NATURAL HAZARD RISK MANAGEMENT IN THE CARIBBEAN
THE WAY FORWARD

Report on the Meeting of Stakeholders

Caribbean Development Bank
Barbados


Prepared by
Eleanor Jones and Lynette Atwell

For the
Caribbean Development Bank
TABLE OF CONTENTS

EXECUTIVE SUMMARY ........................................................................................................... 3
  Summary Recommendations from the Participants .......................................................... 5
  Summary Priority Areas for Action ............................................................................... 6
I. THE MEETING ..................................................................................................................... 7
II. OPENING CEREMONY .................................................................................................... 8
SESSION 1: COMPREHENSIVE DISASTER MANAGEMENT .............................................. 9
  1.1 Comprehensive Disaster Management (CDM) Strategy .......................................... 9
  1.2 CDM Matrix Of Current And Proposed Disaster Management Activities In The
      Caribbean 2001-2005 ................................................................................................. 12
SESSION 2: NATURAL HAZARD RISK MANAGEMENT IN THE
  CARIBBEAN; CURRENT PROGRAMMES AND ACTIVITIES ........................................... 14
  2.1 The Disaster Mitigation Facility for the Caribbean (DMFC) .................................... 14
  2.2 The Caribbean Hazard Mitigation Capacity Building Program (CHAMP) .......... 14
  2.3 The Caribbean Disaster Management Project (CADM) .......................................... 15
  2.4 Catastrophe Risk Management and Insurance Reform Project ............................... 15
  2.5 Caribbean Risk Management And Adaptation: A UNDP Bureau For Crisis
      Prevention And Recovery Initiative ........................................................................... 16
SESSION 3. MATRIX OF CURRENT AND PROPOSED NHRM ACTIVITIES ........ 18
  2001-2006 AND IMPLEMENTATION PROGRAMME ......................................................... 18
  3.1 Activities ..................................................................................................................... 18
  3.2 The World Bank Programme for Action .................................................................. 20
  3.3 Priority Areas For Action 2003 - 2006 ................................................................... 22
  3.4 Stakeholder Presentation Panel .................................................................................. 22
PRESENTATIONS ................................................................................................................... 23
  3.4.1 The Donor Community ......................................................................................... 23
  3.4.2 The Caribbean Tourism Organization (CTO) ..................................................... 23
  3.4.3 University Of The West Indies (UWI) ................................................................. 23
  3.4.4 National Disaster Coordinators ........................................................................... 24
  3.4.5 Physical Planners ................................................................................................. 25
  3.4.6 The Council Of Caribbean Engineering Organizations ..................................... 25
  3.4.7 The Insurance Association Of The Caribbean .................................................... 25
  3.4.8 The Caribbean Policy Development Centre ....................................................... 26
Working Group Reports ....................................................................................................... 27
  Group 1 - Risk Identification (Regional) ........................................................................ 27
  Group 2 – Risk Identification – National And Local ................................................... 28
  Group 3 - Risk Reduction: Regional .............................................................................. 29
  Group 4 - Risk Reduction - National And Local .......................................................... 30
  Group 5 – Risk Transfer ................................................................................................. 32
SESSION 4. SUSTAINABILITY OF NHRM IN THE CARIBBEAN .................. 33
SUMMARY PARTICIPANT RECOMMENDATIONS ............................................................. 34
EXECUTIVE SUMMARY

The Caribbean Development Bank convened a meeting of stakeholders in Natural Hazard Risk Management on September 19 and 20, 2002 at the Bank’s headquarters in Wildey, Barbados. Forty-six participants attending represented multi-lateral and bilateral development agencies, as well as international, regional and national private, public and non-governmental entities.

The purpose of the meeting was to discuss progress in natural hazard risk management in the Caribbean and to develop a collaborative agenda for Comprehensive Disaster Management (CDM) and Natural Hazard Risk Management (NHRM) in the region.

This report presents a summary of the proceedings of that meeting, highlighting the salient aspects of the discussions and recommendations of the four sessions held over the two-day period.

The meeting received a report on the CDM strategy; reviewed the status of disaster management activities in the region; examined activities in Natural Hazard Risk Management in relation to the CDM strategy; identified gaps in the risk management activity matrix prepared by CDERA; identified priority areas for action; and identified opportunities and mechanisms for collaborative implementation.

**The First Session** included two presentations: Comprehensive Disaster Management in the Caribbean: Overview, Promotion, Adoption and Implementation Status, and a CDM Matrix of Current and Proposed Disaster Management Activities in the Caribbean, 2001- 2005: Overview. It was noted that the strategy has received wide acceptance in the region, having been endorsed...
by the Board of Directors of CDERA and the CDERA Council. National CDM consultations have also been held in several territories, and it was expected that the needs identified through the consultations would help to inform implementation planning for the results-based framework at the national level. The apparent overlap in projects as indicated in the Matrix suggested a need for more collaborative and integrated planning. Sustainability of the matrix was agreed as a major project in itself and that a more user-friendly approach to maintenance would assist the process.

Current programmes and activities in Natural Hazard Risk Management were described in **Session Two**: The Disaster Mitigation Facility for the Caribbean (DMFC), The Caribbean Hazard Mitigation Capacity Building Project (CHAMP), Caribbean Disaster Management Project (CADM), The Catastrophe Risk Management and Insurance Reform Project, and Caribbean Risk Management and Adaptation: A UNDP Bureau for Crisis Prevention and Recovery Initiative. It was noted that there were many opportunities for linkages and collaboration especially in relation to the sequencing of projects and the development and sharing of common methodologies.

**The Third Session** involved presentation of a matrix of NHRM activities, a World Bank Programme for Action, Priority Areas for Action, stakeholder perspectives from eight interest groups, and small working group discussion on strategies for implementation in each of the three areas of risk management.

**Activities in the matrix** were categorized according to risk identification, risk reduction and risk transfer, and were linked to the IRs of the CDM strategy. Initiatives were identified in each of the three risk management areas, but most projects occurred in the area of risk identification. For each activity the matrix described output, collaborators, beneficiaries and timing. Discussion centred on improvements to the matrix as well as programme/project needs. The importance of staying engaged in dialogue at all levels and especially at the levels of the political directorate and financial institutions was emphasized.

**The World Bank programme** noted the existence of considerable data in the region, but data was very diffuse, segmented and not shared. The World Bank draft action programme suggested four priority areas: identify and provide support for regional centres of expertise; mainstream hazard risk management; expand the use of risk transfer measures; and promote risk management by donors and regional lending institutions.
**Priorities for Action** were summarized from the preceding presentations and discussions, and participants explored the imperatives for the region in the context of national realities of experience, vulnerabilities, governance and resources.

Eight panelists made presentations from the *stakeholder perspective* on activities problems and requirements for development in Natural Hazard Risk Management (NHRM) in their respective fields. Following the panel discussions five *working groups* were established to develop a strategy for implementation and a plan of action for priority areas. Risk identification, reduction, and transfer were the three broad themes, and in the case of risk identification and risk reduction, groups were divided to consider national, local and regional perspectives.

**Session Four** addressed a *Strategy for Sustainability*. Some underlying considerations included the need to focus on *Sustainable Prosperity* as enunciated at the World Summit on Sustainable Development 2002 (WSSD): answering the question “what is the region going to do about its vulnerability?” approaches to garner and maintain engagement in a subject that has proved to be a “hard sell.” using self-interest as a rallying point – *What’s in it For Me (WIFM)*? and following the WSSD Plan of Implementation.

**Summary Recommendations from the Participants**

- Convene an annual meeting to receive and share progress reports from the respective stakeholders who need to be held accountable.
- Country-specific assessments should inform resource allocation and prioritization.
- Maintain the Matrix to facilitate a continuing inventory of resources and activities.
- Multi-stakeholder consultations should be institutionalized as part of the planning process.
- Sensitisation should be targeted.
- Obtain Government commitment for resource persons to continue projects started by donor funding.
- Increase donor support for strategic projects.
- Position National Disaster Offices with appropriate resources.
- Target Core Ministries for advocacy – Finance, Planning, Environment and Works.
- Promote Sector focus as is appropriate to the respective country.
- Develop mechanism for promoting use of agreed standards.
- Insurance by itself is not a mitigation strategy. Insurance needs to be linked to standards in order to be considered a mitigation strategy.
Summary Priority Areas for Action

- Standardise methodologies of hazard mapping and vulnerability assessments, utilising outputs for risk assessment
- Build capacity for change at national, regional and local levels
- Establish centers of expertise
- Develop mechanisms for integration of risk management information into development planning
I. THE MEETING

On September 19 and 20, 2002 the Caribbean Development Bank (CDB), the United Nations Development Programme (UNDP) and the Caribbean Disaster Emergency Response Agency (CDERA) co-hosted a meeting of stakeholders in Natural Hazard Risk Management (NHRM) in the Caribbean at the CDB Conference Centre, in Wildey, Barbados.

The meeting was convened as a sequel to the 16th meeting of the Caribbean Group for Cooperation in Economic Development (CGCED) held at the World Bank, June 10-13, 2002, where Natural Hazard Risk Management was discussed as one of the agenda items. It was agreed subsequently that the Challenge of Risk Management needed further elaboration at the regional level, and therefore a stakeholder meeting should be held at an early date.

Forty-six participants were drawn from multi-lateral and bilateral development agencies, as well as from international, regional and national bodies. (Appendix 1 lists the meeting participants).

Meeting Actions

• Received a report on the CDM strategy
• Reviewed the status of disaster management activities in the region
• Examined activities in Natural Hazard Risk Management in relation to the CDM strategy
• Identified gaps in the risk management activity matrix prepared by CDERA
• Identified priority areas for action
• Identified opportunities and mechanisms for collaborative implementation
II. THE PROGRAMME

The programme included the opening formalities and protocol and issues were dealt with in four major sessions, which included presentations, working group analyses, and plenary discussion on the major themes identified above.

II. OPENING CEREMONY

The opening ceremony set the context for the meeting in that the respective roles and expectations of the UNDP, CDERA and CDB were outlined in the context of poverty reduction and sustainable development within the Caribbean. “Building the capacity for change”, and institutionalizing approaches for management of effective disaster reduction were the overarching themes.

Opening Charge

- **Mainstream approaches which can reduce risks faced by vulnerable communities and sectors**
- **Collaborative effort will optimize resources**
- **Meet the challenge of turning the CDM strategy into reality**
- **Incorporate risk reduction into integrated decision-making**
- **Build legislative and administrative systems for hazard risk management in each territory and regionally**
SESSION 1: COMPREHENSIVE DISASTER MANAGEMENT

Session 1 set the overall framework for the discussion on Comprehensive Disaster Management through two presentations:

A. Comprehensive Disaster Management in the Caribbean: Overview, Promotion, Adoption and Implementation Status.
B. CDM Matrix of Current and Proposed Disaster Management Activities in the Caribbean, 2001-2005: Overview

1.1 Comprehensive Disaster Management (CDM) Strategy

1.1.1 The rationale for a Comprehensive Disaster Management (CDM) strategy for the Caribbean was outlined with emphasis placed on the need for systemic change so as to effectively translate “meeting discussions” and “signed conventions” into meaningful action.

1.1.2 CDM project objectives included:
- Elevation of CDM on the Caribbean political agenda
- Building an effective framework for disaster management in the region,
- Strengthening CDERA to effectively implement the strategy at the regional level
- Infusion of CDM into the development and planning process
- Building support for CDM at the national level of CDERA member countries.

1.1.3 Development of the strategy involved a highly participatory process of national and regional consultations, and the involvement of technical and donor groups. An expanded concept of vulnerability was important for Caribbean consideration as the well-known threats of natural disasters are now augmented by the implications of globalisation, the vulnerability of trade corridors, and threats to security, all of which require a view of “the big picture”.

1.1.4 The Results-based framework of the CDM strategy was described and the Goal, Strategic Objective and Intermediate Results (IRs) presented. The goal was outlined as Sustainable Development in the Caribbean and the Strategic Objective, Integrating CDM into the Development Planning Process.
The strategy has received wide acceptance in the region. It was endorsed by the Board of Directors of CDERA and the CDERA Council, and was presented to the Caribbean Community (CARICOM) Council on Trade and Economic Development (COTED). National CDM consultations have been held in several territories, and the needs identified at the national level will help to inform implementation planning for the results-based Framework. It was suggested that thorough analysis of the social and economic impact of natural events would help to focus attention on the need for loss reduction; and work with the CDB’s Disaster Mitigation Facility (DMFC) and other funding agencies would facilitate program implementation.

**Intermediate Results**

| IR 1.1 | Stronger regional and national institutions promote CDM |
| IR 1.2 | Research, education and training support CDM |
| IR 1.3 | Major regional institutions and donors incorporate CDM in their own programs and promote CDM to their national members/clients |
| IR 1.4 | Preparedness, response and mitigation capability is enhanced and integrated |
| IR 1.5 | Hazard information is incorporated into development planning and decision-making |

**The CDM presentation is included as Appendix II.**
DISCUSSION HIGHLIGHTS

More meaningful action toward change could be fostered through:

- Inclusion of hazard vulnerability and risk exposure in evaluation of return on investment
- Measuring impact on communities, and determining related social issues
- Demonstrating the link between disasters and poverty
- Expanding engineering training and application of best practices
- Integrating full economic loss in damage/loss assessment,
- Using the data to advocate for policy level support.
- Treating all events as learning laboratories and using findings as action/teaching opportunities.
- Including mitigation in the response phase
- Introducing diagnostic surveys into the response process so as to take full advantage of lessons learnt.

A Natural Hazard Impact Assessment (NHIA) was suggested as a tool for integrating natural hazard considerations into the project cycle. The Natural Hazard Impact Assessments was seen as an extension of the Environmental Impact Assessment, which is currently used, as an analytical tool, and the CDB proposes to develop guidelines for use of the NHIA.
1.2 CDM Matrix Of Current And Proposed Disaster Management Activities In The Caribbean 2001-2005.

The matrix, developed by the CDERA Coordinating Unit, is a first attempt to collate information on proposed and on-going disaster management programmes and projects in the region. The data is structured in accordance with the CDM Framework and represents an inventory toward a gap analysis. The information presented reflects inputs received from CDERA, CDB/DFMC, CIDA, DIPECHO, OAS, OECS, PAHO, UNDP, USAID, and in that regard the matrix is considered a work in progress.

1.2.1 There are five main sections/programme areas linked to the five IRs of the CDM strategy, as well as a section on Public Education initiatives. Information is presented by subject areas and includes project description and objectives, implementors, activities, outputs, funding agency, and project costs.

To reiterate the five main programme areas:

Section 1                          IR 1         Institutional Strengthening  
Section II                         IR 2         Research and Training  
Section III                       IR 3         CDM Incorporation and promotion  
Section IV                       IR 4         Preparedness, Response and Mitigation Measures  
Section V                        IR 5         Using hazard information  
Section VI.                     Public Education and Information  

1.2.2 The Matrix provides a comprehensive overview of CDM interventions and demonstrates the large number of initiatives albeit with a strong bias toward preparedness and response. Minimal activity is evident in the areas of Research and Training (IR2) Incorporation by Donors, Sector organisations, and Insurance and Financial Institutions (IR3) and Hazard Information and Planning (IR5). These categories fall within the areas of Risk Identification, Risk Reduction and Risk Transfer – the elements of risk management that need to be strengthened.

1.2.3 The Matrix is a dynamic tool and therefore has the facility to incorporate new initiatives as they come on stream, and to track implementation of CDM activities. The matrix can be used to identify opportunities for linkages and integration.
1.2.4 The number of interventions indicated begged the question— “if so much activity why was there repeated damage and loss?”

The presentation is attached as Appendix III and the Matrix as Appendix IV.

DISCUSSION HIGHLIGHTS

The matrix has several gaps but it is expected that further contributions will be made to inform its development, thus making the tool as comprehensive as possible.

The Caribbean Conference of Churches (CCC) has moved from a passive response mode to the proactive prevention mode with notable achievements through pilot projects in Anguilla and Antigua and Barbuda, as well as in other communities. Assistance is needed to further disaster mitigation work, and the church communities are prepared to establish, or strengthen and maintain collaboration. The apparent overlap in projects indicates the need for more integrated and collaborative project planning.

Suggestions for sustainability of the Matrix include:

- Continuous review and updating of the Matrix.
- Redesign of the database so as to make it more user friendly, interactive and therefore more useful to stakeholders.
- Matrix maintenance was a project in itself and funding support for such a project should be sought.
- Individual agencies will be given the responsibility to input and update the matrix on a CDERA web site.
SESSION 2: NATURAL HAZARD RISK MANAGEMENT IN THE CARIBBEAN; CURRENT PROGRAMMES AND ACTIVITIES.

2.1 The Disaster Mitigation Facility for the Caribbean (DMFC)

The Disaster Mitigation Facility for the Caribbean (DMFC) is a grant funded initiative of USAID and the CDB intended to strengthen regional capacity for natural hazard mitigation. This will be achieved through institutional strengthening of the CDB in natural hazard management (IR1); and adoption and implementation of natural hazard mitigation policies and practices in CDB’s Borrowing Member countries (IR2).

Institutional strengthening will involve incorporation of natural hazard mitigation into the project cycle and leveraging of funds for support of natural hazard mitigation. The CDB’s 1998 Natural Hazard Strategy and Operational Guidelines will be reviewed to incorporate vulnerability assessment as part of project preparation, natural hazard impact assessment during project appraisal, and hazard mitigation in post-disaster intervention.

Mitigation policies and practices will include institutional strengthening mechanisms in BMCs as well as promulgation of legislation, development of tools and methodologies, and sensitization and training. The DMFC presentation is included as Appendix V.

2.2 The Caribbean Hazard Mitigation Capacity Building Program (CHAMP)

The Caribbean Hazard Mitigation Capacity Building Program (CHAMP) was described as a three-year project funded by CIDA, implemented by CDERA and executed by the OAS. The objective of the project is to reduce the vulnerability of the population, economy and built environment within the Caribbean region to the impacts of natural hazards. This objective is to be achieved through an integrated programme with the following components:

- Development of comprehensive mitigation planning frameworks and
- Development and implementation of safer building, training and certificate programmes
- Model mitigation policy
- Hazard Mitigation Planning
• Models and guidance documents for hazard mitigation policy development and implementation
• Safer buildings through training of builders and artisans active in the informal sector
• Initiation of gender mainstreaming activities in the region
• Strengthened capacity at CDERA for guiding comprehensive vulnerability reduction policy development and implementation

The presentation on CHAMP is included as Appendix VI.

2.3 The Caribbean Disaster Management Project (CADM)
The Caribbean Disaster Management Project (CADM) is a three-year project (2002-2005) funded by the Government of Japan and implemented by CDERA. The major components include hazard mapping and community development planning and the three countries selected for pilot activities are Barbados, St Vincent, and Trinidad and Tobago. The project is expected to build capacity to deal with flood hazard mapping and to develop a cadre of regional experts in Flood Plain Mapping and Community Disaster Management planning. The project will build disaster information “warehouse” in CDERA, and will employ a collaborative team approach (national/CDERA/JICA) for each assignment. See Appendix VII

2.4 Catastrophe Risk Management and Insurance Reform Project
Catastrophe Risk Management and Insurance Reform Project is an insurance reform initiative, which seeks to establish a mechanism for addressing issues and mitigating risks identified from the historical impact of catastrophes in the region. The project was developed against a background of a number of inadequacies related to the insurance sector, and is expected to serve as a catalyst for future interventions.

The objective of this project that is being implemented by the World Bank and the CDB is to create a sub-regional catastrophe insurance fund for protecting government assets against catastrophic perils. The fund is to achieve, through risk pooling at the sub-regional level, a significant reduction in price volatility and potential costs of reinsurance, and stability in available capacity to cover catastrophe hazards. (Appendix VII)
2.5 **Caribbean Risk Management And Adaptation: A UNDP Bureau For Crisis Prevention And Recovery Initiative**

The Bureau, a new initiative created by the UNDP in 2001, is committed to Sustainable Disaster risk Reduction and Recovery through strengthened national and regional capacity. The Bureau is already working in the Caribbean in Haiti and Montserrat and brings a social perspective on risk management and cross-country, cross-cultural disaster reduction network to facilitate synergies and shared experiences. Integrated risk management through the convergence of climate change adaptation and disaster risk reduction is a major focus.

The Bureau has a geo-referenced inventory of occurrence and loss over the past 30 years. Under this programme, it is planned to hold a number of expert group meetings and consultations in order to harness regional expertise.

### Insurance Sector Inadequacies

- Only 20% of public sector assets and infrastructure are typically insured and usually on a facultative price basis
- An estimated 30% of the population, generally lower income segments, have no insurance coverage
- A large contingent of fiscal liabilities is left unmanaged in the region
- Diseconomies of scale, lack of actuarial skills, high dependency on external markets
- Caribbean countries placed within a wider geographic area including higher risk areas.
DISCUSSION HIGHLIGHTS

• Similarities in the objectives of the various projects resulted in project overlap, which can be alleviated through effective use of the Matrix.

• In view of the proposed changes and activities CDERA’S role would need to change. The question was raised as to whether CDERA had the capacity to cope with an expanded role.

• CDERA indicated that the organization would be working through its partners to effect the changes necessary for effective disaster management.

• Discussion on the mechanisms for Natural Hazard Impact Assessment (NHIA) evoked the commitment from the CDB to make NHIA a unique contribution for which the Bank would be accountable.

• There are many opportunities for linkages and collaboration especially as related to sequencing of projects and development and sharing of common methodologies.

• The Commonwealth Disaster Management Agency Project is an opportunity for commonwealth states to take the scheme on board noting that low-income communities and government assets had the biggest exposure in the region.

• Climate change risk would be incorporated in the CDM strategy and building standards were needed to reflect climate change risk.

• The MACC project would be the successor to the CPACC initiative that ended in 2001.
SESSION 3.  MATRIX OF CURRENT AND PROPOSED NHRM ACTIVITIES
2001-2006 AND IMPLEMENTATION PROGRAMME.

3.1 Activities

Activities in the Matrix are divided into Risk Identification, Risk Reduction and Risk Transfer, and are linked to the IRs of the CDM strategy. For each activity the matrix describes output, collaborators, beneficiaries and timing.

Initiatives have been identified in each of the three risk management areas, but most projects occurred in the area of risk identification. Several opportunities for cross-fertilization and collaboration were highlighted, and needs were suggested for consideration (Appendix VIII).

Technical interventions should be balanced with the realities of administrative and governance issues and champions/leaders should be sought as advocates. Interventions should be based on country-specific realities, and should use the national CDM Framework as a guide.

The gap analysis of NHRM activities requires a benchmark against which activities could be assessed and it is suggested that the Caribbean programmes should aim for specific accomplishments/targets in each of the areas of identification, reduction and transfer. Access to information which has been generated is a continuing challenge, but one that must be overcome.
MATRIX DISCUSSION HIGHLIGHTS

- Expand the matrix to include strategy and policymaking.
- Carry out sector specific studies in NHRM that would place emphasis on key sectors such as Tourism, Health, and Education etc.
- Carry out economic impact studies, placing greater emphasis on total loss and social dislocation.
- Mainstream NHRM as it is not an activity which is exclusive to National Disaster Offices
- Incorporate Natural Hazard Impact Assessments (NHIA) into EIAs and the Project Cycle for Development
- Involve the financial sector, both government and business, in NHRM
- Capture lessons learned from incidents, highlight small successes, and use them to advocate for policy support for NHRM
- Programmatic issues need to be discussed and considered for inclusion
- Elaborate an advocacy strategy for NHRM
- Utilize regional agencies to expand the outreach of the NHRM initiatives
- CDERA should seek to place CDM/NHRM on the agenda of the annual COTED forum on sustainable development,
- Establish linkages with CARIFORUM which addresses the wider Caribbean Region
- NHRM is not a new idea, but there is a new chemistry at this time as there is more information and greater interest in NHRM.
- It is important to stay engaged in dialogue at all levels and especially at the levels of political directorate and financial institutions
3.2 The World Bank Programme for Action

The World Bank Programme for Action was described as the result of a process of research and consultation regarding work already implemented in the region on risk reduction and risk transfer measures. Best practices and strengths were identified, and one of the significant findings of the exercise was that existing information was very segmented and not shared. (Appendix IX)

A Draft Action Programme was prepared indicating four priority areas for action and identifying agencies that would play lead roles in these areas.

<table>
<thead>
<tr>
<th>Priority Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify and provide support for Regional Centres of expertise</td>
</tr>
<tr>
<td>Mainstream Hazard Risk Management</td>
</tr>
<tr>
<td>Expand the use of Risk Transfer Measures</td>
</tr>
<tr>
<td>Donors and Regional Lending Institutions to promote Risk Management</td>
</tr>
<tr>
<td>Risk reduction measures have to be taken,</td>
</tr>
<tr>
<td>Determine the level of risk that can be assumed</td>
</tr>
<tr>
<td>Determine where resources are to be used and for what purpose.</td>
</tr>
</tbody>
</table>
DISCUSSION HIGHLIGHTS

- Integrate programmes at different levels i.e. the region, national governments and the donor community
- There is a capacity shortfall in the region. Establish a technical support unit to facilitate common areas of action.
- Facilitate country-to-country exchange of professional expertise.
- Establish links with poverty eradication programmes, and the health and education sectors
- Multi-stakeholder involvement is germane to “buy in”
- Sustain advocacy at the highest level as well as with senior managers, and operational personnel who sometimes resist change.
- Build capacity for change at all levels
- The Business sector has a key role to play,
3.3 **Priority Areas For Action 2003 - 2006**

Based on deliberations from the foregoing sessions the following themes were highlighted as the priority areas for action:

- **Build Capacity at Regional, National and Local Levels**
- **Standardize Methodologies for Risk Identification**
- **Target sensitization and awareness building programmes**
- **Utilize outputs of vulnerability assessment for risk evaluation**
- **Develop mechanisms for the integration of risk management information into**
  - **Development planning**
- **Sequence activities**
- **Mobilise Resources**
- **Develop and enforce Building Codes and Standards**
- **Implement Financial and Economic costing of damage and loss**
- **Establish links with Health**

**Wide ranging discussion further sharpened the focus to include the following four priority areas:**

- Standardise methodologies of hazard mapping and vulnerability assessments, utilising outputs for risk assessment
- Build capacity for change at national, regional and local levels
- Establish centers of expertise
- Develop mechanisms for integration of risk management information into development planning

3.4 **Stakeholder Presentation Panel**

The stakeholder perspective was presented from eight groups represented by the following panelists:

- **The Donor Community**
  - Mr Bartholomew Nyarko-Mensah
- **The University of the West Indies**
  - Mr. Raymond Charles
- **The Planners Association**
  - Ms Lynette Atwell
- **The Caribbean Tourism Organisation**
  - Ms Mercedes Silva
- **National Disaster Coordinators**
  - Ms Dawn French
- **The Council of Caribbean Engineering Organizations**
  - Mr. Tony Gibbs
PRESENTATIONS

3.4.1 The Donor Community

The Donor community accepted the need to expand focus from preparedness and response to a comprehensive approach to disaster management. Coordination of activities would serve to strengthen impact, and an interactive matrix would assist the process. Building strong scientific database to inform actions was reiterated, as was the need to build capacity for change.

3.4.2 The Caribbean Tourism Organization (CTO)

The CTO is currently in the process of drafting a Strategic Plan with thirteen core strategies, four of which have already been identified, viz. the natural environment, safety and health, community development and natural and environmental disasters. This strategic plan is based upon a document prepared by the CTO, which identifies areas for action. CTO supported the need to translate damage assessments to economic losses and highlighted work done on the manual for hotels to mitigate the impacts of disasters.

It will be important to include CDM in the plan that is being prepared, and to examine available data for determination of the impacts of disasters on tourism.

The CTO now has a mandate to form a strategic alliance with CDERA, and it was proposed that the CTO improve communication with other Disaster Agencies in the Region.

3.4.3 University Of The West Indies (UWI)

The Department of Civil Engineering has identified a number of deficiencies in available capacity to provide safe and reliable coastal infrastructure and as a result has developed a number of short- and long-term approaches to deal with the shortcomings. Some of the short-term activities in which the UWI has been engaged include:

- Professional Development training workshops in Disaster Management 1995-1999
- Review and assistance in the development and delivery of a short course in Multi Hazard Building Design on behalf of the OAS in 2000
• Professional Development training in Coastal Zone Engineering and Management, executed in 2001, and one proposed for 2003
• Development of a comprehensive database with information on tropical storm wind, wave and surge for the Caribbean, based on the TAOS system, now hosted on the Caribbean Hazard Data Server in the Faculty of Engineering
• Formation of a regional coastal zone management network. (Ongoing)

The long term activities are largely preventative and focus on hazard impact assessment, and risk and vulnerability reduction in design procedures for lifeline facilities, and for structures. Some of the initiatives include:

**Existing**

- The inclusion of Risk and Vulnerability in the structural design procedures in all structural engineering courses, environmental engineering courses and geotechnical engineering courses
- Incorporating the need for EIAs and Hazard Assessment in the planning and design process
- Establishment of an undergraduate course in Natural Hazards Management
- Establishment of an undergraduate course in Coastal Engineering
- Establishment of a post graduate course in Natural Hazards Management

**Planned**

- Development of an undergraduate course in Design of Lifeline Systems to be delivered in 2003
- Development of an Advanced Diploma in Natural Hazards Management to be delivered in 2003
- Development of an advanced Diploma in Coastal Zone Engineering and Management to be implemented in 2003
- Development of an M.Sc in Coastal Zone Engineering and Management to be implemented in 2004
- Development of a Coastal Studies Unit for the Caribbean region, operating on an electronic network, and physically centred at the Department of Civil Engineering UWI.

### 3.4.4 National Disaster Coordinators
Comprehensive Disaster Management is the strategy required to achieve risk mitigation in the region. It is therefore important that comprehensive disaster management be taken to every layer of society. However, the challenge, is to present the programme in such a way that it can be readily understood by the lay person and by all the relevant stakeholders.

Local and traditional approaches should be valued and integrated into all systems of communication and planning.

3.4.5 **Physical Planners**

If Planning is to be effective it must be an integrated process and therefore must take into account a wide range of information. NHRM can serve to strengthen the planning process. This is especially important, as there is little support for planning in the region. If planning is to effectively use the information that NHRM can provide, then there will be the need for institutional strengthening and legislative reform. Institutional reform is necessary at this time as there are few planners and more particularly few experienced planners in the region.

In terms of making information on NHRM accessible to planners the Caribbean Planners Network is a web site that is available for posting of information.

3.4.6 **The Council Of Caribbean Engineering Organizations**

The problem in the Caribbean is that emphasis has always been on response activity and not on the other areas of disaster management. Vulnerability reduction must be a consideration at the design stage of any project and a multi hazard approach to engineering design is necessary. More effective and predictable performance of structures is needed, and therefore more rigid procedures should be implemented. The French system of independent reviews is recommended as a model that can be used.

The Construction Industry is not sufficiently aware of the design/engineering requirements to avoid the impacts of disasters, and therefore contractors need to be more exposed to the requirements for avoidance of risk.

3.4.7 **The Insurance Association Of The Caribbean**

The insurance industry operates out of head offices that are not located in the region and are governed by policies, which are developed external to the region. Caribbean insurance companies
are forced to purchase reinsurance and many companies operate with insufficient capital. The industry recognizes its responsibility and many companies are attempting to deal with risk on a more scientific basis as the question of vulnerability is of increasing concern.

The CDB/World Bank Insurance Sector proposal as outlined previously was endorsed and some other issues which impact on insurance were commented upon. The need for the following was identified:

- Regional land use policies
- The harmonization of catastrophe fund reserves
- Education in retrofitting of buildings and structures
- The education of all levels of contractors
- The enactment of legislation for building standards
- Compliance with building codes/standards

3.4.8 The Caribbean Policy Development Centre

The multi-stakeholder approach is critical for change management and is useful for the development of scientific models that can be used with local knowledge for programme development.

Participation in governance will facilitate adoption of required practices, and governments must be induced to participate in the NHRM process. Systematic awareness building should be carried out. Long-term as well as multi-sectoral and multi-dimensional programmes should be developed.

The gap between perception and reality should be narrowed through sensitization and it must be noted that there is a fundamental difference between disaster mitigation for development and disaster mitigation for poverty alleviation.

**DISCUSSION HIGHLIGHTS**

The discussion on these comments identified conflict in developmental needs, impacts of development standards, and the need for a cadre of planners. Conflicts were particularly acute in the coastal zone and the question was raised as to how to get the buy in of the political directorate particularly where the development is likely to be at risk.
**Working Group Reports**

Five working groups were established to consider a plan of action and strategy for implementation of Priority areas for Action identified in Session 3. (Section 3.3 above) Appendices 15 and 16 list the Working Groups and Guidelines.

Risk Identification, Reduction, and Transfer were the three broad themes and in the case of Identification and Reduction, groups were divided into national, local and regional.

For the respective area under consideration participants were asked to use the priority areas identified in the previous sessions to:

- Identify key activities
- Rank the activities according to their relative importance
- Recommend lead agencies
- Recommend strategies for implementation

### Group 1 · Risk Identification (Regional)

**Key Activities**
- Data collection
- Methodologies used in existing projects
- Human Resource database
- Sensitization

**Lead Agencies Recommended**
- Information and Data: CDERA, UWI, CARDIN
- Advocacy CARICOM, CARIFORUM, ACS

**Strategies For Implementation**
- Use of CADM and DMFC methodologies
- Develop methodology for sensitization
- Use of Strategic Briefs
- Enact legislation for effective use of codes
- Use of diagnostic surveys for risk sensitization
- Advocacy for incorporation of Risk Management into development planning at the highest political and technical levels

**Group 2 – Risk Identification – National And Local**

**Key Activities Identified**

**National**
- Data collection, mapping and natural hazard assessment
- Vulnerability and Risk Assessments
- Integration in development planning and decision-making
- Capacity building/institutional strengthening

**Local**
- Training in hazard assessment and Interpretation
- Provision of equipment to local Planning Authorities and Disaster Offices

**Lead Agencies Recommended**

**National**

Natural Hazard Assessment/Data Collection/Mapping
- National Disaster Offices with assistance from Water Resources, Geological Departments etc

**Local**
- The Planning Authority, Community Groups, Local Disaster Coordinators

**Vulnerability And Risk Assessment**

**National**
- Economic and Physical Planning with assistance from the NDOS

**Integration into Development Planning**
- National, Physical and Economic Planning

**Capacity Building**
- NDOS, Physical Planning

**Strategies For Implementation**

**National**
- Form an interagency group comprised of NDOS and other agencies including Physical Planning
• Develop and maintain an up to date GIS data base with infrastructure, facilities and population appropriate for local and national levels
• Use regional best practices
• Keep abreast of Global Climate Change and its impact at the National Level
• Prioritize assessment for lifelines, infrastructure and Vulnerable communities
• Involve communities and sectors
• Use regionally accepted best practice methods
• Use of hazard and vulnerability assessments in all development plans and land use plans
• Sensitize key groups to the availability of hazard and risk information e.g. community groups, sectors
• Formulate policy and legislation to ensure use of hazard information
• Develop a cadre of trained personnel
• Allocate adequate funds in the national budget
• Enact the Comprehensive Disaster Management Act giving appropriate mandates to NDO’S and Physical Planning Departments

Local
• Training in local hazard assessments and interpretation
• Provide equipment to local planning authority and disaster offices
• This group proposed some themes for sensitization:
  • Importance of Comprehensive approach (CDM)
  • Need for Community Input and Opportunities for Community action
  • Benefits of investing in Prevention
  • Direct and Indirect impacts of Disasters
  • Keeping public and Communities informed of changes and developments in hazard management
• Social factors contributing to hazard impacts

Group 3 · Risk Reduction: Regional

Key Activities Identified
• Risk Reduction
• Hazard Mapping for the region
• Ensuring compliance with:
  Building codes and standards
  · Land Use
Lead Agencies

Hazard mapping: CIMA/SRU, CARICOM/CDB/CCEO/MS

Strategies For Implementation

Risk Reduction
- Regional Hazard Mapping
- Effective Enforcement of Building Codes and standards including Land Use Criteria
- Develop and strengthen Technical Capabilities
- Mobilize Technical and Financial Resources to retrofit existing facilities
- Facilitate the availability and dissemination of information critical to risk reduction such as incremental cost of hazard resistant construction standards
- Hazard mapping of the region using standardized methodologies.

Suggested sequencing for hazard mapping
(i) Urban areas
(ii) Coastal areas

Group 4 · Risk Reduction · National And Local

Key Activities Identified
- Land use planning
- Community participation
- Data collection
- Education and training
- Financial resources
- Technical resources

Lead Agencies Identified

None

Strategies For Implementation

Land Use Planning
- Review land use policy in each country to identify minimum requirements
- Ensure political support at national and local levels
- Establish a multi-stakeholder planning board
- Ensure that legal provisions are made
- Provide the Planning Board with mechanisms for monitoring irregularities

Community Participation
- Identify leaders and interest groups in the community/individuals, organizations /groups
• Carry out public awareness/information programmers for all levels. Information should be current and measures taken to have it shared
• Promote best practices
• Establish close working relationships with the Media, NGO’S, Service Clubs and Churches.

Data Collection
No Recommendation

Education And Training
• Use formal and informal systems
  • Incorporate in School curriculum
• Identify most effective medium for transfer of message
• Make effective use of existing entities: Neighbourhood Watch, PTA’s, Service and Sport Clubs
• Establish training programmes for dissemination of information (TFI)
• Allocate resources effectively

Financial Resources
• Financial Mapping of National Community
• Identify sources of Finance
• Gross Estimate/Full Costing
• Determine Trend Analyses through plotting of actual expenditure over time
• Rationalization of existing funds
• Establish counterpart financial measures
• Provide a line budget for mobilization of finance
• Establish Levy or use the Consolidated Fund

Technical Resources
• Country Needs Assessment
• Make effective and efficient the capacity for rebuilding in the reconstruction phase
  • Identify development mechanisms
• Ensure that measures are in place for tertiary institutions to produce professionals in areas of national priority
• Build technical resource Data Base
  - Skills
  - Material/Equipment
• Build Capacity of existing personnel
• Create greater capacity at Community and Country Level

**Group 5 – Risk Transfer**

**Key Activities Identified**

- Identify and quantify risks
- Integrate and standardize information and methodologies
- Identify residual risk

**Lead Agencies Identified**

CDB, World Bank, Insurance Association of the Caribbean, CAIC, CTO/CHO, CAIB, Media

**Strategies For Implementation**

- Approve and implement a catastrophe and risk management insurance project.
- Prepare and disseminate information on United Insurance and NRFD experience in St. Lucia
- Revamp and disseminate the CTO manual to all stakeholders
SESSION 4. SUSTAINABILITY OF NHRM IN THE CARIBBEAN

Concern with sustainability of the initiatives toward Natural Hazard Risk Management was addressed through presentation of a suggested *Strategy For Sustainability*. (Appendix XVII)

Some underlying considerations included:

- The need to focus on Sustainable Prosperity as enunciated at the World Summit on Sustainable Development 2002 (WSSD)
- Answering the question “what is the region going to do about its vulnerability?”
- Approaches to garner and maintain engagement in a subject that has proved to be a “hard sell.”
- Using self-interest as a rallying point – *WIFM?*
- Follow the WSSD Plan of Implementation.

The WSSD plan would incorporate the multi-hazard approach as articulated through the CDM strategy, institutional capacity, and the development and application of appropriate methodologies and skill sets. In addition emphasis on the use of local knowledge and involvement of the NGO, scientific community and other key partners would help to broaden support. Technological hazards were on the increase and required attention as well.

Some key ingredients for the strategy were described as engagement, communication, dialogue, capacity building, allocation of financial resources with appropriate budgetary allocations, leadership from the financial sector and multi stakeholder involvement. Partnership, institutionalization, social impact, sequencing, process management, advocacy, mainstreaming, and emphasis on economic and financial loss were cited as additional considerations.
SUMMARY PARTICIPANT RECOMMENDATIONS

- Convene an annual meeting to receive and share progress reports from the respective stakeholders who need to be held accountable.
- Country-specific assessments should inform resource allocation and prioritization.
- Maintain the Matrix to facilitate a continuing inventory of resources and activities.
- Multi-stakeholder consultations should be institutionalized as part of the planning process.
- Sensitisation should be targeted.
- Obtain Government commitment for resource persons to continue projects started by donor funding.
- Increase donor support for strategic projects.
- Position National Disaster Offices with appropriate resources.
- Target Core Ministries for advocacy – Finance, Planning, Environment and Works.
- Promote Sector focus as is appropriate to the respective country.
- Develop mechanism for promoting use of agreed standards.
- Insurance by itself is not a mitigation strategy. Insurance needs to be linked to standards in order to be considered a mitigation strategy.