5.6 Matrix and Ranking ........................................................................................................ 19
5.7 Enterprise Surveys .......................................................................................................... 19
5.8 Challenges faced during execution of Consultancy ....................................................... 19
5.9 Report Structure.............................................................................................................. 21
6. Main Findings. ................................................................................................................... 22
   Hazard Identification ............................................................................................................ 23
   Research and Data for SME DRR Decision Making ........................................................... 23
   Legislation, Strategy, Standards and Compliance .............................................................. 24
   Organization and Partnerships ........................................................................................... 25
   Planning and Plan Operationalization ............................................................................... 26
   Resources and Technology................................................................................................. 26
   Financing ............................................................................................................................ 28
   Recovery Marketing ........................................................................................................... 29
   Education, Training, Drills and Capacity Development .................................................... 30
   Early Warning, Communications, Awareness and Information Sharing.......................... 31
7. Recommendations .............................................................................................................. 33
ABBREVIATIONS

ASDRMC  Agriculture Sector Disaster Risk Management Committee
BCP  Business Continuity Planning
CARICOM  Caribbean Community
CARDI  Caribbean Agricultural Research and Development Institute
CASME  Caribbean Association of Small and Medium Enterprises
CAST  Caribbean Alliance for Sustainable Tourism
CCA  Climate Change Adaptation
CCCCC  Caribbean Community Climate Change Centre
CCRIF  Caribbean Catastrophe Risk Insurance Facility
CDB  Caribbean Development Bank
CDM  Comprehensive Disaster Management
CDEMA  Caribbean Disaster Emergency Management Agency
CDRR  Comprehensive Disaster Risk Reduction
CHTA  Caribbean Hotel and Tourism Association
CTO  Caribbean Tourism Association
DFTAD  Department of Foreign Affairs Trade and Development
DRM  Disaster Risk Management
DRR  Disaster Risk Reduction
DRRC  Disaster Risk Reduction Centre
ECLAC  Economic Commission for Latin America and the Caribbean
EKACDM  Enhancing Knowledge and Application of Comprehensive Disaster Management
EU  European Union
EW  Early Warning
FAO  Food and Agriculture Organization
GCC  Global Climate Change
GDP  Gross Domestic Product
Govt  Government
HACCP  Hazard Analysis and Critical Control Points
HTA  Hotel and Tourist Association
HVRA  Hazard Vulnerability and Risk Assessment
IICA  Inter-American Institute for Cooperation in Agriculture
IMF  International Monetary Fund
MoA  Ministry of Agriculture
MOU  Memorandum of Understanding
MSME  Micro, Small and Medium Enterprises
NDMA  National Disaster Management Agency
NGO  Non-Governmental Organization
OECS  Organization of Eastern Caribbean States
RToC  Revised Treaty of Chaguaramas
SBA  Small Business Association
SIDS  Small Island Developing States
SMEs  Small and Medium Enterprises
SOP  Standard Operating Procedure
TOR  Terms of reference
UN  United Nations
UNECLAC  United Nations Economic Commission for Latin America and the Caribbean
**DEFINITION OF KEY TERMS**

**Best Practices**

“A best practice is a method or technique that has consistently shown results superior to those achieved with other means and that is used as a benchmark. In addition, a "best" practice can evolve to become better as improvements are discovered. Best practice is considered by some as a business buzzword, used to describe the process of developing and following a standard way of doing things that multiple organizations can use.

Best practices are used to maintain quality as an alternative to mandatory legislated standards and can be based on self-assessment or benchmarking.[1] Best practice is a feature of accredited management standards such as ISO 9000 and ISO 14001.[2]”

**Business Practice**

Within the context of this study, best practices for DRM primarily refers to those found within the principles, guidelines and standards of Comprehensive Disaster Management (CDM). They also refer to practices in any state which have proven successful for any given set of circumstances.

Integration of Disaster Risk Management in Business Practices therefore addresses how best to mainstream DRM best practices within all aspects of business practice.

**Capacity**

Physical social, economic and institutional means as well as skilled personal or collective attributes such as leadership and management. (ISDR)

**Capacity Building**

Efforts aimed to develop human skills or societal infrastructures within a community or organization needed to reduce the level of risk. Capacity building also includes development of institutional, financial, political and other resources, such as technology at different levels and sectors of the society. (ISDR)

**CDM**

Comprehensive Disaster Management includes attention to all phases of the Disaster Management Cycle – prevention, mitigation, preparedness and response, recovery and rehabilitation. It includes emphasis on reducing risk. This nomenclature is the term that reflects the global trend in the discipline for increased focus on risk management and the intense desire among disaster management Stakeholders in the Caribbean and elsewhere to accelerate initiatives in promoting disaster loss reduction. (CDM Strategy)
Community Resilience
The ability of a community to cope with the effects of a hazardous event through appropriate prevention, mitigation, preparedness, response and recovery mechanisms (adapted from WCDR).

Coping Capacity
The means by which people or organizations use available resources and abilities to face adverse consequences that could lead to a disaster. In general, this involves managing resources, both in normal times as well as during crises or adverse conditions. The strengthening of coping capacities usually builds resilience to withstand the effects of natural and human-induced hazards. (ISDR)

DRM
The systematic process of using administrative decisions, organization, operational skills and capacities to implement policies, strategies and coping capacities of the society and communities to lessen the impacts of natural hazards and related environmental and technological disasters. This comprises all forms of activities, including structural and nonstructural measures to avoid (prevention) or to limit (mitigation and preparedness) adverse effects of hazards. (ISDR)

DRR
The conceptual framework of elements considered with the possibilities to minimize vulnerabilities and disaster risks throughout a society, to avoid (prevention) or to limit (mitigation and preparedness) the adverse impacts of hazards, within the broad context of sustainable development. DRR involves:
- Risk awareness and assessment including hazard analysis and vulnerability/capacity analysis;
- Knowledge development including education, training, research and information;
- Public commitment and institutional frameworks, including organizational, policy, legislation and community action;
- Application of measures including environmental management, land-use and urban planning, protection of critical facilities, application of science and technology, partnership and networking, and financial instruments;
- Early warning systems including forecasting, dissemination of warnings, preparedness measures and reaction capacities (ISDR)

Early Warning
The provision of the means by which people or organizations, use available resources and abilities to face adverse consequences that could lead to a disaster. In general, this involves managing resources, both in normal times as well as during crises or adverse conditions. The strengthening of coping capacities usually builds resilience to withstand the effects of natural and human-induced hazards. (ISDR)

Imperatives
Essential and urgent action necessary for vitally important change to come about.

Intermediate Results (IRs)
Interim Targets set to measure progress toward achievement of Strategic Objective. (CDM Strategy)

Mainstreaming
Making Comprehensive Disaster Management an integral dimension of the policies and programmes in all political, economic and societal spheres. (BCPR)
<table>
<thead>
<tr>
<th><strong>Mitigation</strong></th>
<th>Structural and non-structural measures undertaken to limit the adverse impact of natural hazards, environmental degradation and technological hazards. (ISDR)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>National Disaster Management Office (Agency)</strong></td>
<td>The NDMO (NDMA) is the government agency with focal responsibility for disaster management in the respective country. It is generally headed by the country’s Disaster coordinator. (Baastel-ESL)</td>
</tr>
<tr>
<td><strong>National Disaster Organization</strong></td>
<td>NDO refers to the national organizational structure of institutions linked for the purpose of attending to the legal, institutional and operational aspects of disaster prevention, mitigation, preparedness, response, recovery and rehabilitation. The NDO is generally headed by the Prime Minister or Head of government in the respective country. (Baastel-ESL)</td>
</tr>
<tr>
<td><strong>Outcomes</strong></td>
<td>Targets to be achieved in the Medium-term in the results-based framework. Outcomes result from an amalgam of short-term outputs. (Baastel)</td>
</tr>
<tr>
<td><strong>Outputs</strong></td>
<td>Short-term Results from activities undertaken toward the medium-term outcome. (Baastel)</td>
</tr>
<tr>
<td><strong>Preparedness</strong></td>
<td>Activities and measures taken in advance to ensure effective response to the impact of hazards, including the issuance of timely and effective early warnings and the temporary evacuation of people and property from threatened locations. (ISDR)</td>
</tr>
<tr>
<td><strong>Prevention</strong></td>
<td>Activities to provide outright avoidance of the adverse impact of hazards and means to minimize related environmental, technological and biological disasters. Depending on social and technical feasibility and cost/benefit considerations, investing in preventive measures is justified in areas frequently affected by disasters. In the context of public awareness and education, related to disaster risk reduction changing attitudes and behavior contribute to promoting a &quot;culture of prevention&quot;. (ISDR)</td>
</tr>
<tr>
<td><strong>Recovery</strong></td>
<td>Decisions and actions taken after a disaster with a view to restoring or improving the pre-disaster living conditions of the stricken community, while encouraging and facilitating necessary adjustments to reduce disaster risk. Recovery (rehabilitation and reconstruction) affords an opportunity to develop and apply disaster risk reduction measures. (ISDR)</td>
</tr>
<tr>
<td><strong>Relief/Response</strong></td>
<td>The provision of assistance or intervention during or immediately after a disaster to meet the life preservation and basic subsistence needs of those people affected. It can be of an immediate, short-term, or protracted duration. (ISDR)</td>
</tr>
</tbody>
</table>
| **Resilience** | The capacity of a system, community or society potentially exposed to hazards to adapt, by resisting or changing in order to reach and maintain an acceptable level of functioning and structure. This is determined by the degree to which the social system is capable of organizing itself to increase its
capacity for learning from past disasters for better future protection and to improve risk reduction measures. (ISDR)

**Results Based Management (RBM)**

Rather than focusing programme/project management efforts on the monitoring of inputs, activities and processes, an RBM approach concentrates on ‘results’ and places emphasis on the following dimensions:

- Defining realistic results based on appropriate analysis and context;
- Clearly identifying programme beneficiaries and designing programmes/projects that meet their needs and priorities;
- Using results information to make effective management decisions;
- Monitoring the progress made towards expected results with the use of appropriate indicators. (Baastel)

**Risk**

- The probability of harmful consequences, or expected losses (deaths, injuries, property, livelihoods, economic activity disrupted or environment damaged) resulting from interactions between natural or human-induced hazards and vulnerable conditions.
- Conventionally risk is expressed by the notation Risk = Hazards x Vulnerability. Some disciplines also include the concept of exposure to refer particularly to the physical aspects of vulnerability.
- Beyond expressing a possibility of physical harm, it is crucial to recognize that risks are inherent or can be created or exist within social systems. It is important to consider the social contexts in which risks occur and that people therefore do not necessarily share the same perceptions of risk and their underlying causes. (ISDR)

**Vulnerability**

The conditions determined by physical, social, economic, and environmental factors or processes, which increase the susceptibility of a community to the impact of hazards (ISDR)

**Definition and Characteristics of Small and Medium Sized Enterprises**

Numerous definitions have been offered for SMEs globally throughout reports from various organizations including multiple definitions in reports from the ILO, but there is still no one universally accepted definition. It is suggested that SMEs are most commonly classified by the number of employees. Many states define SMEs as having up to 250 employees while in others, variables other than total employment are used, or a SME definition is not available. (Kushnir 2010). Additionally, and importantly, the definitions and characteristics do not only reflect the economic dimension, but also takes into consideration the social and cultural dimensions of a country. This translates into very different practices being used over time, for example, some states do not make the distinction between legal and statistical definitions (Ayyagari, Beck, & Demirgüç-Kun, 2003). Generally however SMEs employ less than one hundred (100) persons on a full-time basis Ayyagari, Beck, & Demirgüç-Kun, 2003).

This is also evident in the Caribbean, where the definition varies from state to state and sometimes even between reports within a state. It has been raised in forums about what constitutes the SME sector in the Caribbean with calls for harmonization of the definition (UNECLAC, 2009). It was stated at a Workshop for boosting SME development and competition in the Caribbean that it would be difficult to adopt a single definition for SMEs across the Caribbean but that adopting consistent parameters such as revenue, employment and linkages would be desirable (adopted from Report of the Workshop on boosting SME development and competition in the Caribbean in Port of Spain, Trinidad, 2009).
From commissioned studies by the World Bank, Caribbean Development Bank and experiences in the region, primarily through financing of SMEs, “it was found that the majority of enterprises employ six to over one hundred persons with very few employing less than six”.

For the purposes of this report, based on feedback from respondents who felt that a definition for the Caribbean should be based on employment and job creation, the following definition was adopted.

“An enterprise employing between 6 –100 persons full time. Of this group, Small Enterprises employ between 6 – 50 persons and Medium Enterprises between 50 to 100 persons”

Respondents universally agreed that the majority of enterprises in the Caribbean would be considered small or medium sized.
1. Executive Summary

It was generally accepted by respondents in the study that SMEs employ between 6 – 100 persons, *(Figure 1)* in keeping with the Caribbean Development Bank “guiding” definition of SMEs. Of this group, Small enterprises were considered to employ between 6 – 50 persons and Medium enterprises between 50 to 100 persons.

Actual SME size was however found to vary somewhat between states in the region as expected from the diversity in population size and business orientation, with smaller populations having a higher proportion of government employees, fewer and smaller SMEs.

The consultant recommends a revisit of the definition of SMEs as used in the Caribbean. Arriving at a final Caribbean definition should be subject to further study, recommendation, formal agreement and ratification by CARICOM, considering its purpose and impact, given the necessity for a more globalized approach to economic development and the resulting need for comparative and competitive equity with larger states and regions. With emerging possibilities allowed by new enabling technologies for greater earnings with relatively lower investment capital and fewer staff, the definition should also be linked to global definitions in order to avoid isolationist tendencies and “fool's paradise” regarding business size and importance that would further a culture of underperformance and entitlement with disproportionate expectations of high standards of living and quality of life. As such, if a definition is to be meaningful, effective and progressive, along with these considerations, “Job Creation” and “Hard Currency Earnings” should constitute the main criteria.

Data from IFC MSME Country Indicators (Jamaica example at *Table 1 below*) supported by respondents during this study indicated that as economic challenges have become more evident in Caribbean states with reduction of jobs in traditional sectors, (primarily from government sources), corresponding growth has occurred both in size of SMEs and % participation in their economies.
Major hotel and agri sector associations, while struggling with internal governance and membership challenges, believe that SMEs would be better served if more enterprises would join their ranks as they have the capacity to communicate their views and interests with a wide range of relevant stakeholders. Increased association membership has however been stymied partially by cost and where fees are waived, often by SMEs lack of trust of their larger competitors.

On average, not more than 10% of small hotels interviewed experienced physical losses above US$100,000 from natural disasters (about 30% of hotels in one country experiencing this magnitude of loss in a recent devastating hurricane), Figure 2 indicating some degree of infrastructure preparedness. They however suffer more so from the lack of destination and recovery marketing with losses in revenue from cancellations and early returns due to hazard events over which they have little control. Small farmers likewise consider their enterprises equally vulnerable to unreliable markets and un-protective trade deals as to natural disasters, which combined together, have decimated the banana industry throughout the Caribbean.

However, while SMEs can quite easily determine losses to physical infrastructure through the cost of repairs, they are rarely able to quantify potential revenue losses from poor marketing or slow recovery, due to inadequate accounting capacity and cash flow to hire the requisite skills. Figure 2 shows the % of SME hotel respondents suffering damage indicated since commencement of their enterprises.

While disaster legislation and enforcement for SMEs are weak or non-existent throughout the Caribbean, there are existing regulations such as standards inspections for fire, building evacuation and electrical hazards among others, under which limited compliance and enforcement can be implemented.

There are also significant knowledge and training deficits in disaster risk management in all SME sub-sectors which must be expeditiously addressed and it is believed that information technology tools would provide the most effective opportunities to achieving this in the shortest possible time.

<table>
<thead>
<tr>
<th>Country Name</th>
<th>Year</th>
<th>GNI per Capita, Atlas Method</th>
<th>Source of MSME Data</th>
<th>Income Group</th>
<th>MSME Definitions (number of employees, unless otherwise noted)</th>
<th>MSME Participation in the Economy</th>
<th>Comments</th>
<th>MSME Employment (% total)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jamaica</td>
<td>2005</td>
<td>3,910</td>
<td>EDI&amp;JBDC</td>
<td>Upper middle</td>
<td>Micro 1-3, Small 4-10, Medium 11-49, MSMEs 200,000, MSMEs per 1,000 people 75.5, e 4.0</td>
<td>2005 data are estimates.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jamaica</td>
<td>1996</td>
<td>2,320</td>
<td>IADB</td>
<td>Lower middle</td>
<td>1-2 3-4, Medium 1-2, Small 5-9, Medium 93,110, MSMEs 37.2, e 3.7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jamaica</td>
<td>1990</td>
<td>1,790</td>
<td>IFC</td>
<td>Lower middle</td>
<td>Micro &lt;25, Small n/a, Medium 88,711, e 37.1, MSMEs 8.0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table 1 - MSMS Historical Data (Jamaica)
Facilitated by currently available and affordable enabling technologies such as universal web sites, smart phones with numerous ‘Apps’, alternative energy solutions, “Airbnb”, “Uber” and other new and revolutionary tools, many opportunities are now presented for marketing, information sharing and education which are necessary drivers for business continuity development and profitability of SMEs with adequate consideration for natural and other hazards. (Airbnb is an emerging technology tool that allows individual SMEs direct access to global markets, so could be used to inform markets in real time of the state of destination and accommodation before, during and after a disaster and enable recovery by avoidance of eg misinformed travel advisories or other impediments to early recovery. Note this interactive tool would be much smarter (quicker and more responsive) than awaiting government funding for mass destination marketing, which in any event disproportionately benefits larger and all-inclusive hotels with relatively little benefits to SME accommodation).

Gender neutrality was noted to be well practiced throughout the SME community and no adverse gender issues were found. Where properties were constructed on hilly ground with many steps, aside from a few wheelchair ramps, no special emergency provisions were noted for vulnerable populations such as the physically challenged or aged persons. Limited day care provisions were made for children on some properties. The small farming sector in countries interviewed continued to show traditional predominance with men.

Government DRR priorities focus on public safety, resilience and national development, while SME priorities focus on short term business survival and profit. While both goals are in fact mutually supporting, insufficient DRR and business management capacity (education, training, resources, financing, etc) on both sides retards the attainment of both sets of goals. It was therefore very clear that given the regional context of small developing countries with severe capacity limitations, a narrow bureaucratic or legislative approach on the part of government DRM managers and professionals would do very little in the short run to integrate CDM practices within SMEs, but that a holistic approach should include SME development as part of a comprehensive national economic development policy.

Consequently, Tourism and Agricultural SMEs in particular rely more on government DRM policies, and management of globalized trade for recovery from disasters than on their own business plans and management skills, placing them squarely at the mercy of public institutions, which invariably are inadequately resourced to provide effective DRM support.

The study concluded that Caribbean SMEs do not yet adequately possess the necessary business planning skills and experience, resources, exposure, knowledge and interest in DRM to adequately secure their businesses from sudden catastrophic natural or man-made events. Business plans and loan approvals for start-ups do not include adequate provisions for DRM training, resources or disaster risk insurance and there is no specific disaster legislation or other mandates for SMEs.

It was agreed that SMEs need to build up their adaptive capacities specifically human resource capacities and to develop partnerships and networks with other organizations and government. On the other hand, government also plays a critical role in building SME resiliency by providing a policy environment that would enable SMEs to effectively address their vulnerabilities; ensuring “weather-proofed” infrastructure and communications facilities; and improving coordination work between the public and private sectors

In order to “jump start” the process for successful promotion of a sustainable environment for effectively integrating SMEs into the CDM agenda, prioritized imperatives (shown at Para 6) are recommended for immediate action. These imperatives are ranked according to priorities of the
It was expressed by some stakeholders that a czar or “champion” (leadership) from the Caribbean DRM community is now needed to resolutely move the SME Disaster Risk Management agenda forward in the interest of national resilience for economic and social development.

2. Introduction

2.1 Purpose

This assignment: **Consultancy to Perform Assessment of Current Disaster Risk Management Practices in Small and Medium Enterprises in the Caribbean and Identification of Needs and Barriers to Integration of Disaster Risk Management in Business Practices** forms part of the component under the ‘Enhancing Knowledge and Application of Comprehensive Disaster Management (EKACDM)’ initiative. This Initiative is a five-year project with the ultimate outcome of implementation of the CARICOM Enhanced Comprehensive Disaster Management (CDM) Strategy and Programme Framework (2007) to reduce the impacts of natural and technological hazards and the effects of climate change on men, women, and children in the region.

There are three intermediate outcomes of the project:

(i) The creation of a regional network which generates, manages, and disseminates knowledge on disaster management, including gender issues;

(ii) The increased use of standardized training materials for University degree courses and for short courses for students, professionals, and others employed in the field; and

(iii) The establishment of mechanisms to mainstream fact-based policy- and decision-making on DRM into key economic sectors and Small and Medium Enterprises (SMEs) in the region.

This report describes the approaches taken and the results of consultations in fulfilment of the Terms of Reference of this assignment towards outcomes mentioned above. (TORs at Annex I)

3. Background to Assignment

The Small and Medium Enterprise sector has been recognized as the engine of growth which holds the promise of economic and social development for CARICOM (Brewster, 2006). Growth has however been hindered by a number of challenges including financing, and marketing, but additionally by major natural hazards, most of which are associated with Climate Change.

3.1 CDM – The “Sendai” Framework.

The Sendai Framework for Disaster Risk Reduction (2015-2030) is an international Treaty which was adopted by UN member states on 18th March 2015 at the Third UN World Conference on Disaster Risk Reduction held in Sendai, Japan. It is the successor agreement to the Hyogo Framework for Action (2005–2015), which had been the most encompassing international accord to date on disaster risk reduction.

The Sendai document emerged from three years’ of talks, during which UN member states, NGOs and other stakeholders made calls for an improved version of the existing Hyogo Framework, with a set of common standards, a comprehensive framework with achievable targets, and a legally-based instrument for disaster risk reduction. Member states also emphasized the need to tackle disaster risk reduction and climate change adaption when setting the Sustainable Development Goals, particularly in
Caribbean CDM strategies are periodically updated to conform with and supplement global DRM frameworks which support legislative, policy and strategy agenda towards (including this case), the integration of Disaster Risk Management in Business Practices in Small and Medium Enterprises.

The Sendai Framework sets four specific priorities for action and seven global targets shown in the chart below.

**SENDAI FRAMEWORK FOR DISASTER RISK REDUCTION**

**2015-2030**

**Scope and purpose**

The present framework will apply to the risk of small-scale and large-scale, frequent and infrequent, sudden and slow-onset disasters, caused by natural or manmade hazards as well as related environmental, technological and biological hazards and risks. It aims to guide the multi-hazard management of disaster risk in development at all levels as well as within and across all sectors.

**Expected outcome**

The substantial reduction of disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries.

**Goal**

Prevent new and reduce existing disaster risk through the implementation of integrated and inclusive economic, structural, legal, social, health, cultural, educational, environmental, technological, political and institutional measures that prevent and reduce hazard exposure and vulnerability to disaster, increase preparedness for response and recovery, and thus strengthen resilience.
## Targets

<table>
<thead>
<tr>
<th>Priority 1</th>
<th>Priority 2</th>
<th>Priority 3</th>
<th>Priority 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understanding disaster risk</td>
<td>Strengthening disaster risk governance to manage disaster risk</td>
<td>Investing in disaster risk reduction for resilience</td>
<td>Enhancing disaster preparedness for effective response, and to «Build Back Better» in recovery, rehabilitation and Reconstruction</td>
</tr>
</tbody>
</table>

### 3.2 Disaster Risk Management (DRM)

Disasters can be considered as outcomes of ongoing “risk processes”, in which the prevailing circumstances of hazards, exposure and vulnerabilities combine to generate catastrophic events. Risks may grow and accumulate over time, becoming evident as greater losses only when a hazard event strikes.

**Linkages to climate change**: It is well accepted that disaster risk reduction measures play an important role in responding to constantly changing risks from emerging hazards, whether from increases in ‘weather and climate-related hazards’ including sea-level rise, ‘globalization’ or ‘development’. Improved resilience resulting from DRR measures has through multiple disaster events over the past 30 years mitigated loss of life and property and protected national economies through prevention, mitigation, preparedness, response, and recovery strategies and practices for both climate related and man-made hazards.

### 3.3 CDM and SMEs

The severity of weather events has impacted many businesses and individuals, the main risks to business being increased costs and loss of revenue (Ingirige, 2008). SMEs are often confronted with the challenge of recovering post extreme weather events due to inadequate capacity. Ingirige (2008:p584) posits: “Historically, it has been recognized that the SME sector faces various challenges for implementing policies, transfer of best practice and various Government agendas”. The ability of SMEs to effectively...
respond to and recover from various catastrophic events are often constrained by their inability to integrate into business practices factors such as business continuity planning and marketing, vulnerability to cash flow interruptions, capital for risk financing and insurance, resources for recovery, effective interactions with national institutions, infrastructure, individual attitudes and organizational culture, disaster knowledge, training and easy access to expertise and business sector perceived exposure to risk. For the Caribbean region hazard events such as hurricanes, droughts and floods can lead to crop failure, destruction of nature reserves and resorts, reduction in, and in some cases a cessation in manufacturing and widespread disruption to the energy sector. These all have significant implications for individual livelihoods, communities and by extension – national economies.

The people of the Caribbean face significant development challenges as their small, export-dependent countries adjust to loss of preferences in an increasingly competitive global marketplace. New technologies and rapid changes in the global economy present new opportunities, but they require the region to adjust, or else be left behind. To meet the challenge of this new competitive environment, the region must do all it can to encourage investment in competitive enterprises. This will include steps to reduce risks to the investment and to the infrastructure on which it depends. Although no one can afford to increase costs unnecessarily in a highly competitive environment, but neither can the region afford to continue bearing the cost of repeated replacement of lost investments.

4. Assignment Objectives
The objective of this consultancy was to undertake an assessment of current Disaster Risk Management (DRM) practices in Small and Medium Enterprises (SMEs) in two (2) selected sectors and to identify needs and barriers to integration of DRM into business practices. The primary outputs are:
5. Methodology
5.1 Sectors for Assessment
The choice of sectors for investigation was made from the following list proposed by the initiatives management team:

a. Health
b. Education
c. Tourism
d. Agriculture
e. Financial
f. Civil Society
Using damage and loss figures from Hurricane Ivan in Jamaica as a significant representation of proportional sectoral impact in countries around the Caribbean, (Figure 4), the Agricultural and Tourism industries were seen to be most impacted in the productive sector and along with recommendations from a major regional DRR financing stakeholder, given their importance to the region’s economy, were selected as priorities for this assessment. Furthermore, these sectors are also impacted by other events associated with climate and seismic hazards (floods, droughts, earthquakes) often leading to destruction of livelihoods and social dislocation. It is also expected that given the linkages of these sectors to other areas of the economy the findings from this study can yield insights applicable to most other sectors.

5.2 Regional States under Assessment
Eighteen (18) potentially eligible CDEMA Participating States were considered, with nine (9) selected by the initiatives management team. Selected states were Saint Lucia, St Vincent and the Grenadines, Grenada, Dominica, and Guyana along with the four “Regional Focal Points” Jamaica, Barbados, Trinidad and Tobago and Antigua and Barbuda, based on the following criteria:
- States served by DFTAD Caribbean Programme
- Significant hazards affecting the country between 2004-2013;
- Contribution of EKACDM Initiative priority sectors to the country’s Gross Domestic Product (GDP);
- Total economic damage (‘000 US) from 2004-2013 for natural disasters over the country’s total GDP;
- Total economic damage (‘000 US) from 2004-2013 for technological disasters;
- Existence of a national Small Business Association (SBA) with membership in the Caribbean Association of Small and Medium Enterprises (CASME).

5.3 Overall Approach
Access to data, documents as well as to stakeholders (see respondent stakeholder list at Annex C) was critical to achieving the objectives of this assignment. Having a wide range of information to gather and numerous stakeholders to access, the “Charrette” method was considered best suited to this task, first to determine the most appropriate approach to conducting desk reviews, then next to determine how best to engage and interview numerous stakeholders, so geographically dispersed around the Caribbean, particularly during the summer holiday period, with severe challenges of cost, time and access. A team of the consultant and associates was divided into small groups, each given different challenges to solve, then rotating the challenges among the groups for refinement until eventual agreement.

The “Charrette” method was also used for the development of data gathering instruments, which would seek to determine common issues faced by SMEs in implementing/integrating DRM into business...
practices and the best solutions for overcoming them with a participatory approach that would maximize stakeholders’ contributions with information and recommendations based on their own suggestions to facilitate ‘buy-in’ through ownership of solutions. The team of consultants and associates was again divided into groups and tasked with developing data gathering instruments to a. Best solicit challenges and b. Best solicit solutions. These groups were then rotated multiple times until consensus was achieved on the best possible instrument.

5.4 Survey Methodology

Stakeholder Identification
In order to develop a target stakeholder list for consultation in the shortest possible time that would deliver desired results of maximizing “informed” stakeholder participation on DRR issues, a combination of “Purposive” and “Snowball” sampling methods were employed in the identification and investigative processes. Commencing with CDEMA and NDMAs, then through regional and national government institutions followed by membership lists from chambers of commerce, private sector enterprise associations and other organizations, regional and national agencies disaster management stakeholders and later SME operators were identified, even through the “yellow pages”, using such predetermined ‘Purposive’ criteria as the sectors under consideration for this consultancy (SMEs in Tourism and Agriculture), the ‘guiding’ definition of SMEs in the Caribbean region, along with individuals within SMEs who had knowledge of their DRR issues. (See the stakeholder list at Annex C).

The consultant further used ‘Snowball’ sampling from names earlier received from targeting ‘unreachable’ SMEs, primarily small farming entities and small guest houses. Methods of overcoming limitations and challenges were outlined at Para 5.8.

Stakeholder Consultations
Desk reviews of literature from more than Forty One (41) documents pertaining to CDM and DRM policies and practices applicable to DRM in SMEs (References at Para 9), along with web sites of more than 100 targeted institutions and enterprises

Figure 6 - Consultancy Process
(Table 2 below and Annex C) were used in preparation for stakeholder consultations.

Identified stakeholders were introduced to the project by letters of introduction shown at Annex E and Annex F and consultations were timetabled as far as was possible to take into consideration the availability of targeted groups and individuals. This activity requested individuals and group representatives to state their availability for the dates provided and would be a highly participatory process.

Targeted stakeholders were asked to participate in surveys so designed to capture relevant information with SME questions geared to current business practices related to DRM and factors that inhibited integration. (See Data Collection Instrument at Annex G).

Consultations with regional and national organizational stakeholders were preferred to take the form of Focus Group discussions that would be held in each country during the same week stipulated in the itinerary, but this approach had to be amended to conducting individual interviews due to availability challenges.

Stakeholders who were contacted by emails and telephone calls and those available for interviews are summarized in the following table: (Detailed Lists at Annex C)

<table>
<thead>
<tr>
<th></th>
<th>JAMAICA</th>
<th>ANTIGUA</th>
<th>ST LUCIA</th>
<th>ST VINCENT</th>
<th>BARBADOS</th>
<th>TRINIDAD</th>
<th>GUYANA</th>
<th>GRENADA</th>
<th>DOMINICA</th>
<th>TOTALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMALL HOTELS TARGETED</td>
<td>200</td>
<td>70</td>
<td>50</td>
<td>70</td>
<td>90</td>
<td>100</td>
<td>60</td>
<td>60</td>
<td>20</td>
<td>720</td>
</tr>
<tr>
<td>SMALL HOTEL RESPONSES</td>
<td>20</td>
<td>6</td>
<td>8</td>
<td>9</td>
<td>9</td>
<td>10</td>
<td>6</td>
<td>11</td>
<td>6</td>
<td>85</td>
</tr>
<tr>
<td>AGRICULTURE SME TARGETED</td>
<td>28</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>57</td>
<td></td>
<td></td>
<td></td>
<td>85</td>
</tr>
<tr>
<td>AGRICULTURE SME RESPONSES</td>
<td>7</td>
<td>5</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>CDC</td>
<td>NEMO</td>
<td>Agri Extn Officer</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>FARMING RESPONSES</td>
<td>4</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>CDC</td>
<td>NEMO</td>
<td>Agri Extn Officer</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>AGRI PROCESSING RESPONSES</td>
<td>7</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td>CDC</td>
<td>NEMO</td>
<td>Agri Extn Officer</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>TOTAL SME RESPONSES</td>
<td>27</td>
<td>11</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>6</td>
<td>11</td>
<td>6</td>
<td>101</td>
</tr>
<tr>
<td>NATIONAL AGENCIES TARGETED</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>24</td>
</tr>
<tr>
<td>NATIONAL AGENCY RESPONSES</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>24</td>
</tr>
<tr>
<td>REGIONAL AGENCIES TARGETED</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>24</td>
</tr>
<tr>
<td>REGIONAL AGENCY RESPONSES</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>24</td>
</tr>
</tbody>
</table>

5.5 Situation Analysis
A major component of this consultancy was the identification of Needs and Barriers to the integration of Disaster Risk Management (DRM) in small business practices which were primarily determined from discussions with a wide range of stakeholders. Investigations were conducted using priorities of the Sendai Framework as baselines, being the latest overarching global framework for Comprehensive Disaster Management, with the following main DRM factors relating to SME business practices considered. (Raw survey data resulting from consultations is shown at Annex H.)
Figure 7 - SME Factors Considered and Linkages to Sendai Priorities

Priority 1: Understanding disaster risk
Factor 1.1: SME Hazard Identification
Factor 1.2: Research and Data for SME CDM Decision Making

Priority 2: Strengthening disaster risk governance to manage disaster risk
Factor 2.1: Legislation, Strategy, Standards Compliance
Factor 2.2: Organization and Partnerships
Factor 2.3: Planning and Plan Operationalization

Priority 3: Investing in disaster risk reduction for resilience
Factor 3.1: Resources and Technology
Factor 3.2: Financing
Factor 3.3: Recovery Marketing

Priority 4: Enhancing disaster preparedness for effective response, and to «Build Back Better» in recovery, rehabilitation and Reconstruction
Factor 4.1: Education, Training and Capacity Development
Factor 4.2: Communications Awareness and Information Sharing
5.6 Matrix and Ranking

Needs, Barriers and Recommended Interventions for DRM integration in business practices identified from consultations are mapped in a framework matrix at Para 6.1. Imperatives towards achieving integration from these ‘Recommended Actions’, are shown in Table 4, Para 7 ranked primarily according to priorities of the “SENDAI framework” and secondarily according to relative ease of implementation.

5.7 Enterprise Surveys

A total of (101) enterprises were surveyed of which (16) were small farms or agro-processing plants and (85) were small hotels and guest houses. (Figure 8)

These figures represent between an estimated 9% to 20% of the total enterprises in states as shown in (Figure 9) This relatively small sample size is not statistically sufficient to be scientifically definitive, but rather indicative of the region for further and more detailed studies as may become necessary.

No agricultural enterprises were interviewed in four states (Figure 8) but this sector was well represented through consultations with Ministry of Agriculture Extension Officers who proved to be very willing, informed and engaged respondents, in these cases being small farmers themselves. Relative ease of access to tourism over agricultural entities was indicative of a gradual shift taking place in the region from farming to tourism activity, as repeatedly reinforced by regional experts from FAO and various Ministry of Agriculture respondents.

5.8 Challenges faced during execution of Consultancy

<table>
<thead>
<tr>
<th>Challenges</th>
<th>Mitigation Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Weather</strong> – No problems were experienced during consultations</td>
<td><strong>Yellow pages from telephone books along with the internet were used to identify hospitality and farming entities upon arrival in each country.</strong></td>
</tr>
<tr>
<td><strong>Identification of SMEs</strong> - Most NDMAs were not able to produce comprehensive lists of farms or agro-enterprises in their states. Very few small farming entities listed in telephone books and none at all were found in some states. Time was also limited to completely identify SMEs by</td>
<td><strong>Smaller samples of farming entities were interviewed than were hotels and guest houses so the agri sector was mainly represented through those found in larger</strong></td>
</tr>
</tbody>
</table>

Figure 8 - # of SMEs Surveyed

Figure 9 - Survey Sample Size (% of Total SMEs in Countries)
snowball methodology states and through interviews with Min of Agriculture extension officers in smaller ones.

- **Non-Availability of Stakeholders** - Consultants were unable to arrange sufficiently representative, collective key stakeholder consultations due to relevant persons not being in country or available all at the same time while visiting each country.
- There was some reluctance on the part of SME executives to provide the information being sought for a number of reasons, ranging from preference to remain anonymous to government monitoring and enforcement agencies to open disdain for surveys.
- Limited registration of small and medium enterprises was also encountered,

- **Poor Response to Survey Questionnaires** - Survey forms emailed to all stakeholders across the region and survey monkey instrument developed and disseminated, followed up by telephone calls were not completed and returned in most cases. Few respondents found the time for responding to written or on-line surveys after being repeatedly reminded. Some survey questions were not well understood particularly by ‘lower informed’ SME respondents who were sometimes instructed by management to respond. Allowance therefore had to be made for some amount of inaccuracy from these respondents and responses should be considered as ‘indicative’ rather than ‘definitive’.
- Assignment would need considerably more time and budget to comprehensively gather data as respondents were either not willing to divulge ‘sensitive’ information, too busy with other priorities, or lacked capacity to respond electronically.
- Some regional organizations did not feel sufficiently comfortable with giving their opinions as they saw their roles as dealing multilaterally with governments and thought it best not to opine on country level matters.

- **Consultancy Delays** – Consultancy suffered initial delays is exiting inception stage due to staff

- **Consultancy Delays** – Consultancy suffered initial delays is exiting inception stage due to staff

- **Consultancy Delays** – Consultancy suffered initial delays is exiting inception stage due to staff
unavailability over the summer holiday period. Delays also experienced from slow response to survey questionnaires and other instruments notwithstanding numerous and expensive telephone and email follow ups.

during field work conducted in compressed time.

<table>
<thead>
<tr>
<th><strong>Limited budget for field work</strong></th>
<th>Two person team used with the principal consultant engaged with national level institutions while assistant conducted interviews of enterprises, facilitating recovery of lost time on assignment and getting back on track for timely completion.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limited time for conducting SME interviews as travel budget would not allow for more than one to two days in each country. Consultation time also limited by the cost of telephone interviews across the region and by timeframe to complete the assignment.</td>
<td>Shared hotel room used in field work to facilitate budgetary limitations</td>
</tr>
<tr>
<td>Less consultations or visits to fewer states would not have provided adequate representation across the region as significant differences between states needed to be recognized.</td>
<td>Smaller sample of SMEs were interviewed than expected.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Travel Delays</strong> – Flight delays and cancellations were experienced during travel throughout the region.</th>
<th>Itinerary deliberately arranged for evening flights to each country in anticipation often resulting in consultants arriving states after midnight. This allowed early commencement of interviews each morning.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th><strong>Social Disturbances / Disaster events</strong></th>
<th>None experienced during the assignment. This risk referred contextually to potential disruptions to the assignment, which could have resulted in unplanned delays or even outright cancellation. Reliability of disaster forecasting would therefore be vital to planning and work scheduling and enhance confidence for overall project completion and outcome.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th><strong>5.9 Report Structure</strong></th>
<th>A main report supported by a number of annexes with supporting detail is presented in a practical, ‘action-oriented’ format to facilitate transformational decision making and activity by SMEs, CDEMA, NDMAs, Donors and other DRM practitioners in addressing the needs and barriers identified. It is also presented in a format suitable as a teaching instrument for Caribbean students, with findings supported by evidence and data through charts, graphs, matrices and tables.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Findings and recommendations are purposely presented as a composite region, as opposed to individual states, for the following reasons:</td>
<td>Findings and recommendations are purposely presented as a composite region, as opposed to individual states, for the following reasons:</td>
</tr>
<tr>
<td>Only (9) of (16) CDEMA member states were include in this study so that individual or comparative analysis would not be helpful to states not represented.</td>
<td>None experienced during the assignment. This risk referred contextually to potential disruptions to the assignment, which could have resulted in unplanned delays or even outright cancellation. Reliability of disaster forecasting would therefore be vital to planning and work scheduling and enhance confidence for overall project completion and outcome.</td>
</tr>
</tbody>
</table>
While ‘raw’ (unrefined) data gathered from individual states is provided at Annex H, the study is not meant to provide comparative or competitive analysis or results, but rather to facilitate improved standards across the entire region where all states aim for ‘best practices’ identified. Analysis therefore synthesizes practices and gaps and seeks to promote standardization.

This approach presents further opportunity to view the region as a composite whole rather than the sum of its individual parts.

6. Main Findings.

Discussions and data on main findings are presented at Annex A, while detailed analysis is presented in a Matrix of Current Situation and Practices, Gaps, Needs, Barriers and Recommended Interventions at Annex B. The matrix represents findings gleaned from discussions with stakeholders during structured interviews using survey forms (Annex G).

Many SMEs, particularly agricultural farms and the agri-industry, were either unavailable, unwilling or lacked capacity to participate (electronically) in the study and never responded to our emails, returned calls or complete questionnaires as promised. Despite persistent attempts to engage them. As such, only (16) agricultural enterprises were interviewed compared to 85 tourism entities. (Table 3 above). Some farms and agri processing plants that were in fact accessible fell into the ‘micro enterprise’ category, which was not included in this study. Otherwise there was insufficient time and opportunity during short country visits to make contact with them, given a limited travel budget. Information on Agri SMEs was therefore obtained from NEMO in some cases and from the Ministry of Agriculture’s Extension Officers as well as from the FAO office in Barbados, who were very knowledgeable and well able to represent issues confronting agri communities in all states.

The majority of responses to questionnaires were practically identical for both sectors with DRR knowledge of plans, resources, activities etc. being equally limited to information from their NDMAs through the public media primarily targeting households in vulnerable, low income populations, but none specifically related to SMEs. A generic table (Annex B) was therefore used for analyzing and tabulating the issues as it was not considered meaningful or effective to separate the sectors for this purpose and would be too repetitive for easy reading.

Interviews generally showed that while perspectives of Government institutions centered on CDM practices, compliance and public safety, SMEs were purely focused on business practices for short term survival and profit. It was therefore very clear that given the context of developing countries with severe resource limitations, a narrow bureaucratic approach on the part of national DRM managers would do very little to integrate CDM practices within SMEs, but that a holistic approach should include SME development as part of a comprehensive national development policy.

A summary of the main findings with DRR Functions, Integration Imperatives and expected results, is shown in Table 6 below. Imperatives are ranked primarily according to priorities of the “SENDAI framework” and secondarily according to relative ease of implementation (low hanging fruit). Given that the implementing architecture for SMEs varies between participating states, the “Lead By” column in the matrix is expected to be filled by the appropriate NDMA Committee with responsibility for SMEs or the SME sector under consideration in each jurisdiction.
Table 4 - Imperatives for integration

<table>
<thead>
<tr>
<th>RANK</th>
<th>DRR FUNCTION</th>
<th>SENDAI PRIORITY</th>
<th>INTEGRATION IMPERATIVES</th>
<th>RESULTS</th>
<th>LEAD BY</th>
</tr>
</thead>
</table>
| 1.   | Hazard Identification               | 1              | 1. DRR including HRVA training workshops for SMEs  
2. Facilitate Hazard and Risk identification for SMEs  
3. Extend the national hazard and risk mapping programme to include SMEs and all natural and man-made – technological hazards.  
4. Develop and deploy On-line “Risk Maps” including DRR and business risk factors for SME decision making (Web sites, Smart Phone Apps) “Model Business Continuity Plan”  
5. Implement set-back requirements considering projections for climate change impact and re-evaluate coastal development and placement of infrastructure. | 1. Comprehensive SME hazards and risks identification, (including DRR in ‘business risks’) used for business planning and resource financing.  
2. HRVA methodologies and procedures harmonized and operationalized to include SMEs.  
3. Availability and on-line access to multi-hazard disaster risk information and assessments substantially increased to SMEs.  
4. Reduction in disaster damage to critical infrastructure and disruption to the economy, among them tourism and agriculture facilities.  
5. Hotel ‘setback’ regulations enforced | CDEMA  
NDMA  
Appropriate SME Committee |
| 2.   | Research and Data for SME DRR Decision Making | 1              | 6. DRR Decision making training workshops for SMEs  
7. Creation of a project inventory data base | 6. Results from DRR events, projects, studies, and research universally shared on line, facilitated by cell | CDEMA  
NDMA  
Appropriate SME |
for DRR and CCA related projects
8. DRR ‘data warehousing’ with ‘data mining’ tools including data on all SME sectors implemented on universal servers
9. Simplified access to on-line DRR Legislation and other relevant DRR decision making information for SMEs (Web sites, Smart Phone Apps)

7. Public data available on contribution of SMEs to economy and employment.
8. Mandatory DRR archives and databases within public agencies include data on agriculture and tourism and available for SME analysis and decision making
9. DRR data is a critical pillar in ensuring the improved and sustained success of SMEs.

### 3. Legislation, Strategy, Standards and Compliance

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>10. Establish and publicize on-line International, Regional and National DRR Frameworks, Strategies, Policies and Standards for SMEs</td>
<td>10. DRR Legislation expanded to include SMEs</td>
</tr>
<tr>
<td></td>
<td>11. DRR Training for SMEs facilitated by Hotel and other sector Associations</td>
<td>11. Mandatory DRR Contingency and Business Continuity Plans and SOPs for SMEs</td>
</tr>
<tr>
<td></td>
<td>12. Establish SME Certification to include DRR standards compliance</td>
<td>12. Mandatory SME monitoring and compliance</td>
</tr>
<tr>
<td></td>
<td>13. Certify and incentivize SME hotels and guest houses that meet minimum standards including hazard liability insurance and publish on Tourism Authority web site along with other incentives.</td>
<td>13. Strengthened SME DRR support and monitoring mandate and resources for existing DRR monitoring agencies (eg NDMA, Fire, Health, depts.etc)SME standards include DRR considerations</td>
</tr>
<tr>
<td></td>
<td>14. Link SMEs to regional compliance incentive initiatives</td>
<td>14. Number of SMEs with DRR / CDM strategies</td>
</tr>
<tr>
<td></td>
<td>15. Use regulations within existing laws such as standards inspections for fire,</td>
<td></td>
</tr>
</tbody>
</table>

- CDEMA
- NDMA
- Appropriate SME Committee
|   | Building evacuation and electrical hazards among others, to conduct DRR resilience programmes for SMEs | Substantially increased.  
15. Government incentive programmes and/or sanctions promote SME risk reduction.  
16. Regional and international cooperation and sustainable support to complement national DRR/CDM legislation, strategies and actions for SMEs substantially enhanced.  
17. Govt’s enforce existing best practice regulations and mechanisms  
18. Comprehensive SME registration database |  
|   | **4. Organization and Partnerships** |  
|   | 17. Develop MOUs and Work Plans to build partnerships between SMEs, NDMAs and other Govt institutions  
18. SMEs partner with established local, regional and international organizations eg, Chambers of Commerce, Private Sector Organizations, Small Business Associations, etc.  
19. Provide adequate resources for NDMAs to direct and support SME DRR programmes |  
|   | 19. Regional and international cooperation and sustainable support to complement national DRR/CDM for SMEs substantially enhanced.  
20. SMEs benefit from representation through sector associations.  
21. MOUs and regular communication between SME associations and NDMAs (and other relevant partners) to support SMEs in DRR planning for |  
|   | ▪ CDEMA  
▪ NDMA  
Appropriate SME Committee |
| 5. Planning and Plan Operationalization | 2 | 20. CDEMA Finance and Economic Sector Sub-Committee to complete planning and implement the CDM Strategy for SME needs  
21. CDEMA to develop model Multi-Hazard CDM Plans and SOPs for SMEs  
22. Appoint CDM Coordinators in relevant Ministries including every SME sector to manage CDM plans.  
23. SMEs build capacity to implement and manage DRR plans and resources  
24. Conduct CDM planning workshops for SMEs  
25. Small Business Units of Financial Institutions to include DRR considerations in business plans for loan approvals  
26. Develop and deploy model “CDM Plan”, “Business Continuity Plan” , “Recovery Plan”, “SOPs” for SMEs through Web sites, Smart Phone Apps, etc. | 22. SME sector Associations monitor DRR compliance of its members.  
23. Sector (Agri and Tourism) CDM coordinators appointed at national level  
24. Standardized multi-hazard, CDM and Business Continuity and Recovery Plans exist in SMEs  
25. ADRM Plans operationalized at all levels in all PS’s  
26. SOPs and drills of preparedness activities developed and conducted by SME.  
27. Disaster damage to critical infrastructure and disruption to the economy, among them tourism and agriculture facilities, substantially reduced.  
28. Direct disaster economic loss by SMEs in relation to gross domestic product (GDP) reduced. | CDEMA  
NDMA  
Appropriate SME Committee |
|---|---|---|---|
| 6. Resources and Technology | 3 | 27. SMEs adopt modern technology, techniques and facilities for business continuity and rapid recovery (eg solar and other forms of alternative energy) | 29. NDMA resources adequate for supporting SME DRR programmes.  
30. Public authorities have | CDEMA  
NDMA  
Appropriate SME Committee |
<p>| 28. | Government assistance to SMEs to select and acquire most suitable resources to mitigate, respond to and recover from disasters. |
| 29. | Establish coordinated programme of SME DRR resourcing and compliance alongside incentive policies |
| 30. | Affordable SME Staff training programme for DRR competency |
| 31. | Build Govt. capacity to manage DRR plans and public resources. |
| 32. | Improve Govt. management and accountability of existing public DRR resources (Department budgets, trained staff, DRR literature, various types of equipment, communications, computers, radios, vehicles, stationery, etc). |
| 33. | Acquire necessary public resources to monitor and enforce DRR plans and activities |
| 34. | Mandatory annual data audits in Govt. DRR agencies with accountability and sanctions. |
| 35. | Access to agri disease eradication equipment and resources |
| 36. | Access to DRR resource financing for small farmers |
| 31. | Adequate skills and resources to enforce DRR legislation and regulations among SMEs |
| 32. | SME inclusion in DRR job descriptions within Govt. agencies. |
| 33. | Disaster damage to critical tourism and agricultural infrastructure and other material resources substantially reduced. |
| 34. | Regional and international cooperation and sustainable support to complement national DRR/CDM resources for NDO and SMEs substantially enhanced. |
| 35. | Prevalent awareness, training and use of innovative and “smart” farming practices to increase productivity and profitability in agri. SMEs. (Eg greenhouses, smart drip irrigation, solar PV systems, etc) |
| 36. | Substantially greater use of mechanized resources to improve agricultural output and profitability |
| Committee | SMEs operate collectively through |</p>
<table>
<thead>
<tr>
<th></th>
<th>Financing</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>7.</td>
<td>3</td>
<td>37. Financing organizations provide training in business planning for SMEs and include Disaster Plans in loan approvals.</td>
<td>39. Low cost financing mechanisms for SMEs.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>38. Establish and/or modify government Risk Transfer and Recovery support mechanisms to include SMEs in Parametric (CCRIF), Pooled, Contingency or other Funds and financing methods</td>
<td>40. DRR financing mechanisms mainstreamed.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>39. Modify CCRIF terms and subscriptions to more substantially include SMEs</td>
<td>41. Special Govt. financial assistance for SME business continuity planning and recovery.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>40. Insurance companies should be lobbied to include DRR in tourism liability insurances. Banks too can be encouraged to require DRR plans and such like for loans.</td>
<td>42. Sustainable risk transfer mechanisms suitable to SME for early recovery.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>41. Identify or create affordable parametric insurance options for individual SMEs</td>
<td>43. Affordable group disaster risk insurance options for SMEs.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>42. Set up financing facilities such as grants and concessionary loans intended for SMEs and a special credit line in the form of Business Disaster Loans (i.e. a risk</td>
<td>44. Full participation and benefits in CCRIF and other national insurance mechanisms for SMEs.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>‘associations’ and benefit from shared financing, resources etc.</td>
<td>45. SME resilience to disasters and sustainability</td>
</tr>
</tbody>
</table>

- CDEMA
- NDMA
- Appropriate SME Committee
mitigating facility) for medium-sized companies. Grants can be directed to affected micro and small enterprises that have no productive assets left and negligible creditworthiness.

43. Provide additional capital support for SMEs during disaster events, including optional loan restructuring. Tax reprieves should be considered especially for small and medium enterprises substantially increased.

46. Regional and international cooperation and sustainable support to national DRR/CDM financing for NDO and SMEs substantially enhanced.

47. Affordable Livestock insurance

---

<table>
<thead>
<tr>
<th>8.</th>
<th>Recovery Marketing</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>44. SMEs use modern low cost, affordable technology for sustainability and recovery marketing (eg Airbnb, Web sites, email, and other electronic services)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>45. Promote and coordinate intra-Regional tourism for recovery marketing for small hotels.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>46. Coordinated Intra-Regional agri recovery marketing for small farms and agri industry</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

48. Recovery marketing strategies and measures ensure early SME recovery from disasters.

49. Direct disaster economic loss by SMEs in relation to gross domestic product (GDP) reduced.

50. Disaster damage to critical tourism and agricultural infrastructure and disruption to the economy substantially reduced.

51. Regional and international market support for tourism and agriculture SME recovery substantially enhanced.

52. Trade deals protect SME tourism and agricultural markets

53. Small farmers have direct access to market

- CDEMA
- NDMA
- Appropriate SME Committee
<table>
<thead>
<tr>
<th></th>
<th>Education, Training, Drills and Capacity Development</th>
<th></th>
<th>information and affordable recovery financing</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.</td>
<td><strong>4</strong></td>
<td>47. Sector Associations partner with NDMAs to support and facilitate DRR training for SMEs</td>
<td>54. SMEs have adequate knowledge and capacity for DRR, CDM, business and development challenges.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>48. On-line (Moodle) DRR training for SMEs and Govt employees</td>
<td>55. SMEs employ “hi-tech” DRR tools</td>
</tr>
<tr>
<td></td>
<td></td>
<td>49. Joint DRR training workshops for SMEs and Govt employees</td>
<td>56. Comprehensive sets of generic and sector specific DRR Educational, Promotional and Training material produced under special projects available from universal education and training web site (eg CDEMA documentation Centre).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>50. Emergency services conduct regular training and drills for SMEs</td>
<td>57. Direct disaster economic loss in relation to global gross domestic product (GDP) substantially reduced.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51. Periodic DRR Training workshops and information on “Technological farming innovations and practices for DRR”</td>
<td>58. Disaster damage to critical infrastructure and disruption to the economy, among them tourism and agricultural industries, substantially reduced</td>
</tr>
<tr>
<td></td>
<td></td>
<td>52. SMEs develop Plans and SOPs that schedule regular drills</td>
<td>59. Increased DRR collaboration, cooperation and understanding between NDMAs and SMEs.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>53. SMEs and sector associations conduct or facilitate training and regular drills</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>54. Establish and conduct regular monitoring and drills with the Emergency communications network</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>55. Implement DRR ‘data warehousing’ on universal servers with ‘data mining’ tools for accessing DRR Educational, Promotional and Training material including SME sectors.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>56. NDMAs to become self-sustaining Executive Agencies, acquiring expertise and allowing charges for DRR services</td>
<td></td>
</tr>
</tbody>
</table>

- CDEMA
- NDMA
- Appropriate SME Committee
58. Develop on line awareness and information packages targeting SMEs using Broadcast Radio, Web sites, Text messaging, Voicemail, Email, Smart Phone Apps, etc  
59. Provide “On line support to SMEs for development of “Comprehensive Disaster Plan” (Web sites, Smart Phone Apps, etc)  
60. Provide Real-Time Emergency Events Reporting (Broadcast Radio, Web sites, Text messaging, Voicemail, Email, Smart Phone Apps, etc) utilizing “Des Inventar” and other sources  
61. Provide Real time, Early Warning Systems for Hydro Met, Technological, Health, Biological, Chemical, and other hazards  
62. Provide “On line support to SMEs for “Business Continuity and Recovery Planning” using Web sites, Text messaging, Voicemail, Email, Smart Phone Apps, etc  
60. Greater SME DRR awareness and easy access to real-time actionable DRR Information  
61. Timely access to and dissemination of DRR information  
62. SME Early Warning systems for a wide range of hazards (Hydro Met, Technological, Health Biological, Chemicals, and other hazards)  
63. On-line access and awareness of “slow onset” (eg Climate Change) hazards and “disaster emergency events registry”  
64. SMEs integrated in community based Emergency communications systems.  
65. Direct disaster economic loss by SMEs in relation to gross domestic product (GDP) reduced.  
66. Availability and access to multi-hazard early warning systems and disaster risk information and assessments to SMEs substantially increased.  
67. Disaster damage to critical infrastructure and | ▪ CDEMA  
▪ NDMA  
Appropriate SME Committee |
disruption to the economy, among them tourism and agricultural facilities substantially reduced.
7. **Recommendations**

In order to “jump start” the process for successful promotion of a sustainable environment for effectively integrating SMEs into the CDM agenda, it is recommended that:

a. Propose and standardize a common regional and national DRM architecture under which SMEs in the Caribbean should operate in order to maximize efficiencies of scale and support.

b. Designate a czar (leadership) from the Caribbean DRM community to move the SME Disaster Risk Management agenda forward in the interest of national resilience for economic and social development.

c. Expedite and operationalize the 62 prioritized imperatives outlined at Para 6 above.

8. **Conclusions**

In these rapidly changing times characterized by joblessness and stagnant growth partially due to hazards brought about by globalization and unprotected trade stripping away the livelihoods of small-island developing states, exacerbated by the elevated impact of natural disasters from climate change, once again the Caribbean region is called upon to find creative solutions to overcoming these challenges.

With many island states being too small to benefit from economies of scale necessary to successfully operate free market models and with governments as major employers in some cases having to downsize staff for debt management, jobless individuals are increasingly becoming masters of their own destinies and look towards attracting income from larger markets through tourism, agricultural production and other export sectors.

While vulnerabilities to natural hazards in the region vary somewhat between states due to differences in geography, geology, population size, level of development, etc, one commonality is the impact of these hazards on the stability and development of their economies, particularly in two major income sectors of **tourism** and **agriculture**.

SMEs do not yet adequately possess the necessary business planning skills and experience, resources, exposure, knowledge and interest in DRM to adequately secure their businesses from sudden catastrophic natural or man-made events, as business plans and loan approvals for start-ups do not include adequate provisions for DRM training, resources or disaster risk insurance and there is limited legislation or other mandates for acquiring these skills and resources.

SMEs need to build up their adaptive capacities specifically human resource capacities and to develop partnerships and networks with other organizations and government. On the other hand, government also plays a critical role in building SME resiliency by providing a policy environment that would enable SMEs to effectively address their vulnerabilities; ensuring “weather-proofed” infrastructure and communications facilities; and improving coordination work between the public and private sectors
Consequently, Tourism and Agricultural SMEs in particular rely more on government DRM policies, and management of globalized trade for recovery from disasters than on their own business plans and management skills, placing them squarely at the mercy of public institutions, which invariably are inadequately resourced to provide effective DRM support.

A number of recommendations have been proposed in this report which it is hoped will assist in the ongoing transformation process towards increased economic and social resilience to natural hazards in Caribbean states.

9. **References / Documents Reviewed**


9.3 SME data from IFC MSME Country Indicators


9.5 Disaster Risk Reduction Centre, UWI. UNDP.

   [https://www.caribank.org/programmes/sdfu/ctcs](https://www.caribank.org/programmes/sdfu/ctcs)


   [http://www.onecaribbean.org/content/files/FinalRegionalDRMStrategyTourism.pdf](http://www.onecaribbean.org/content/files/FinalRegionalDRMStrategyTourism.pdf)


http://www.fao.org/3/a-i4434e.pdf

http://usir.salford.ac.uk/18262/1/SMEs.pdf


http://www.onecaribbean.org/content/files/NaturalHazardRiskManagementFinaltext.pdf

http://community.eldis.org/.5994ce60/Schipper%2520and%2520Pelling.pdf


http://www.unisdr.org/we/inform/terminology


http://www.unisdr.org/files/1037_hyogoframeworkforactionenglish.pdf


9.25 VCA Tools and Guidelines for Assessing Hazard Risk and Vulnerability


9.27 Guide for Development of National DRM Strategies
file:///C:/Users/Stacey/AppData/Local/Microsoft/Windows/INetCache/IE/YXMLYJWO/guide4developmentNationalDRMStrategies.pdf

9.28 “Risk Disaster Management and Climate Change” - Facebook information board
https://www.facebook.com/RiskDisasterManagement/posts/424801304211952

9.29 Methods of Stakeholder Consultation - WRAP
file:///C:/Users/Stacey/AppData/Local/Microsoft/Windows/INetCache/IE/YXMLYJWO/3c%20Methods%20of%20stakeholder%20engagement.pdf

9.30 Definition - Small and Medium Sized Businesses

9.31 EU “Growth” Website - Entrepreneurship – Small and Medium Sized Enterprises
http://ec.europa.eu/growth/smes/

9.32 G. D. HOLDER National agronomist, FAO/MAF1 Disaster Risk Mitigation Project TCP/BZE/3201 – “Good DRM practices for Belizean small farmers and an approach at inclusion and acceptance, on a pilot basis, to promote Disaster Risk management in the agriculture sector”.


9.37 Ministry Of Agriculture And Fisheries And The Food And Agriculture Organization Of The United Nations August 2011 - Plan Of Action For Disaster Risk Reduction http://www.fao.org/climatechange/29975-0236c2c8f876fc3e77a354a7a4585df01.pdf

9.38 CARIBBEAN ECONOMIC PERFORMANCE REPORT - CARIBBEAN CENTRE FOR MONEY AND FINANCE - Established under the joint auspices of the Central Banks of the Caribbean Community and The University of the West Indies - June 2013 https://www.google.com.jm/#q=the+leading+contributing+sectors+to+the+caribbean+economy


9.40 CHALLENGES FACED BY SMEs - Presented By Lynette P Holder www.onecaribbean.org/content/files/LynettePHolder_CASME_SMEChallenges

10. Annexes

Annex A: Main Findings
Annex B: Analysis of Findings
Annex C: Stakeholders Consulted
Annex D: Travel Itinerary
Annex E – Letter of Introduction from UWI
Annex F – Letters to Respondents
  Appendix 1 - National Organizations
  Appendix 2 - NDOs
  Appendix 3 - Enterprises
Annex G: Data Collection Instrument
  Appendix 1 – Survey Design
  Appendix 2 – Survey Instrument
Annex H – Survey Data
Annex I – Assignment TORs