MODEL NATIONAL HAZARD MITIGATION POLICY FOR THE CARIBBEAN

THE CARIBBEAN DISASTER EMERGENCY RESPONSE AGENCY (CDERA)

and

THE CARIBBEAN DEVELOPMENT BANK (CDB)

MARCH 2003

Preface

This Model National Hazard Mitigation Policy was prepared as the result of a partnership between the Caribbean Disaster Emergency Response Agency (CDERA) through its Caribbean Hazard Mitigation Capacity Building Programme (CHAMP) and the Caribbean Development Bank (CDB) through its Disaster Mitigation Facility for the Caribbean (DMFC). It is designed for use in CDERA Participating States and CDB Borrowing Member Countries (BMCs).

In collaboration with the Organization of American States (OAS) and with support from the Canadian International Development Agency (CIDA), CDERA is seeking, through CHAMP, to enhance regional capacity to reduce vulnerability to the effects of natural hazards. This will be done through the development of national hazard mitigation policies and implementation programmes, the wider use of hazard information in development decisions and the strengthening of safe building practices, building training and certification. CHAMP activities will be carried out in the four pilot states of Belize, British Virgin Islands, Grenada and St. Lucia.

Through its Disaster Mitigation Facility for the Caribbean (DMFC), CDB, with support from the United States Agency for International Development (USAID) is seeking to strengthen regional capacity for disaster mitigation as a means of vulnerability reduction in CDB's BMCs (which include all CDERA member states). To achieve this aim, the DMFC will support the following: provide technical assistance to CDB's BMCs to implement functional disaster mitigation policies and practices; strengthen CDB's capacity to address disaster management issues through the integration disaster mitigation into all of CDB's policies, programmes and projects. DMFC activities will be implemented in all seventeen (17) of CDB's BMCs. The development and implementation of mitigation policies and plans will be conducted by CDB in the six DMFC primary core countries: Belize, Dominica, Grenada, Jamaica, St. Kitts Nevis and St. Lucia.

This Model National Hazard Mitigation Policy has been designed to be adapted at the national level through use of the accompanying 'Preparation of National Hazard Mitigation Policy Guidance Document'. Through CHAMP and the DMFC, CDERA and the CDB propose to partner in the national level adaptation of the model policy in the following three countries: Belize, Grenada, and St. Lucia.

The policy document was prepared by Alleyne Planning Associates in collaboration with Lynette Atwell (Hazard Mitigation Planning Consultant).

Table of Contents

GLOSSARY

(Adapted primarily from 'Living with Risk' (preliminary version) prepared by the ISDR Secretariat, Geneva, July 2002)

CHEMICAL SPILL - Accidental release occurring during the production, transportation or handling of hazardous chemical substances.

CLIMATIC CHANGE - Change observed in the climate on a global, regional or sub-regional scale caused by natural processes and/or human activity.

DISASTER - A serious disruption of the functioning of a community or a society, causing widespread human, material, economic or environmental losses which exceed the ability of the affected community/society to cope using only its own resources. Disasters are often classified according to their cause (natural or manmade).

HAZARD – A potentially damaging physical event, phenomenon and or human activity, which may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation.

HAZARD ANALYSIS/ASSESSMENT – Identification, study and monitoring of any hazard to determinate its potentiality, origin, characteristics and behaviour.

HAZARD MITIGATION – Structural and non-structural measures undertaken to limit the adverse impact of natural hazards, environmental degradation and technological hazards. In climate change terminology, hazard mitigation is synonymous with adaptation to some degree. Climate change adaptation is an adjustment in natural or human systems in response to actual or expected climatic *stimuli* or their effects, which moderates harm or exploits beneficial opportunities.

HAZARD RISK MANAGEMENT - The systematic management of administrative decisions, organization, operational skills and responsibilities to apply policies, strategies and practices for hazard risk reduction.

HAZARD RISK REDUCTION – The development and application of policies, procedures and capacities by the society and communities to lessen the negative impacts of possible natural hazards and related environmental and technological disasters. This includes structural and non-structural measures to avoid (prevention) or to limit (mitigation and preparedness) adverse impact of hazards, as well as the development of coping capabilities.

NATURAL HAZARD – Natural processes or phenomena occurring in the biosphere that may constitute a damaging event.

RISK – The probability of harmful consequences, or expected loss (of lives, people injured, property, livelihoods, economic activity disrupted or environment damaged) resulting from interactions between natural or human induced hazards and vulnerable/capable conditions. Conventionally, risk is expressed by the equation
Risk = Hazards x Vulnerability/Capacity.

STAKEHOLDERS - Person or entity holding grants, concessions, or any other type of value that would be affected by a particular action or policy.

SUSTAINABLE DEVELOPMENT – Development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts: the concept of "needs", in particular the essential needs of the world's poor, to which overriding priority should be given; and the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and the future needs.

TECHNOLOGICAL HAZARDS (MAN-MADE HAZARDS) – Danger originating from technological or industrial accidents, dangerous procedures, infrastructure failures or certain human activities, which may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation.

VULNERABILITY – A set of conditions and processes resulting from physical, social, economical, and environmental factors, which increase the susceptibility of a community to the impact of hazards.

ACRONYMS AND ABBREVIATIONS

CARICOM	Caribbean Community
CDB	Caribbean Development Bank
CDB/BMCs	Caribbean Development Bank Borrowing Member Countries
CDERA	Caribbean Disaster Emergency Response Agency
CDERA/PS	Caribbean Disaster Emergency Response Agency/Participating States
CDM	Comprehensive Disaster Management
CHAMP	Caribbean Hazard Mitigation Capacity Building Programme
CPACC	Caribbean Planning for Adaptation to Global Climate Change
DM	Disaster Management
DMFC	Disaster Mitigation Facility for the Caribbean
IPCC	Inter-governmental Panel for Climate Change
IR	Intermediate Result
MACC	Mainstreaming Adaptation to Climate Change
NGO	Non-Governmental Organisation
NHRM	Natural Hazard Risk Management
OECS	Organisation of Eastern Caribbean States
PEO	Public Education and Outreach
OECS-ESDU	Organisation of Eastern Caribbean States - Environment and Sustainable Development Unit
SIDS	Small Island Developing States
SIDS/POA	Small Island Developing States/Programme of Action
UNFCCC	United Nations Framework Convention on Climate Change
UNISDR	United Nations International Strategy for Disaster Reduction

1.0 CARIBBEAN VULNERABILITY TO HAZARDS

Overview

1.01 The Caribbean region is comprised of a number of small islands and low-lying coastal states, where the major urban areas, the associated infrastructure and key economic sectors are located in areas that are highly vulnerable to the impacts of both natural and technological hazards. The past two decades saw increasing pressures being placed on the economic, social and environmental fabric of these states, as economic conditions required that these economies become more competitive and develop their limited resource base. They also experienced (and continue to experience) a number of repeated losses from hurricanes and their associated effects, flooding, landslides, volcanic eruptions and earthquakes. Global concerns such as the vulnerability of the region to climate change also mean that a number of states are likely to be affected by increasing climate variability, (hurricanes, floods, droughts) and damage to water resources, ecosystems, human settlements, agricultural systems, coastal resources, tourism infrastructure and human health.

1.02 Apart from natural hazards, the region is also susceptible to a number of technological hazards. These include large-scale fires from industrial sites, oil and chemical spills, aircraft accidents, accidents involving the transportation of toxic and hazardous waste material on land and sea, large-scale marine and on-land transportation accidents. Vulnerability to some of these hazards occurs by virtue of being located along a trade corridor. With most of the development in the region located in coastal areas these types of events can have adverse impacts on people, the environment and major economic sectors, including the tourism industry, which is a major economic sector in most states. The region also has to interpret vulnerability in its widest sense, to include not only the well-known threats of natural and technological hazards but also the implications of globalisation, the vulnerability of its trade corridors, and non-traditional threats to security.

1.03 One such non-traditional threat is climate change. Evidence that this phenomenon is making the region more vulnerable to natural disasters is mounting steadily as gradual changes in world climate manifest themselves in extreme weather events. It is being increasingly recognized that greater and more rapid climate changes will pose greater challenges to adaptation and greater risks of damages. The effects of these events are often exacerbated by human factors such as poverty, the location of settlements in hazardous areas, environmental degradation, poorly constructed infrastructure and housing. Also, there are low levels of preparation for emergencies and significant, long-term but less abrupt changes in physical and biological systems. Given the small size of most Caribbean States, the impact of a major event can affect the entire country and community. In many instances, damage suffered can equal or exceed the country's Gross Domestic Product (GDP).

1.04 With increasing frequency, countries in the region face situations in which scarce resources earmarked for development projects have to be diverted to relief and reconstruction following disasters, resulting in impeded economic growth. Disasters also directly impact on the foreign exchange earning capacity of states in the region, at a time when extra resources are needed to finance imports of food, energy, and inputs for the agricultural and manufacturing sectors.

1.05 Current economic conditions require that the states in the region further develop their narrow resource base, while remaining cost competitive. All of the above are significant threats to the *sustainable* economic development of the region. To meet the challenge of this new competitive environment, the region must do all that it can to encourage investment in competitive enterprises, and to maintain the social gains made in the past. This will include steps to reduce risks to existing and proposed investments and the social and physical infrastructure on which they depend.

1.06 With growing recognition of the economic and social costs incurred as a result of repeated damage from natural hazard events, of the threat of technological hazards, as well as the increasing awareness that global concerns such as climate change will impact on all countries in the region, mitigation issues have recently been moving onto the policy agenda of a number of Caribbean countries. This awareness is neither sufficiently heightened nor is it articulated in development decisions. Yes, there has been increasing recognition of the role that hazard mitigation can play in the achievement of sustainable development. However, it is now necessary to articulate policies which reflect the need for hazard mitigation to factor in the development of a rational framework, within which the region's overall development objectives can be pursued. This model policy represents a commitment on the part of participating governments to national vulnerability reduction.

Hazard Mitigation

1.07 Hazard mitigation is defined as structural and non-structural measures undertaken to limit the adverse impact of natural hazards, environmental degradation and technological hazards. This definition distinguishes between actions that have a long-term impact and those that are associated with preparedness for, immediate response to, and short-term recovery from a specific event. With respect to climate change, this definition of hazard mitigation may be equated to climate change adaptation. Adaptation has the potential to reduce adverse effects of climate change and can produce immediate ancillary benefits, but it will not prevent all damages.

1.08 Hazard mitigation measures can take the form of structural interventions, such as the building of sea defences, or non-structural measures, such as the preparation of physical development plans with appropriate land use zoning and the exploration of alternative fresh water resource options to counter a gradual depletion of existing sources. These measures should seek to address both sudden catastrophic events, due to a range of natural processes and human actions, as well as those events that may be slow and

cumulative over time but equally deleterious in effect including those caused by climate change.

1.09 Implementation of hazard mitigation is inherently a multi-sectoral activity. As mitigating the impacts of hazards means making choices with respect to development, it requires considerable inter-agency co-ordination, the involvement of the private sector and the cooperation and support of civil society. In the implementation of mitigation activities, agencies and citizens will need to act in concert to identify and utilize integrated mechanisms to reduce potential damage to the built environment, make appropriate land use choices, protect the natural environment, implement building standards, adopt and enforce building codes, retrofit, repair and reconstruct existing development.

1.10 In carrying out hazard mitigation activities the intent is to focus on actions that produce sustained benefits over time. One of the principal benefits of mitigation is that current moneys spent on mitigation activities will significantly reduce human suffering, infrastructural damage and the demand for large sums of money in the future when extreme natural or man-made events occur. Expenditure on mitigation activities can reduce the economic impacts on the economy which occur when there are hazard events.

1.11 Effective formulation and implementation of hazard mitigation activities relies to a large extent on coordination and collaboration among agencies. In a broader risk reduction framework, it is essential that linkages between hazard mitigation and other policies, particularly those related to disaster and environmental management, are understood and integrated into any hazard mitigation policy that is to be developed. This is particularly relevant since the countries of the region are signatories to several agreements, and there have been a number of recent initiatives in the development of regional positions on issues related to hazards and risk management. Some of the key issues to be considered in the preparation of a national hazard mitigation policy emerge in the context of specific regional and national initiatives (Appendix 1).

Rationale for and Purpose of the Policy

1.12 A national policy on hazard mitigation is necessary to provide a framework for the integration of hazard mitigation into all policies, programmes, plans and ongoing activities at national and community levels. It sets out the broad goals and guiding principles for hazard risk reduction, and thus informs the development of national hazard mitigation plans. This is necessary, as in the absence of well-articulated policies there is the real risk that scarce resources may not be utilized as effectively as they should be in the implementation of programmes, projects and ongoing activities.

1.13 In keeping with the regional position articulated in the Comprehensive Disaster Management (CDM) Strategy and Results Framework, this policy addresses one aspect of CDM, that is mitigation, and is not meant to deal with preparedness and response activities. Other aspects of disaster management must also be implemented alongside this

policy, as effective preparedness and response programs must be in place for any mitigation program to be effective.

2.0 POLICY CONTEXT

2.01 The principles underlying the National Hazard Mitigation policy are not at all new to the Caribbean. Within the region, there exist a number of national and regional mandates whose framework supports the objectives of vulnerability reduction. National hazard mitigation policy should be closely integrated with these existing mandates. At the national level these include Development and Strategic Plans, Disaster Management Legislation and plans and Climate Change Policies. At the regional level mandates include the Strategy and Results Framework for Comprehensive Disaster Management in the Caribbean (2001), St. George's Declaration of Principles for Environmental Sustainability in the Organization of Eastern Caribbean States(2001), CPACC Policy Framework for Integrated Adaptation Planning and Management (2001); CDERA Model Disaster Management Legislation (1996); The Programme of Action for the Sustainable Development of Small Island Developing States (SIDS/POA) (1994) and The Convention for the Protection and Development of the Marine Environment in the Wider Caribbean Region (Cartegena Convention, Adopted 1983, In Force 1986). The abovementioned mandates are further elaborated at Appendix 1.

2.02 While there is a growing recognition of the need for hazard risk reduction and the implementation of mitigation measures in the region, often the linkages between existing hazard vulnerability and their sources in physical, social, economical and environmental factors are not clear or obvious to those affected. In addition, development agencies are understaffed, operate under outdated legislation, and in some instances have had very little exposure to the need for or the requirements of risk reduction. These constraints indicate that a determined effort will have to be made to implement a hazard mitigation policy.

Challenges to the Implementation of Hazard Mitigation

2.03 The essential challenge is that hazard risk reduction must become an everyday requirement at every level of the society, which means that all stakeholders including the general public and government must be aware of the need for it, and make hazard risk reduction a part of their daily routines.

2.04 In reviewing the regional policies and studies related to hazard mitigation, a number of issues emerge, which could impede the sustainability of a national hazard mitigation policy. These include limited technical and financial resources; weak institutional and legislative frameworks for risk reduction; the low priority given to reducing vulnerability in advance of disasters; the limited acceptance of responsibility for existing vulnerabilities; and the limited involvement of communities and civil society in the development and implementation of policies, plans and programmes. Awareness of

each of these challenges must inform the development of hazard risk management policies, plans and actions.

2.05 Implementation of hazard risk management frameworks and risk reduction programmes require adequate funding, technical capacity and information to support decision-making. Currently, the financing of risk reduction activities in general and of sectoral budgets in particular, is insufficient; the technical capacity for designing, implementing, monitoring and reviewing national risk reduction programmes is limited; and the information needed to prioritize and implement mitigation activities is often lacking, incomplete or inaccessible.

2.06 Appropriate institutional and legislative frameworks and administrative and regulatory systems for hazard risk management do not currently exist. At the institutional level, institutional links and administrative systems must be developed to support the multi-sectoral activities required for hazard risk reduction. Legislative frameworks will likely need to be updated to provide mandates for hazard mitigation and weak regulatory and enforcement mechanisms will need to be strengthened. To make these changes, the existing low priority given to disaster management at the political level and the low level of awareness, understanding and acceptance of the need for hazard risk reduction will need to be raised.

2.07 Currently there is little responsibility or accountability for the large contributions that individual and communal decisions and actions make towards existing and future vulnerability to natural and technological hazards. Meaningful stakeholder participation must be built into the development and implementation of hazard mitigation policies, programs and actions. Such participation will build understanding of the implications of development decisions for hazard vulnerability and will build support for the implementation of risk reduction programmes.

3.0 GUIDING PRINCIPLES OF THE NATIONAL HAZARD MITIGATION POLICY

3.01 Given past experience and lessons learned from past events, the development of the policy was guided by four principles. These are:

- The value of vulnerability reduction.
- An integrated approach to hazard risk management and development planning.
- The need for effective community mobilization.
- The need for protection of the environment

The Value of Vulnerability Reduction

3.02 Vulnerability represents the conditions and processes which increase the susceptibility of a community to the impact of hazards. In the context of climate change, vulnerability is described as the degree to which a system is susceptible to, or unable to

cope with, adverse effects of climate change, including climate variability and extremes. Therefore, in defining any policy for hazard mitigation it is necessary to ensure that vulnerability is reduced, since hazard events cannot be eliminated.

The sources of vulnerability in the region are varied and complex and are related to:

- Population growth, in states with limited land for development.
- Inappropriate land use.
- Damage to the environment, in many instances caused by continued population pressures that have encouraged large numbers of people to occupy marginal lands such as flood plains and steep slopes.
- High rates of poverty which are often concentrated among vulnerable groups such as women and children.

3.03 Vulnerability can be reduced by the avoidance of hazard prone areas and the proper design, construction and maintenance of buildings and infrastructure. This however will require the strengthening of both institutional as well as technical capacities.

3.04 While disasters are by definition devastating events, lessons learnt and incorporated into post disaster recovery can often present opportunities for future vulnerability reduction. The destruction of unsafe infrastructure and buildings can provide opportunities for rebuilding with better standards, or for relocation if a site was particularly vulnerable. Damage to buildings may highlight structural weaknesses, which could be rectified and may serve to improve planning and building regulations.

3.05 The reduction of vulnerability can minimize damage to development from hazards. Relatively small investments in mitigation measures can reduce the recurrent losses caused by disasters. This is particularly relevant in small states where there is often only one of each critical facility (e.g. one general hospital). The reduction in costs of disasters to the society through concerted efforts at vulnerability reduction can in turn lead to a more stable social and economic environment. This stability can encourage development and give people some sense of control over their own well-being.

3.06 In order to be successful in the reduction of vulnerability, it is necessary for hazard risk reduction measures to be built into existing and ongoing development programmes at all stages of the development process. Awareness of these issues should be second nature to all stakeholders in the development process. This will need to be complemented by the necessary authority, regulations, guidelines and checklists if vulnerability reduction is to be integrated into development planning.

An Integrated Approach to Hazard Risk Management and Development Planning

3.07 An integrated approach to hazard risk management is essential in order to reduce costs and any overlaps in the legal and administration frameworks governing hazard

mitigation actions. In the Caribbean region, natural and technological hazards compete for the slender resources available to individual countries with a number of other pressing socio-economic concerns such as poverty alleviation, high unemployment, improvement of housing, improvement of education and health care facilities. Under these circumstances, it is important to recognise that there are existing institutional frameworks within which hazard mitigation activities must fit. Of particular significance is the existing national development planning process, which provides a dynamic framework for vulnerability reduction and for the implementation of hazard mitigation actions at the various levels of strategic planning.

3.08 Mitigation plans and frameworks must also recognize and integrate successful mitigation measures that are currently in place. For example, it is important that hazard mitigation measures address existing climate change adaptation policies and public health policies. The projected impacts of climate change will not necessarily manifest themselves as sudden catastrophic events in the same way as some other natural and technological hazards. Consequently, hazard risk reduction must be able to adapt over time to anticipated climate change. In the context of the uncertainties associated with the projection of future climate change, at scales appropriate to small islands, there is a long lead time for assessing and implementing adaptation (50 – 100 years). This situation underscores the need for intersectoral linkages to promote hazard risk reduction.

3.09 An integrated approach to hazard risk management will need new methods for dealing with cross-cutting development issues. One of the main areas that will have to be addressed is the reduction of conflicts in policy development. This will require sectors to work together and to understand the need to harmonize their respective plans and policies in keeping with national objectives and priorities. Communities and stakeholders must also be included as part of this process and governments must provide the necessary resources, coordination and support to encourage participation in the decision-making process.

The Need for Effective Community Mobilization

3.10 To ensure that everyone contributes to the achievement of sustainable development it is necessary to establish effective mechanisms for the involvement of all communities in hazard risk reduction. During hazard events, impacts are rarely evenly spread across the affected country or area, with individual communities suffering greater effects than the country as a whole. At times, selected communities are inaccessible for days after a hazard event. This underscores the need to build community resilience to the impacts of hazards. Consequently, capacity must be built at the community level to understand the range of hazards that affects each community and to reduce their vulnerability to those hazards. This allows community groups to play a role in protecting themselves from the impacts of hazard and at the same time have some control over their own destinies. High priority must also be given to increasing the awareness of all levels of the population of the options and mechanisms available for hazard mitigation and vulnerability reduction.

3.11 In addition to implementing local-level hazard mitigation activities, communities must be actively involved in national-level mitigation plans and programmes. Community groups represent valuable constituents for support and cooperation in achieving success in the implementation of risk reduction activities. Involving the community through the building of partnerships is the most effective means of implementing measures to reduce the impacts of hazards. Partnerships will therefore have to be built among the public sector, the private sector and the various communities.

The Need for Protection of the Environment

3.12 Our ability to alter our environment and tailor it to our needs has increased, and with it, our sensitivity to the cost of environmental degradation. When hazard risk reduction options are considered, care must be taken to avoid harming natural resources or processes as much as possible. Hazard mitigation activities that degrade the environment are not viable long-term solutions to hazard risk. Fortunately, pursuing hazard risk reduction frequently also presents opportunities to conserve resources and to enhance the quality of the environment.

3.13 Experience has taught us, generally, which geographic areas are subject to natural hazards. However, a clear understanding of the type and extent of risk and of the potential impacts of hazards on communities is critical to making decisions about which hazard mitigation measures should be undertaken. Conducting risk assessments of prevalent hazards can provide this understanding. Such risk assessments must take place in a manner that is meaningful to those who are required to act.

4.0 POLICY STATEMENT

4.01 The hazard mitigation policy draws on a number of initiatives which have been taking place in the region, and has as its major focus the achievement of sustainability. A sustainable development focus implies a commitment to a broader and more long-term development process. This will require that emphasis be placed on developing communities, building institutions and capabilities to reduce vulnerability, an expanded information base, up to date scientific information, local knowledge and expertise as well as the involvement of all levels of the society. This policy statement comprises a vision statement, policy goals and objectives.

Vision Statement

4.02 Reduced vulnerability of our society to natural and technological hazards, through multi-sectoral and integrated hazard risk reduction practices.

Policy Goals

4.03 The main goals of the policy are:

i) To contribute to sustainable development through the reduction of the vulnerability of society to natural and man-made hazards.
ii) To have hazard risk reduction incorporated as a part of everyday activity by the entire society.

Policy Objectives

4.04 This policy will achieve the following objectives:

- To develop an integrated framework to address hazard risk reduction at all levels.
- To develop the appropriate legislative and regulatory framework in support of hazard risk reduction.
- To strengthen the capacities of institutions and the human resource base involved in hazard risk reduction.
- To promote collaboration and coordination among national, regional and international agencies to harmonize activities towards achieving common objectives for hazard risk reduction.
- To empower communities to manage hazard risk.
- To protect and enhance the environment as a component of hazard risk management.

5.0 POLICY STRATEGY

5.01 The main pillar upon which the policy is built is the belief that sustainable development cannot be achieved without mainstreaming hazard risk reduction, which must become a part of normal everyday activity for institutions as well as communities. The strategy emerging from this belief is the incorporation of hazard risk reduction in development planning, project formulation and implementation of both government and private sector projects. It will also require that the ordinary citizen be made aware of and pursue hazard risk reduction in the community in which he/she lives.

6.0 PRIORITY AREAS FOR ACTION

6.01 A number of priority areas for action have been identified. These priority areas have informed the interventions necessary to implement the policy. It will be necessary to provide financial, human and technical resources for these programmes and projects. Some component of the funds required will have to be budgeted and made available at

the national level. Given the intersectoral nature of the hazard mitigation activities proposed, some of the costs of projects could be shared by agencies.

The priority areas identified are:

i) Integration of hazard risk reduction into national policy frameworks.
ii) Development, implementation and enforcement of appropriate legislation and regulations to support hazard risk reduction.
iii) Creation of an integrated development framework, which emphasizes hazard risk reduction and environmental protection.
iv) Capacity building at community and national levels.
v) Development and dissemination of information for decision-making.
vi) Sensitization, Public Education and Outreach at all levels.
vii) Determination of the requirements for implementation of hazard risk reduction measures, as identified in this policy.

7.0 STRATEGIC INTERVENTIONS: the specific tasks involved in the achievement of these priorities are detailed below:

7.01 Integration of hazard risk reduction into National Policy Frameworks

- Identify inherent links between hazard risk reduction and existing policies in related fields.
- Ensure coherence between these policies and sub-regional, regional and international commitments.
- Develop instruments at the sectoral and national levels to facilitate the adoption of hazard risk management by all stakeholders including government, private sector and communities.
- Incorporate hazard risk reduction into sectoral policies.

7.02 Development, implementation and enforcement of appropriate legislation and regulations to support hazard risk reduction activities

- Review, update and coordinate all existing legal instruments that have implications for hazard risk management.
- Develop regulations and standards to implement legislation.
- Develop incentive-based regulatory frameworks.
- Identify and build endogenous capacity and administrative mechanisms to implement laws, regulations and standards.
- Develop and implement strategic land use planning
- Adopt and enforce building codes.

7.03 Creation of an integrated development framework which emphasizes hazard risk reduction and environmental protection

- Conduct hazard vulnerability and risk assessment studies and apply them to integrated development planning and hazard risk reduction measures.

- Integrate environmental policies into the national development planning processes.
- Strengthen cultural and traditional systems that improve the resilience of local communities to disaster events.
- Develop and strengthen national and sectoral disaster management plans, with emphasis on inter-sectoral collaboration.
- Promote poverty reduction through hazard risk reduction and environmental protection.

7.04 Capacity Building at community and national levels

- Identify and review the capacity of all stakeholders for hazard risk reduction.
- Strengthen and empower national disaster institutions, other government agencies, the private sector and civil society to routinely implement hazard risk reduction measures.
- Develop technical capability for undertaking hazard risk assessments, as needed, for executing risk reduction measures.
- Mobilize communities and stakeholders to reduce their vulnerability.

7.05 Development and Dissemination of Information for Decision Making

- Develop inventory of existing hazard information and research. Develop repositories/lead agencies for information.
- Make data/information easily accessible to all users.
- Identify baseline data for hazard risk assessment and reduction (where data exist; where investment is necessary).
- Research, monitoring and assessment should be a priority and an ongoing activity (these should be viewed as a process, not a project).

7.06 Sensitisation, Public Education and Outreach (PEO)

- Develop and implement public awareness programmes on policies and laws related to hazard risk reduction.
- Sensitize key decision makers including the political directorate about the requirements and benefits of hazard risk reduction.
- Develop specialized training programmes for technical and professional levels in hazard assessment and risk reduction.
- Develop community hazard risk reduction training programmes, some of which should be designed for special interest groups.
- Develop curricula at all levels in hazard risk reduction.
- Develop tailored programmes in hazard risk reduction, targeting specific audiences.
- Develop specific sensitisation and education interventions for each sector.

- Develop built-in assessment instruments to assess and evaluate the impact of PEO programmes.
- Sensitize with respect to roles and responsibilities in hazard risk management.

7.07 Determination of the requirements for implementation of hazard risk reduction measures as identified in this policy

- Conduct a needs assessment for policy implementation.
- Prepare a detailed, practical mitigation plan involving all stakeholders.
- Establish effective organizational structures for plan implementation with appropriate resource allocation.
- Prepare a responsibility matrix.
- Include monitoring and evaluation instruments for the policy implementation process.

APPENDIX 1: Regional and National Mandates

Regional and national mandates to be considered in the preparation and adaptation of the model national hazard mitigation policy include the following:

1.0 REGIONAL MANDATES

A Strategy and Results Framework for Comprehensive Disaster Management (CDM) in the Caribbean (2001).
St George's Declaration of Principles for Environmental Sustainability in the Organisation of Eastern Caribbean States (OECS) (2001).
CPACC Policy Framework for Integrated Adaptation Planning and Management (2001).
CDERA Model Disaster Management Legislation (1996).
The Programme of Action for the Sustainable Development of Small Island Developing States (SIDS/POA) (1994).
The Convention for the Protection and Development of the Marine Environment in the Wider Caribbean Region (Cartegena Convention) Adopted 1983, In Force (1986).

1.01 Strategy and Results Framework for Comprehensive Disaster Management in the Caribbean 2001

The Comprehensive Disaster Management (CDM) Strategy provides a framework and guide for the organization of all types of disaster management in the Caribbean. The objectives of the CDM Strategy are to:

- Elevate CDM on the Caribbean political agenda.
- Provide a framework for disaster management in the region.
- Strengthen CDERA to effectively implement the strategy at the regional level.
- Integrate CDM into the development and planning process
- Build support for CDM at the national level of CDERA member countries.

The goal of the CDM Strategy and Results Framework is "Sustainable Development in the Caribbean" and its objective is that "Comprehensive Disaster Management" be integrated into the development processes of CDERA member countries. The strategy outlines a multi-sectoral, multi-disciplinary approach to integrated management of natural and man-made hazards, through all phases of the disaster management cycle, namely, prevention, mitigation, preparedness, response, recovery and restoration. It engages all stakeholders in disaster management, including the public and private sector, civil society, urban and rural communities and the general population. The strategic objective of the CDM Strategy and Results Framework is to integrate CDM into the development processes of CDERA member countries.

Five Intermediate Results (IRs) are identified, as checkpoints towards achieving the strategic objective. These are:

IR 1 Stronger regional and national institutions promote CDM.
IR 2 Research, education and training support CDM.
IR 3 Major regional institutions and donors incorporate CDM in their own programs and promote CDM to their national members/clients
IR 4 Preparedness, response and mitigation capability is enhanced and integrated
IR 5 Hazard information is incorporated into development planning and decision-making.

The strategy represents a major regional position on CDM and provides a framework for disaster management and for the enhancement and integration of mitigation capability in the region. Intermediate Result 4 provides for the enhancement and integration of mitigation capability in the region, while Intermediate result 5 identifies the need for incorporation of hazard information in development planning and decision-making. These IRs provide a sound basis for the development of a hazard mitigation policy.

1.02 St George's Declaration of Principles for Environmental Sustainability in the Organisation of Eastern Caribbean States (OECS) 2001

The St. George's Declaration of Principles for Environmental Sustainability in the OECS is a statement of environmental principles to which member states of the OECS have agreed to be bound. Principles 8 and 9 are particularly relevant to Comprehensive Disaster Management.

Principle 8 of the Declaration requires OECS states to address the causes and impacts of climate change. It specifically encourages the establishment of strategies to adequately adapt and respond to the causes and impacts of climate change. OECS states are also urged to collaborate at the regional and international level in implementing the United Nations Framework Convention on Climate Change (UNFCCC).

Principle 9 aims to prevent and manage the causes and impacts of disasters. It requires the establishment of integrated frameworks to prevent, prepare for, respond to, recover from and mitigate the causes and impacts at the community, national and regional levels. OECS states are encouraged to exchange information with each other on their experiences with the causes and impacts of disasters and the lessons learned thereby. The Principles in the Declaration are generic in nature and provide a supporting framework for comprehensive disaster policies.

1.03 CPACC Policy Framework for Integrated Adaptation Planning and Management 2001

Caribbean Planning for Adaptation to Global Climate Change (CPACC) project supported the development of a policy framework for integrated planning and management to enable a cost-effective regional response to climate change. Specifically, CPACC assisted the twelve participating Caribbean States with the formulation of: a) a national climate change adaptation policy and implementation plan; and b) a regional climate change adaptation policy and implementation strategy.

All twelve countries submitted national communications to the United Nations Frameworks Convention on Climate Change (UNFCCC). Some of these countries have already had their policy documents approved by their respective governments, and have begun to implement climate change adaptation policy at the national level. These policies emerged as a result of extensive stakeholder consultations at both the regional and national levels. The consultation workshops involved a wide cross section of interested persons including representation from the insurance banking, fisheries, physical planning, tourism, disaster management, health, and water resources sectorsNGOs and civil society. The consultation process was used to promote focussed discussion on national climate change issues. Specific national policies were then generated using a template produced as a methodological guide to aid countries in identifying their key climate change issues.

Both climate change adaptation and hazard mitigation polices recognise that extreme events may occur over a very short time scale, over the medium term as well as over a very long time period. However, in the case of projected climate change it is anticipated that there will be beneficial and adverse effects on both environmental and socio-economic systems, but the larger the changes and the rate of change in climate, the more the adverse effects predominate. Indeed, based on the models used for climate change projections in the small island states, the impacts are anticipated to be overwhelmingly adverse. Yet it is important not to lose sight of the projection that there may be some benefits from climate change. For example, some agricultural crops will benefit from increased carbon fertilisation. This means that effective climate change adaptation policies must be predicated on the philosophy that the strategies must be designed both to reduce adverse effects as well as to enhance beneficial impacts. The importance of this approach has been emphasised in the preparation of the climate change issues papers.

It is essential that the policy strategies developed for climate change and hazard mitigation and management be integrated with each other as well as with other sectoral initiatives such as sustainable development planning, integrated coastal management and health care planning.

1.04 Caribbean Disaster Emergency Response Agency (CDERA) Model Disaster Management Legislation 1994

The model legislation is intended to address four specific policy objectives, which are the efficient organization of (a) mitigation, (b) preparedness, (c) response, and (d) recovery in respect of emergencies and disasters. In this regard, it creates a legal/procedural framework, which may be adopted and adapted by the CDERA Participating States in order to develop and strengthen disaster management.

Its provisions cover all of the four policy objectives and seek to establish an enabling framework, which will support the policy objectives. The model disaster management legislation fills many of the existing gaps and omissions in existing legislation, particularly as relates to hazard risk reduction and hazard mitigation. It will also reduce the overlaps within the legal framework governing disaster management.

The model disaster management legislation provides a platform at the national level for the adoption and implementation of the national hazard mitigation policy. The enactment of the disaster management law will serve to facilitate the development and strengthening of the administrative and policy-making processes for disaster management. This may be achieved under the disaster legislation through the establishment of the office of Director of Disaster Preparedness and Response. The functions of the Director are critical to disaster management and will, among other things, include the coordination of government's policy in disaster management including the development of a national hazard mitigation policy. Fundamentally, with the inclusion of mitigation in the disaster legislation, disaster agencies will now have responsibility for the coordinating of mitigation activities.

1.05 The Programme of Action for The Sustainable Development of Small Island Developing States (SIDS/POA) 1996

The SIDS/POA adopted at the SIDS conference in Barbados in 1994 outlines one of the earliest regional positions on the incorporation of hazard mitigation in the development process. It sets out a number of national and regional policy measures as guidelines to Caribbean SIDS.. Although mitigation is included, emphasis is placed on preparedness and response.

The SIDS/POA provides a basic framework which can inform general policy development. It highlights the key issues of institutional strengthening, integration of hazard mitigation in the planning process, information sharing, the establishment of a disaster fund, strengthening of regional institutions responsible for risk reduction and the strengthening of cultural and traditional systems to aid in the building of resilience in local communities.

At the regional level it is proposed that regional institutions should be strengthened to support national efforts in comprehensive disaster management;, that mechanisms for sharing experience, information and resources should be established or strengthened;, and that there be facilitation of a regional committee and a funding mechanism.

The SIDS/POA supports a comprehensive approach to disaster management and most of the proposed actions are still valid. They provide broad guidelines, which can inform policy development in the region.

1.06 The Convention for the Protection and Development of the Marine Environment in the Wider Caribbean Region (Cartegena Convention) 1983

The Convention for the Protection and Development of Marine Environment of the Wider Caribbean Region (commonly known as the Cartagena Convention) was adopted on 24 March 1983 at Cartagena de Indias, Colombia and entered into force on 11 October 1986. It governs marine pollution issues in the Wider Caribbean Region (WCR) and has been ratified by 20 countries.

Under this Convention the Contracting Parties have the responsibility to take all appropriate measures to reduce and control pollution and to ensure sound environmental management of the WCR. In particular the Contracting Parties are required to take appropriate measures aimed at preventing, reducing and controlling pollution from ships by dumping, from sea-bed activities, from the air, and from land-based sources and activities. In addition, the signatories to the Convention are required to take appropriate measures to protect and preserve rare or fragile ecosystems, as well as the habitat of depleted, threatened or endangered species. They are required also to develop technical and other guidelines for the planning and environmental impact assessments of important development projects in order to prevent or reduce harmful impacts on the area of application.

The Convention provides a general framework that allows for the adoption of additional protocols and bilateral and multilateral agreements aimed at addressing specific issues at the regional or sub- regional level. Since its entry into force three protocols to the Cartagena Convention have been adopted, namely:

- The Oil Spills Protocol (11 October 1986).
- The Specially Protected Areas and Wildlife (SPAW) Protocol (18 June 2000).
- The Protocol concerning Pollution from Land-based Sources and Activities (not yet in force).

The Cartagena Convention is a comprehensive umbrella agreement on the protection and development of the Marine Environment of the wider Caribbean Region and along with subsequent protocols facilitates cooperation in combating oil spills in the region. Regional initiatives such as this convention can be used to support hazard mitigation policies and programmes which relate to the marine environment.

2.0 NATIONAL MANDATES

National Development/Strategic Plans
National Hazard Mitigation Policies and Plans.
National Disaster Management Legislation and Plans
National Climate Change Policies

2.01 National Development/Strategic Plans

Many states in the region have prepared or are in the process of preparing national development plans or strategic plans. Very few of these plans specifically address hazard risk reduction, while some do so in addressing physical planning or the housing sector. In the BVI the issue of vulnerability reduction was addressed at the national level and this overarching policy was able to guide the preparation of the National Mitigation Plan for that territory. In Trinidad and Tobago a Social and Economic Policy Framework was prepared in October 2002. This document addresses hazard and risk under the physical planning section of the framework. When national development plans articulate overarching policy with respect to risk reduction, support for preparation of detailed mitigation plans and project implementation is likely to be provided.

2.02 National Hazard Mitigation Policies and Plans

National hazard mitigation plans have been prepared by four countries in the region: St. Kitts and Nevis, Antigua and Barbuda, the British Virgin Islands and St Lucia. Draft hazard mitigation policies are under preparation by the Governments of Grenada and Jamaica. The plans for St Kitts and Nevis, Antigua and Barbuda and the British Virgin Islands were prepared with the assistance of intersectoral groups and were informed by risk assessment studies.

In the case of the British Virgin Islands, an Integrated Development Strategy, which addressed the issue of vulnerability of the territory, had already been prepared. This facilitated the preparation of the country's mitigation plan as the issues had already been addressed and decided upon, and the plan could be developed based on the country position stated in the Integrated Development Plan The experiences of those countries that have already prepared national hazard mitigation plans are well placed to inform others now embarking on the policy formulation process.

2.02 National Disaster Management Legislation and Plans

Several Caribbean countries have disaster plans but generally, they are very limited in scope and emphasise preparedness and response procedures. Where there are sections on mitigation they are inadequate. However, some countries have adopted new legislation based on the CDERA model legislation, and in many instances where this has occurred there has been greater interagency coordination.

2.04 National Climate Change Policies

National climate change adaptation policies have been prepared by ten of the twelve countries participating in the CPACC project, as described in Section 1.03 above. St. Lucia and Dominica have both had their climate change policies approved by Cabinet (the highest policy decision-making level for a government). Belize has finalised its policy, and this has been submitted to Cabinet. Guyana's climate change adaptation policy has been finalised but is under the review of a cabinet sub-committee. Other countries with draft climate change adaptation policies are Barbados, Antigua and Barbuda, Jamaica, St. Vincent and the Grenadines, St. Kitts and Nevis, and Trinidad and Tobago. Draft policies have not yet been completed by the Bahamas and Grenada. It is important that these policy documents be critically reviewed prior to integration with other sectoral policies, as they may point to critical data gaps that need to be filled, in order to develop effective hazard risk reduction strategies. The existence of national climate change adaptation policies (in draft or approved) for several Caribbean territories should provide a significant platform for ensuring that climate change issues and matters relating to policy implementation are effectively addressed in a national hazard mitigation policy.