

Barbados

National progress report on the implementation of the Hyogo Framework for Action (2009-2011)

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Reporting period : 2009-2011

Last updated on : 12 Oct 2010

Print date : 08 Aug 2011

Reporting language : English

An HFA Monitor update published by PreventionWeb

<http://www.preventionweb.net/english/countries/americas/brb/>

Strategic goals

Area 1

The more effective integration of disaster risk considerations into sustainable development policies, planning and programming at all levels, with a special emphasis on disaster prevention, mitigation, preparedness and vulnerability reduction.

Strategic Goal Statement 2011-2013:

Disaster management and disaster risk reduction strategies are integrated into the national development planning and approval process through the development and implementation of the national policy for Comprehensive Disaster Management as the platform for Disaster Management in Barbados.

This policy makes provision for the Integration of disaster risk reduction strategies and options into development planning which will lead to the reduction of disaster vulnerability and the ultimate attainment of Sustainable Development.

In order to achieve sustainable development the following areas of activity have been identified:

- An enabling environment for Comprehensive Disaster Management through a legislative framework
- Promote proactive disaster management through risk reduction strategies and programmes.
- Improve Barbados capacity to management emergencies or disasters and their consequences in a coordinated, effective and efficient manner.
- Promote integrated and coordinated disaster management actions through partnership with diverse stakeholders and the government.
- Harness the competencies and resources of the citizens of Barbados by providing a community disaster management programme.
- Ensure adequate financial arrangements which will facilitate quick and effective preparedness, response and recovery efforts.
- Ensure that disaster recovery efforts are in accordance with prevention and mitigation strategies and options.

The Barbados National Strategic Plan for Barbados (2005-2025) incorporates the goals of CDM as key indicators of national development, as does the National Sustainable Development Policy. The amended National Physical Development Plan sets the framework for infrastructural development and with the use of setback requirements and building standards also incorporates disaster risk reduction strategy into the development control process.

Barbados as a coastal state relies heavily on its coastal zone for economic viability and the Coastal Zone Management Plan and Policy give consideration to the mitigation and prevention of disasters related to coastal hazards.

The draft Environmental Management Act will provide for strict regulation of use of ecosystems that form buffers against hazards.

Area 2

The development and strengthening of institutions, mechanisms and capacities at all levels, in particular at the community level, that can systematically contribute to building resilience to hazards.

Strategic Goal Statement 2011-2013:

The Government of Barbados agreed to a change in mandate to CDM which embraces the mainstreaming of Disaster Risk Reduction in national development programming being lead by the

national emergency management mechanism. This involved the transitioning from the Central Emergency Relief Organisation (CERO) to the Department of Emergency Management (DEM) as the coordinating agency for the national disaster management mechanism. An overall capacity needs assessment of the DEM is pending to provide the capability to realize CDM nationally.

A series of DEM Standing Committees is a mechanism within the overall Disaster Management and Disaster Risk Reduction systems which facilitates planning and implementation and draws on a wide cross section of technical expertise in public, private sectors and civil society.

Initiatives are in train, through the Standing Committee on Community Preparedness and the District Emergency Organisation (DEO) Advisory Council, to strengthen the capacity of the national Community Preparedness Programme, (CPP) by establishing a new institutional governance, administrative and operational mechanism for the DEO as the community-based vehicle for the development, implementation and monitoring of the CPP.

The DEOs have developed capacities in community profiling, including the training of organizations and communities in the conduct of community vulnerability assessments, early warning systems for coastal communities, flood monitoring, and the integration of disaster risk reduction in key economic sectors critical to national development, like tourism in relevant communities.

Area 3

The systematic incorporation of risk reduction approaches into the design and implementation of emergency preparedness, response and recovery programmes in the reconstruction of affected communities.

Strategic Goal Statement 2011-2013:

This expanded scope and mandate includes the development of a Hazard Mitigation Policy and Plan and the incorporation of a Hazard Impact Assessment within the framework of the Environmental Impact Assessment (EIA) which is currently, applied to new development initiatives.

Hazard Vulnerability Assessments and Hazard Mapping are informing emergency planning and this capacity is being strengthened by the use of current information and communication technology, for example use of Graphic Information System, GIS.

The development of a Barbados Building Code has established guidelines for disaster risk reduction in the built environment, thereby ensuring that in the recovery phases, inclusive of rehabilitation and reconstruction there is a standard for effective recovery of communities post disasters.

Plans are in train to develop a coastal risk assessment and management programme that will mainstream risk assessment of all coastal hazards experienced by Barbados, in particular coastal climate change adaptation strategies are being identified.

Priority for action 1

Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.

Priority for action 1: Core indicator 1

National policy and legal framework for disaster risk reduction exists with decentralised responsibilities and capacities at all levels.

Level of Progress achieved:

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

Means of verification:

- * Is DRR included in development plans and strategies? -- not complete --
- * No: National development plan
- * No: Sector strategies and plans
- * No: Climate change policy and strategy
- * No: Poverty reduction strategy papers
- * No: Common Country Assessments (CCA)/ UN Development Assistance Framework (UNDAF)

Description:

A newly constituted agency, the Department of Emergency Management has been given legislative authority under the Emergency Management Act, 2006 Cap 20 to coordinate the national Emergency Management System across the public, private sectors and the entire civil society.

The Cabinet of Barbados has formally agreed to the tenets of Comprehensive Disaster Management (CDM) which is an all inclusive policy for involving all of civil society in an all hazard approach at all stages of the Disaster Management continuum.

Key departments and ministries involved in Disaster Risk Reduction programmes are incorporated as key members into the national disaster management system, but the Hazard Mitigation Policy, Plan and programme are yet to be instituted. The DRR issues are however discussed and implemented within the DEM Standing Committees of the National Mechanism (planning), and individual Government agencies such as Town Planning and Soil Conservation Unit are carrying out DRR as their primary function, but greater integration is required.

Context & Constraints:

Inadequate technical human resources exist within the Department of Emergency Management to provide the coordinating roles and responsibilities beyond preparedness, response and limited elements of recovery.

The Department of Emergency Management, which has the legal authority to coordinate, develop and implement the national comprehensive disaster management programme, did not benefit from an institutional audit which would define the minimum technical, operational and administrative resources to

carry out its expanded mandate.

The Emergency Management Act, 2006 Cap 20 has no Regulations and therefore key elements of the Act have no legislative authority for policy implementation. The Act does not name the agencies of the National Emergency Management System nor articulate roles and responsibilities to specific members. However, from the former organization CERO, these roles and responsibilities were established despite the lack of a legislative framework at the time.

Almost all of the Policies and Standard Operation Procedures, SOPs are in draft without the benefit of a formal approval process. However, these policies and SOPs are generally followed and adhered to by the population under the leadership and guidance of the Department.

Significant progress has been made on an individual agency basis. However, the cohesive approach to DRR to optimize resources and provide for an adequate monitoring and evaluation (M&E) program is lacking.

Recommendations

- Fast track the development of appropriate "Regulations" under the Act.
- Institute DRR elements within the Act during the 2011 -2012 fiscal year.
- Institute the Hazard Mitigation Policy and inaugurate the Mitigation Council and develop a work plan and implementation schedule within the upcoming fiscal year.
- Inventory all existing national DRR initiatives, to provide a baseline for M&E of the country's readiness.
- Complete the institutional review of the Department of Emergency Management with the view of providing relevant resources to carry out CDM.

Priority for action 1: Core indicator 2

Dedicated and adequate resources are available to implement disaster risk reduction plans and activities at all administrative levels

Level of Progress achieved:

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

Means of verification:

- * Is there a specific allocation of budget for DRR in the national budget?
- * 0 % allocated from national budget
- * 0 USD allocated from overseas development assistance fund
- * 0 USD allocated to hazard proofing sectoral development investments (e.g transport, agriculture, infrastructure)
- * 0 USD allocated to stand alone DRR investments (e.g. DRR institutions, risk assessments, early warning systems)
- * 0 USD allocated to disaster proofing post disaster reconstruction

Description:

The annual budget of the DEM is dedicated to the administration of the Department. There is limited funding for response, rehabilitation with financial commitments being given for recovery (reconstruction) following an impact.

There is a national Emergency Management Fund being administered by the Cabinet Secretary and Head of the Civil Service under rules and regulations lay down by the Supreme Court of Barbados. There is also provision for corporate and public contribution to the Fund.

Barbados is signatory to the agreement establishing the Caribbean Emergency Management Agency, CDEMA formerly CDERA and is therefore a contributor to the Emergency Assistance Fund and the Caribbean Catastrophe Risk Insurance Facility, (CCRIF), a risk transfer facility, the elements of which provide some limited financial resources to support DRR.

Context & Constraints:

Being a Small Island Developing State designated as a country in transition, Barbados has restricted access to financing to support its entire sustainable development programmes particularly in disaster management and disaster risk reduction. There is demand among other agencies and departments for limited financial resources to achieve other national priorities.

Recommendations

- Solicit support from the private sector for the Emergency Assistance Fund
- Engage in national fund raising efforts on an annual basis.
- Provide opportunity and capacity for the Department of Emergency Management to access external financing for particular DRR projects.
- Provide a framework for the Department and the wider Disaster Management Programme to develop revenue-generating programmes that enable self-sustainability.
- Develop a broad-based incentive scheme to stimulate individual behavioral change with respect to resilience.

Priority for action 1: Core indicator 3

Community Participation and decentralisation is ensured through the delegation of authority and resources to local levels

Level of Progress achieved:

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

Means of verification:

- * Do local governments have legal responsibility and budget allocations for DRR? -- not complete --
- * No: Legislation
- * No: Budget allocations for DRR to local government

Description:

The Barbados governance system consists of a single strong centralized Government, with recent initiatives to decentralize under a system of constituency councils, with a mandate work with the CPP to achieve DRR.

The Comprehensive Disaster Management Policy which Barbados is implementing has specific key goals for public participation in DDR. These include the capacity to:

- Harness the competencies and resources of the citizens of Barbados by providing a mechanism and enabling environment for them to actively participate in the national community disaster management programme.
- Enhance community preparedness mechanism, the District Emergency Organisation, to enable communities to be informed, self-reliant and capable of cooperating with the national entity in Comprehensive Disaster Management, through on going public education and awareness programmes.

The District Emergency Organisation is delineated to provide national coverage for community involvement in Disaster Risk Reduction. The Organisation has been in operation for more than 25 years and is due for a major re-haul to bring its administration and operation more in line with the CDM expanded mandate.

The reformation process has started with the completion of the institutional and administrative assessment of the community mechanism. This Assessment Report will influence the ongoing efforts to institute a new governance structure to oversee the community preparedness programme and restructure a DEO Advisory Council. With these structures in place a more comprehensive disaster risk reduction programme, including community-based development of disaster and disaster risk reduction plans, enhanced response operations, simulation exercises will be introduced.

One key goal is to develop community-based Emergency Operation Centers which will result in the decentralization of the community responses, operations and resources.

There is specific allocation of budget within the overall budget of the Department for community preparedness. In addition, the Government of Barbados provides \$US 5,000 annual as a subvention to the DEO to assist in meeting the requirements of the mechanism. In addition, according to procedure, each DEO, or collectively can fund-raise to support projects and programme.

Context & Constraints:

There need to be a revisit the spatial definition of responsibility of each DEO along the political Constituency divide to eliminate the perception that there is a direct link to the political process. As a result, it is anticipated that there will be greater involvement by a wider cross-section of citizens in the process.

Recommendations

- Accelerate the community reform process.
- Develop a massive recruitment drive at the national level, and promote volunteerism for wide-spread participation in DRR programmes, and as a consequence, elevate the profile of DRR initiatives within communities.
- Develop a national training programme particularly to look at community vulnerability assessments.
- Strive for greater integration with the newly-constituted Constituency Councils which are a decentralized mechanism for community participation in sustainable development.

Priority for action 1: Core indicator 4

A national multi sectoral platform for disaster risk reduction is functioning.

Level of Progress achieved:

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

Means of verification:

* Are civil society organisations , national planning institutions, key economic and development sector organisations represented in the national platform? -- not complete --

* 0 civil society members (specify absolute number)

* 0 sectoral organisations (specify absolute number)

* 0 women's organisations participating in national platform (specify absolute number)

Description:

The Department of Emergency Management has been given the mandate for the incorporation of Disaster Risk Reduction into development planning in key sector economic and social sectors leading to sustainable development. The national architecture for disaster management which includes the incorporation of key government ministries, departments, the private sector, national, regional and international stakeholders, non-Governmental Organisations (NGOs) and the community, form the national platform for DRR through the multi-sectoral Emergency Management Advisory Council and its 16 Standing Committees.

The CDM Strategy and Framework including the National Work Programme articulates the national Disaster Risk Reduction agenda. Considerable progress has been made with disaster risk reduction mainstreamed within the Tourism Sector and plans are afoot to achieve this in the agricultural and business sectors.

The National Mitigation Council has a framework for involvement in a wide cross-section of stakeholders. The active Standing Committee on Coastal Hazards is working with these multi-stakeholders in disaster risk reduction initiatives to reduce hazards along the coast, such as tsunamis, storm surge, winter swells, erosion, sea level rise and oil spills.

Disaster management is working with the national Climate Change and Adaptation Focal Point and Steering Committee to prescribe climate-related DRR solutions to a myriad of key economic and social sectors.

Context & Constraints:

A key constraint is the lack of human resource capacity within the Department of Emergency Management to provide effective and efficient leadership to the national efforts.

Agency involvement in the mainstreaming of DRR process is more driven by personality and need to be better institutionalized with the public sector taking a more direct lead. The attrition in personalities affects the quality and continuity of interventions in this area.

The integration of Hazard Impact Assessments, HIA into the Environmental Impact Assessments, EIA is being sought although the Department of Emergency Management at the moment have limited capacity to systematically deliver the technical input required.

Recommendations

- The Emergency Management Act, 2006 Cap 20 needs to provide regulations governing the roles and responsibilities of the national disaster management and disaster risk reduction system. This will clarify specific roles of key agencies and actors in DRR forging greater cooperation and collaboration.
- Accelerate the establishment of the Hazard Mitigation Council and the development of the national Hazard Mitigation Plan as the multi-sectoral roadmap for DRR.
- Capacity needs to be enhanced to take full advantage of donor resources targeting disaster risk reduction projects and programmes at both national and community levels.

Priority for action 2

Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.

Priority for action 2: Core indicator 1

National and local risk assessments based on hazard data and vulnerability information are available and include risk assessments for key sectors.

Level of Progress achieved:

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

Means of verification:

* Is there a national multi-hazard risk assessment available to inform planning and development decisions? -- not complete --

* No: Multi-hazard risk assessment

* 0 % of schools and hospitals assessed

* 0 schools not safe from disasters (specify absolute number)

* No: Gender disaggregated vulnerability and capacity assessments

* No: Agreed national standards for multi hazard risk assessments

Description:

Vulnerability assessments, hazard maps and risk assessments for critical infrastructure are not generally applied to be able to holistically inform development planning. In the case of the Town and Country Planning Department and the Coastal Zone Management Unit, development regulation on the coast is based on the 100-year storm surge inundation line, and coastal setbacks are measured based on distance from this benchmark.

There are vulnerability assessments, hazard maps developed for the Scotland District area of Barbados, which constitutes 1/7 of the island's land mass that is prone to landslides and soil erosion. There is also the institutional framework of the Soil Conservation Unit within the Ministry of Agriculture, and legislation: the Soil Conservation Act, which is the driving force. DRR initiatives in this area include structural and non-structural mitigation. One such mitigation measure is the re-location of communities in landslide-prone and severe flooding areas.

To tackle the problem of inland and marine flooding, the Drainage Unit under the Ministry of the Environment, Water Resources and Drainage has been mandated to conduct vulnerability assessments, flood hazard maps and risk assessments in a systematic way, as well as mitigation works.

The Government has committed significant resources (US\$30 million) to a comprehensive coastal risk assessment and management programme, that will conduct vulnerability assessment, hazard mapping, and risk assessments for the major coastal hazards identified for Barbados.

Government has put in place a series of incentives to boost DRR actions on the part of individual

households and commercial entities. Incentives include retrofitting against wind (hurricane straps and shutters) and water collection systems.

Context & Constraints:

Resources are limited to carry out the required assessments and hazard maps for non-coastal hazards. In the built environment, the enactment of the Barbados Building Code would make legislative demands mandatory and the policing mechanism would be provided for in the Barbados Building Authority.

Recommendations

- Accelerated enactment of the Barbados Building Code and the enforcement mechanism must be an integral part of any short to medium-term implementation plan for hazard and risk assessments.
- An inventory of vulnerable housing infrastructure must be conducted, so that impact zones may be delineated for wind and flash flood hazard assessments
- Capacity development must be included in any future programmes.

Priority for action 2: Core indicator 2

Systems are in place to monitor, archive and disseminate data on key hazards and vulnerabilities

Level of Progress achieved:

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

Means of verification:

- * Are disaster losses systematically reported, monitored and analysed? -- not complete --
- * No: Disaster loss database
- * No: Reports generated and used in planning

Description:

Over the years, a number of individual agencies have compiled key data and information within Geographic Information Systems platforms, including DEM, Town and Country Planning, Lands and Surveys and Coastal Zone Management Unit. These data systems have informed limited decision making within the specific ambit of the agency managing it. In some cases, project funding enabled the establishment of the platforms but sustainability of the system was hampered due to insufficient capacity development over time to maintain databases with current information.

Some of the datasets collated such as sea level, seismic, beach profile measurements are housed in specific agencies, but not integrated for use in early warning systems.

The Emergency Management Act 2006 provides the authority for DEM to access any and all available information for DRR and disaster management purposes. While this provision will prove useful in the future, capacity within the coordinating agency does not allow its widespread utilization at this juncture.

Under the previously described coastal risk assessment and management programme, a scientifically-based integrated coastal risk data and information platform will be established, available to all sectors of the national emergency management system, and key economic sectors. Reports will be generated and

management options tested. Those identified as best options will be implemented island-wide.

Context & Constraints:

Having already obtained the approval for the coastal risk information platform, the only constraint relates to incorporating non-coastal hazard data and information into the platform for use by key stakeholders.

The issue of limited capacity to effectively utilize the platform by key stakeholders will prevent optimal use for decision making.

Recommendation

Capacity must be built to ensure that all users of the risk data and information platform are able to fully utilize the available resources for decision making.

Priority for action 2: Core indicator 3

Early warning systems are in place for all major hazards, with outreach to communities.

Level of Progress achieved:

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

Means of verification:

- * Do risk prone communities receive timely and understandable warnings of impending hazard events? -- not complete --
- * No: Early warnings acted on effectively
- * No: Local level preparedness
- * No: Communication systems and protocols
- * No: Active involvement of media in early warning dissemination

Description:

Hurricanes, and floods, are the main hazards to which Barbados is vulnerable and the Early Warning Systems (EWS) for these meteorological threats are well established. The Barbados Meteorological Services is the key warning agency which utilizes Doppler Radar Technology, satellite imagery and other technologies to provide forecasting. The Met Service then collaborates with the Department of Emergency Management and the Emergency Broadcast Agencies in timely dissemination of warnings to the public, through a series of bulletins, advisory, watches and warnings.

An EWS for floods has been initiated in one of the flood prone communities where the population has been severely impacted. Plans are in train to replicate this in other flood prone communities in support of other flood mitigation options.

A draft warning protocol for tsunamis has been developed, although the mass notification process is being further enhanced by the provision of sirens in key vulnerable locations and the incorporation of cellular technology.

The Seismic Research Centre (SRC) located at the University of the West Indies at St.

Augustine Campus, Trinidad and Tobago provide education and information on seismic hazards.

The Government of Barbados signed a Memorandum of Understanding with the United States Geological Survey (USGS) to establish a seismic monitoring unit to provide real time data regarding earthquake activity in Barbados and the adjacent regions, thereby enhancing the national capability to confirm to the population earthquake and possible aftershock activity.

Context & Constraints:

There is limited access to financial resources, technical capacity and maintenance to implement a Comprehensive Multi-hazard Early Warning System.

The coordination necessary to synthesize all required data for modeling and analysis does not yet exist within the national framework.

There are limited financial resources available to maintain and upgrade these EWS.

System maintenance and training across the entire spectrum of early warning is proving to be challenging due to attrition.

The pace of development of EWS components is delayed by human and financial resource limitations.

Some of the key hazards, such as earthquakes and tsunamis, are virtually unknown to the general public, thus the effort required to bring the population to an acceptable level of awareness represents a significant challenge.

Recommendations

Continue the expansion of the Emergency Broadcast System to incorporate current technology for mass dissemination of warning information.

Target specific vulnerable communities and enhance local communications systems to augment the national early warning systems.

Secure funding through government budgetary provision and or other donor funding to further strengthen and enhance the EWS for multi-hazards, through capacity building and equipment upgrades.

Priority for action 2: Core indicator 4

National and local risk assessments take account of regional / trans boundary risks, with a view to regional cooperation on risk reduction.

Level of Progress achieved:

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

Means of verification:

* Does your country participate in regional or sub-regional DRR programmes or projects? -- not complete
--

* No: Programmes and projects addressing trans-boundary issues

* No: Regional and sub-regional strategies and frameworks

* No: Regional or sub-regional monitoring and reporting mechanisms

* No: Action plans addressing trans-boundary issues

Description:

Barbados is one of the 16 Participating States (PS) of the CDEMA. The CDEMA Coordinating Unit promotes and facilitates the exchange of disaster risk reduction information and best practice, training, cooperation and collaboration among its members in the context of the Comprehensive Disaster Management Strategy and Framework.

The Regional Response Mechanism (RRM) facilitates cooperation between PS of CDEMA and provides for national, regional and international support in times of crisis.

Barbados is a member of the Eastern Caribbean Donor Group (ECDG) which also provides a coordinating mechanism for responding to the needs of the Eastern Caribbean in the event of a disaster. ECDG is an information-sharing mechanism designed to avoid duplication of effort and resources.

Barbados is a member of the Regional Security System (RSS) which coordinates security resources and provides an enhanced response capability in time of emergency/disaster.

Barbados actively cooperates with regional and international entities in the execution of risk reduction initiatives for multi-hazards and trans-boundary risks, including:

- Caribbean Development Bank, CDB,
- United Nations Development Programme, UNDP,
- Organisation of American States, OAS,
- Association of Caribbean States, ACS,
- Canadian International Development Agency, CIDA,
- United States Aid for International Development/Office of Foreign Assistance, USAID/OFDA,
- Intergovernmental Oceanographic Commission of UNESCO,
- Caribbean Institute for Meteorology and Hydrology, CIMH, and
- Caribbean Community Climate Change Center.

Barbados is the current Chair and major champion for the Tsunami and Coastal Hazards Warning System for the Caribbean and Adjacent Regions. In this context, national components of the system are being installed under the auspices of the DEM Standing Committee on Coastal Hazards. Sea level and seismic monitoring, hazard assessment, national warning communications, modeling efforts and public education, are all being implemented, with a view to having a functional warning system in place by the end of 2012.

Context & Constraints:

As a small island developing state, Barbados has severe capacity limitations to fulfill the obligations of all regional and international programmes for DM and DRR. As a consequence, the maximum possible benefits are usually not realized from these programmes, unless the regional organisation itself has a very strong human resource base, and is able to render significant levels of on-hands assistance to countries when necessary.

Recommendations

To prevent duplication and maximize benefits to all countries, regional and international organisations must coordinate when they are conducting programmes in overlapping areas. In the Caribbean region, there is some effort in this regard, but much more can and must be accomplished in order for island states to realize their true potential in disaster management.

Priority for action 3

Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.

Priority for action 3: Core indicator 1

Relevant information on disasters is available and accessible at all levels, to all stakeholders (through networks, development of information sharing systems etc)

Level of Progress achieved:

2: Some progress, but without systematic policy and/ or institutional commitment

Means of verification:

- * Is there a national disaster information system publicly available? -- not complete --
- * No: Web page of national disaster information system
- * No: Established mechanisms for accessing DRR information

Description:

Currently, information dissemination on disasters is not systematic, but the DEM works assiduously, through the DEOs, to get information to communities through flyers, posters, lectures and presentations.

The DEM uses various media including mass media, public lectures, exhibitions, open days, PowerPoint presentations and videos to reach all segments of the population. This is the case for all hazards, but particularly at the start of the hurricane season. Strategies have been developed to reach specific target groups, including children, the elderly, the physically challenged, and tourists. Publications, documentaries, brochures and public lectures have been widely used and advantage is taken in a post-recovery environment to reach the specific population segments. Attempts are also being made to establish a library/documentation center to specially provide disaster management and DRR information.

The DEM partners with the Public Sector, such as the local professional associations of engineers and architects to support the concept of constructing disaster resistant building including private homes.

The Emergency Management Act, 2006 Cap 20 provides the legal authority for the DEM to request access to information including data sets from key public and private sector entities for disaster management and disaster risk reduction purposes. Databases have been shared with DEM to enhance its Geographic information System and efforts.

The proposed Integrated Coastal Risk Information Platform (ICRIP) to be initiated in April 2011, which makes use of the results of Natural Hazard and Risk Assessments for each coastal hazard. In these assessments, both hazard maps of the different hazards will be prepared, as well as inventories of vulnerable infrastructure, property and population, and estimates of probable losses to public and private assets. End users, such as the DEM, will have full access to all data and (most) other system functionality.

Context & Constraints:

Although some use is made of the internet department and agencies in both the public and private sectors are not operating at the same level and so there is a disparity in the way systems are utilized.

Not all the systems being used are user-friendly and greater training across the wide spectrum is required.

There is definitely a need for greater integration of information systems to ensure access and sharing.

Agencies which develop data information systems are reluctant to share for various reasons. There is still the tendency for agencies to perpetuate a turf war as it relates to the sharing of information and there is growing concern about the lack of control over how the information is used and the inability to recoup the financial outlay to produce the information in the first place.

The upgrade of DEM to better utilize information and communication technology is very slow.

Currently the information flow is severely limited, and although some use is made of the internet, the DEM does not regularly update the website with information for use by the public.

It is expected that the ICRIP will solve many of the issues related to the public's access to information on disasters, and will provide a basis upon which further components on non-coastal hazards may be added in subsequent years.

Recommendations

The ICRIP be considered an extremely vital component of the CRAMP, and that it be implemented expeditiously.

Accelerate the process of enhancing the capacity of DEM to lead the national disaster management programme.

Priority for action 3: Core indicator 2

School curricula , education material and relevant trainings include disaster risk reduction and recovery concepts and practices.

Level of Progress achieved:

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

Means of verification:

* Is DRR included in the national educational curriculum? -- not complete --

* No: Primary school curriculum

* No: Secondary school curriculum

* No: University curriculum

* No: Professional DRR education programmes

Description:

Disaster risk reduction is not included as a matter of policy within the national educational curriculum at all levels from primary to tertiary. However the topic and issues relating to disaster management and disaster risk reduction are infused into several subjects within the curriculum like geography, social

studies and science, at all levels.

Research papers and class projects at the primary secondary and tertiary levels are increasing, with many group projects encouraged among students. Increasingly students seek out information in the library of the disaster office or demand that relevant information be provided by use of web-pages and the Internet.

Greater involvement in school disaster management and the development of disaster plans for schools is being promoted among principals and staff with enthusiastic support from the school population at all levels. Greater use is being made of functional and full scale simulation exercise for specific hazards to which school populations are vulnerable.

A school safety programme with assistance from the USAID Office of Foreign Disaster Assistance (OFDA), the Ministry of Education and the Department of Emergency Management is being instituted at the primary level with the hope of achieving greater infusion in the curriculum. In addition, specific training courses are designed and conducted targeting the public and private sectors and where possible infused into the training programmes of response agencies like the police, fire services and health institutions.

Educational materials are developed and widely circulated in country. Teacher training for tsunamis has been initiated through the Barbados's teacher training institution, and this approach will be replicated in other training institutions.

Context & Constraints:

Lack of a definitive policy regarding disaster management and disaster risk reduction being infused into existing curriculum.

Lack of educational materials including instructors' and student manuals and readily available.

School curriculum is overcrowded and more encouragement for infusion into existing subjects needs to be encouraged.

Recommendations

- Secure a policy directive for greater incorporation of DRR concepts and practices in all levels of the curriculum.
- Establish disaster risk reduction units within the learning institutions.
- Greater encouragement for students at the secondary, undergraduate and graduate levels to undertake research projects relating to DRR.
- Examine ways to further incorporate DM and DRR into existing training schedules and such courses made mandatory especially for the lower levels of the public service.

Priority for action 3: Core indicator 3

Research methods and tools for multi-risk assessments and cost benefit analysis are developed and strengthened.

Level of Progress achieved:

2: Some progress, but without systematic policy and/ or institutional commitment

Means of verification:

* Is DRR included in the national scientific applied-research agenda/budget? -- not complete --

- * No: Research outputs, products or studies
- * No: Research programmes and projects
- * No: Studies on the economic costs and benefits of DRR

Description:

A number of individual projects have resulted in some risk assessment results for Barbados. A pilot project for storm surge modelling and vulnerability assessment for the city of Speightstown (an area prone to flooding) was conducted and produced useful hazard maps for the area. It was generally agreed, however, that the project should have extended to include economic loss data, so that the DEM would have a template upon which to build for the complete risk assessment cycle. The project did produce maps showing vulnerable zones for events with different probabilities, and identified the critical infrastructure in the inundation zones.

Another such project for tsunamis was completed by the Norwegian Geotechnical Institute for the capital city, Bridgetown. The Consultants identified a few credible scenarios, and modeled the propagation of tsunami waves from the source to the shores of the city. Based on available high resolution bathymetry, they were able, as with the Speightstown storm surge project, to produce high resolution hazard maps for the city, showing areas vulnerable to different tsunami wave heights. In collaboration with the University of the West Indies, Cave Hill Campus in Barbados, a vulnerability assessment was added as a component of the project, where a post-graduate student identified all the critical buildings in the city inundation areas and was able to ground-truth them for incorporation into a risk map.

These and similar projects have been completed over the years, but with little or no incorporation of the results into planning and development policies. In addition, the replication of the excellent results obtained has not been performed thus far. No cost benefit analysis has been conducted using the damage assessment reports from disasters over the years.

Context & Constraints:

The financial outlay involved in the conduct of risk and vulnerability assessments has been prohibitive. However, with the projected losses and damage from climate change impacts, the necessity for these assessments and analyses has been brought to the attention of policy makers, who have agreed to make the funding available for the CRAMP project. The risk and vulnerability assessments for all coastal hazards will be completed under this programme.

One constraint continues to be the cost benefit analyses to support the decision making process with respect to planning and development policy decisions.

Recommendations

The Ministry of Finance and Economic Affairs will need to take on board the results of the CRAMP and put in place methods and tools for cost benefit analysis in relation to hazards.

Other hazards experienced by Barbados other than coastal hazards must also be included in the vulnerability and risk assessments. Without these, Barbados will not have a truly multi-hazard programme, with all risks identified and managed.

Priority for action 3: Core indicator 4

Countrywide public awareness strategy exists to stimulate a culture of disaster resilience, with outreach to urban and rural communities.

Level of Progress achieved:

5: Comprehensive achievement with sustained commitment and capacities at all levels

Means of verification:

- * Do public education campaigns on DRR reach risk-prone communities? -- not complete --
- * No: Public education campaigns.
- * No: Training of local government
- * No: Availability of information on DRR practices at the community level

Description:

The Department of Emergency Management, DEM, as the lead agency for comprehensive disaster management in Barbados has been successful in its collaboration with the Standing Committee on Public Education and Awareness in implementing a comprehensive public education and awareness programme at the national and community levels utilizing a mass media approach.

Supplements are developed for both major newspapers annually throughout the Hurricane Season. In addition, articles on specific hazards are written and widely disseminated on crucial national and international days for specific hazards.

Disaster Management and DRR specialists make regular appearances on popular talk shows on both radio and television programme with high listenership and viewership. These programmes usually have a community call-in facility where there is direct interaction with the public. Public education and awareness programmes are also sponsored by the public sector, particularly those whose primary function is linked to disaster risk reduction services and private entities like insurance companies etc. DEM also develop hazard-specific brochures and in conjunction with the Government Information Service radio and television Public Service Announcements (PSAs) are aired throughout the year.

The Public Awareness strategy targets specific segments of the population as well. Oral presentations are also made to community-based organizations like Neighbourhood Watch Organisations, Parent Teachers' Associations (PTAs), Boys Scouts and Girl Guide Associations etc.

Context & Constraints:

There is a lack of a dedicated mass communications specialist within the DEM to conceptualise multimedia programmes in a systematic way, and to liaise with private sector entities for programme sponsorship and delivery.

The DEM is unable to harness the expertise and resources of the private sector for product enhancement.

Public education and awareness is geared almost exclusively to preparedness and response. Equal emphasis needs to be placed on prevention, mitigation and recovery.

Recommendation

Develop a multi-year public awareness and education programme inclusive of specific multi-media campaigns especially on anniversary of disaster events.

Priority for action 4

Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.

Priority for action 4: Core indicator 1

Disaster risk reduction is an integral objective of environment related policies and plans, including for land use natural resource management and adaptation to climate change.

Level of Progress achieved:

3: Institutional commitment attained, but achievements are neither comprehensive nor substantial

Means of verification:

- * Is there a mechanism in place to protect and restore regulatory ecosystem services? (associated with wet lands, mangroves, forests etc) -- not complete --
- * No: Protected areas legislation
- * No: Payment for ecosystem services (PES)
- * No: Integrated planning (for example coastal zone management)
- * No: Environmental impacts assessments (EIAs)
- * No: Climate change adaptation projects and programmes

Description:

The draft Environmental Management Act has been in draft form for more than 10 years. The document is very comprehensive, and will be very useful in advancing the disaster management agenda. One advantage is that the draft document is very well known by the agencies with responsibility for environmental management, and many of its tenets have been incorporated into the routine actions and decisions of those agencies. The importance of conservation of all ecosystems for the benefit of DRR is recognized and considered in policy and planning. Such activities however, do not preclude the need to have the legislation passed.

The 2003 Amended National Physical Development Plan has taken account of the requirements to incorporate elements of DRR into land use management, and the Town and Country Planning Department is well prepared to establish the system needed for incorporating hazard impact assessments in the current Environmental Impact Assessment process. However, for this procedure to be operationalised, there needs to be the installation of the hazard mitigation council.

The draft National Climate Change Adaptation Policy is in the process of being completed and presented to policy makers for their endorsement. Barbados is Party to the United Nations framework Convention on Climate Change and the Kyoto Protocol. The Ministry of Environment, Water Resources and Drainage is the National focal point to the UNFCCC. A National Climate Change Steering Committee, chaired by the Ministry, includes members of key sectors such as energy, coastal zone management, tourism, the private sector and training institutions, and the DEM Director sits on this committee.

Context & Constraints:

At all levels of Barbados's governance structure, the nexus between disaster management and

environmental protection is very clear. However, the enactment, and hence enforcement, of environmental legislation continues to plague the implementation process. Consultation among agencies exists, but needs to be taken to the next level of collaboration.

Limited capacity within the DEM has held back the installation and consequential service requirements of the hazard mitigation council. However, given the new mandates with respect to climate change adaptation programmes, it has now become imperative that the council be convened. The broad range of climate change issues has not been generally understood by the majority of players within the disaster management system.

Recommendations

The draft Environmental Management Act must become a reality for the institutionalization of joint DRR and environmental initiatives.

The Hazard Mitigation Council must be instituted expeditiously, as there are a number of plans which cannot be implemented without this framework.

The completion of the draft Climate Change Adaptation Policy is also of necessity, to advance the DRR agenda in relation to climate change impacts.

Priority for action 4: Core indicator 2

Social development policies and plans are being implemented to reduce the vulnerability of populations most at risk.

Level of Progress achieved:

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

Means of verification:

- * Do social safety nets exist to increase the resilience of risk prone households and communities? -- not complete --
- * No: Crop and property insurance
- * No: Employment guarantee schemes
- * No: Conditional cash transfers
- * No: DRR aligned poverty reduction, welfare policy and programmes
- * No: Microfinance
- * No: Micro insurance

Description:

The establishment of the Ministry of Social Care, Constituency Empowerment and Community Development consolidates key agencies that are responsible for the development and execution of social policy. There is a dedicated effort at the national level to implement a poverty alleviation agenda aimed at targeting the most vulnerable in the community including components of disaster management

and disaster risk reduction. A Welfare and Relief DEM Standing Committee is intimately involved in planning, response and recovery activities for disasters. Disaster Mitigation activities are involved in the relocation of affected communities from landslides and reoccurring severe flooding are part of social disaster risk reduction programme.

At the community level, the Constituency Councils have been recently instituted with areas of responsibility for geographic segments of Barbados and liaising with the Department of Emergency Management DEOs. One of their mandates is to reduce the hazard vulnerability in their respective areas. Work is carried out with the Drainage Unit of the Ministry of the Environment, Water Resources Management and Drainage, to alleviate severe flooding by the clearing of major water courses, cleaning of and the sinking of wells and other mitigation measures.

There is a Committee mandated to provide guidance and oversight to special populations (those that are physically and mentally challenged) and of other vulnerable persons. The work of Non-governmental Organisations, like the Barbados Red Cross, the Salvation Army, and ADRA, as well as National Rotary Clubs, also contribute to the alleviation of poverty and the protection of vulnerable populations.

A disaster management Welfare and Relief Policy has been developed and was widely used in response to Hurricanes Lili (2002) and Ivan (2004).

Context & Constraints:

Access to financial and other resources to reduce the volume of difficulties being experienced by vulnerable communities limits significant direct and programmatic contribution in DRR in these areas. Technologies that reduce the risk of persons with special challenges are yet to be considered.

The homeless have not been considered as a specific group as yet in the disaster management social policy framework with respect to DM and DRR although there are some NGOs that are currently developing and implementing programmes targeting this vulnerable group.

Recommendations

It is necessary to harness the expertise and other resources of the private sector, community-based organizations and non-governmental organizations to further complement the efforts of government.

Articulate a land use policy that discourages squatters.

Provide greater financial incentives to genuine contributors to poverty alleviation programmes.

Include the homeless as a specific social group to be targeted.

Priority for action 4: Core indicator 3

Economic and productive sectorial policies and plans have been implemented to reduce the vulnerability of economic activities

Level of Progress achieved:

3: Institutional commitment attained, but achievements are neither comprehensive nor substantial

Means of verification:

* Are the costs and benefits of DRR incorporated into the planning of public investment? -- not complete --

* No: National and sectoral public investment systems incorporating DRR.

* No: Investments in retrofitting infrastructures including schools and hospitals

Description:

Some progress has been made by the Ministry of Finance and Economic Affairs to formulate policies covering elements of economic activity to reduce disaster vulnerability in key economic sectors. Incentives have been given to householders like providing hurricane shutters, use of hurricane straps in new construction and retrofitting to reducing vulnerability to houses and the built environment

Disaster Management and DRR have been successfully mainstreamed in the Tourism Sector and the sector usually accesses incentives to reduce vulnerability. An equal attempt is being made to mainstream DRR in the agricultural sector and initial consultations have been made with the World Food Programme and CDEMA in providing model planning for DM and DRR in this sector. The adaptation process is yet to be started.

The DEM has plans to engage the Ministry of Agriculture, Food, Fisheries, Industry and Small Business Development, in disaster mitigation planning for the sector and there is already in existence an excellent working mechanism with the Ministry of Agriculture, to provide planning and preparedness support for food and relief supplies in a national crisis. Shifting the focus should not be too difficult.

With regard to the business and productive sectors not enough work has been done beyond the annual hurricane preparedness and response activity.

Barbados is a contributor to the Caribbean Risk Insurance Facility (CCRIF) through which funds are available to meet response and recovery activities following a major hazard impact. In addition, national contingency funds are available in the appropriate line item in the DEM's annual budget as well as a Catastrophe Fund with a facility for public and private sector contributions. Under CDEMA's Regional Response Mechanism, RRM and the ECDGDM mechanism funds are provided by regional and international donor agencies to meet response and recovery activities.

Context & Constraints:

The lack of capacity to promote and lead the process of DM and DRR in the agricultural sector.

Lack of promotion of the economic incentives to the wider population in a sustained way.

Recommendations

Collaborate with the Ministry of Agriculture, Food, Fisheries, Industry and Small Business Development to convene a national consultation on DM and DRR in that sector.

Develop a mass public education and awareness programme highlighting relevant economic incentives available to the population.

Maintain engagement with the financial institutions and the Ministry of Finance and Economic Affairs to take great advantage of the expertise and resources available to enhance programming.

Priority for action 4: Core indicator 4

Planning and management of human settlements incorporate disaster risk reduction elements, including enforcement of building codes.

Level of Progress achieved:

3: Institutional commitment attained, but achievements are neither comprehensive nor substantial

Means of verification:

- * Is there investment to reduce the risk of vulnerable urban settlements? -- not complete --
- * No: Investment in drainage infrastructure in flood prone areas
- * No: Slope stabilisation in landslide prone areas
- * No: Training of masons on safe construction technology
- * No: Provision of safe land for low income households and communities

Description:

The Barbados Building Code has been completed for some time but has not yet been adopted by the Parliament. Notwithstanding, the elements of the Code have been widely disseminated and are being followed by developers on the island.

The system of technical review and permitting for development planning is very well established, with annual improvements made to the system to incorporate DRR strategies. The Town Planning Act and the National Physical Development Plan establishes the criteria for activities that constitute development, as well as major development for which an EIA process is triggered. Through a series of consultations with technical and scientific agencies, the Town and Country Development Planning Office grants permits to develop land in various ways. Where major land use changes or large residential or commercial centers are planned, the analytical review process is even more rigorous.

Context & Constraints:

There are a number of squatters living in less than acceptable circumstances with respect to disasters. Even though the planning legislation and policy makes full provision for dealing with this situation, the political will to remove persons from vulnerable areas is not always strong.

A number of vulnerable settlements exist in flood-prone areas, whether by stormwater or coastal inundation, mainly because these settlements existed prior to planning laws and policies in-country. Some individual applications have been approved in vulnerable zones since the existence of the development control process as well, mainly because the Town Planning Act provides for ministerial override of planning decisions. While the reasons for this provision are clear (economic and social issues are also considered at the ministerial level, and not just environmental, land use and DRR issues) at times, decisions taken actually inadvertently increase the vulnerability of such development to hazards.

Recommendation

A strong recommendation is reiterated here. The proposed Hazard Mitigation Council to be chaired by the Chief Town Planner, head of the Town Planning Department should be established with a sense of urgency to provide a more robust analysis for decision makers of potential consequences of inappropriate location of settlements of any kind. These recommendations will also be based on the risk and vulnerability assessments to be conducted under the CRAMP project during the next five years.

Priority for action 4: Core indicator 5

Disaster risk reduction measures are integrated into post disaster recovery and rehabilitation processes

Level of Progress achieved:

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

Means of verification:

- * Do post-disaster recovery programmes explicitly incorporate and budget for DRR? -- not complete --
- * 0 % of recovery and reconstruction funds assigned to DRR
- * No: Measures taken to address gender based issues in recovery

Description:

There is a post-recovery process particularly in the rehabilitation and reconstruction of disaster impacted houses. A DEM Standing Committee on Housing Recovery is chaired by the General Management of the National Housing Corporation which is responsible for the development of a Housing Recovery Programme in the immediate, medium and short terms. The government of Barbados has as a matter of policy agreed that rehabilitative houses by Government should include DRR Measures to reduce vulnerability there the quality of these houses are greatly enhanced.

Housing Recovery Crews have been identified utilizing both public and private expertise and resources. In any rebuilding process, the Town and Country Planning have been consulted and No build decisions have been taken in highly vulnerably housing sites. Relocation has been an option particularly for houses located in flood plains and land slide locations. A "No Build" policy is also maintained for these areas but occasionally squatters rebuild in these open lots.

DEM used the mass media to disseminate information of building hazard resistant houses. In addition, a hand book was prepared and several workshops have been conducted targeting the informal housing sector and small artisans. A model "chattel house" was also constructed demonstrating the effective use of mitigation measures on wooden houses used mainly by persons in the middle and lower economic brackets.

Context & Constraints:

The DEM's inability to maintain a consistent multi-media programme for the housing sector.

The lack of a policing mechanism to ensure that the mitigation measures become mandatory.
Recommendations

Work more closely with the DEM Housing Recovery Standing Committee to consistently develop awareness and public education programmes dealing with these issues.

Request that stronger requirements are instituted to deal with the construction of home by the house owners in the lower economic strata.

Priority for action 4: Core indicator 6

Procedures are in place to assess the disaster risk impacts of major development projects, especially infrastructure.

Level of Progress achieved:

3: Institutional commitment attained, but achievements are neither comprehensive nor substantial

Means of verification:

- * Are the impacts of major development projects on disaster risk assessed? -- not complete --
- * No: Assessments of impact of projects such as dams, irrigation schemes, highways, mining, tourist developments etc on disaster risk
- * No: Impacts of disaster risk taken account in Environment Impact Assessment (EIA)

Description:

The land use management policies are in place and functioning, but implementation in relation to DRR is still required. In addition, DRR in relation to the planning of critical infrastructure such as schools, fire stations, and hospitals has not yet been articulated in a policy context.

Other types of major development projects such as hotel plant, ports and marinas, many of the elements of hazard analysis to be considered are coastal in context. Consequently the very mature coastal zone management programme, which includes coastal development control policies, plans and enforcement procedures, ably handles the requirements related to those hazards.

Context & Constraints:

Building requirements for major development rest with the Building Code, and other non-coastal hazards are enforced by other key agencies of government but without the formal adoption of the building code, the adherence to recommendations by developers is strictly on a voluntary basis.

While Government is more conscious of the need to site critical infrastructure away from the coast, there needs to be a better appreciation of other inland areas that may be vulnerable to hazards as well.

Priority for action 5

Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.

Priority for action 5: Core indicator 1

Strong policy, technical and institutional capacities and mechanisms for disaster risk management, with a disaster risk reduction perspective are in place.

Level of Progress achieved:

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

Means of verification:

* Are there national programmes or policies to make schools and health facilities safe in emergencies? -- not complete --

* No: Policies and programmes for school and hospital safety

* No: Training and mock drills in school and hospitals for emergency preparedness

Description:

The National Emergency Management System in Barbados has been developed more than 50 years ago and has been the model for the establishment of national organizations in the Caribbean region under the Pan Caribbean Disaster Preparedness and Prevention, CDERA and now CDEMA.

There is a National Disaster Plan as required by the Emergency Management Act, 2006 Cap 20 which lays out the guidelines for responding to multi-hazards. The Plan has several hazard specific national, departmental and sectoral plans. The list of Plans includes:

- The National Mass Casualty Plan
- The National Mass Crowd Plan
- The National Search and Rescue Plan
- The National Oil Spill Plan
- The National Hazardous Material Plan

These all have appropriate sub-plans that include all of the Emergency Response Functions, ERFs, like evacuation, shelter, medical, etc.

Action has been initiated to develop community-based plans but these have not yet been fully developed. A national Evacuation Plan is in draft awaiting the scientific data to highlight the likely inundation lines to inform the coastal evacuation process

National capacity exists for the assessment of national readiness to face adverse events and this is done at the start of the annual Hurricane Season.

Context & Constraints:

None noted.

Priority for action 5: Core indicator 2

Disaster preparedness plans and contingency plans are in place at all administrative levels, and regular

training drills and rehearsals are held to test and develop disaster response programmes.

Level of Progress achieved:

5: Comprehensive achievement with sustained commitment and capacities at all levels

Means of verification:

- * Are the contingency plans, procedures and resources in place to deal with a major disaster? -- not complete --
- * No: Contingency plans with gender sensitivities
- * No: Operations and communications centre
- * No: Search and rescue teams
- * No: Stockpiles of relief supplies
- * No: Shelters
- * No: Secure medical facilities
- * No: Dedicated provision for women in relief, shelter and emergency medical facilities

Description:

Barbados has a comprehensive set of Disaster Management Plans and Standard Operating Procedures for multi-hazards including natural and man-made. There are also key sector and contingency plans. Requirement is also made in the Emergency Management Act, 2006 Cap 20 for the delineation of especially vulnerable areas, critical infrastructure and vulnerable persons. Area Plans have special requirements under the Act for emergency management plans to be developed.

Liaison Officers are designated in the public and private sectors and the requirement is for plans and SOPs to be developed, updated and shared with the Department of Emergency Management on an annual basis. Training have been developed for these Liaison Officers throughout the sectors. In addition, the DEM conducts Plan Development training workshops on an annual basis for all sectors.

At least one national full scale exercise is conducted in addition to the participation in regional and hemispheric simulation exercises. An increased in disaster drills at the primary schools is being experienced. The post-reviews of these exercises usually identify gaps in procedures, resources and training.

The Emergency Operation Center, EOC mechanism is fully established and functional and greater emphasis is now being place on secondary satellite EOCs at the community levels for coordination and response.

National Search and Rescue, (SAR) teams have been established with appropriate training and exercising at the national and regional levels. Barbados also is part of the regional Search and Rescue teams and there is a national SAR plan and relevant SOPs.

Barbados is also a Sub-regional Focal Point for the Eastern Caribbean with response responsibility for the countries of St. Vincent and the Grenadines, Saint Lucia and the Commonwealth of Dominica. A

regional model SRFP Protocol has been developed by CDEMA and Barbados is in the process of adapting the Model. One of the responsibilities of the SRFP is to maintain a regional warehouse which houses emergency relief supplies readily for dispatch to an affected country in the sub-region although there are national warehouses in each country.

An Exercise Design course has been developed for use at national and regional levels and there is a cadre of trainer of trainers who can conduct courses.

Context & Constraints:

Due to the limited capacity, both of the DEM and within the national emergency management system, simulation drills and exercises are not conducted as often as they ought to be.

Lack of training in Exercise Design is hampering the greater utilization of this method of testing plans and procedures.

DEM to conduct training in Exercise Design, therefore empowering a larger number of persons who can conduct a suite of exercises.

Encourage and promote the use of disaster drills and simulation exercises

The DEM should incorporate at least one (1) exercise per year in its annual plans and budget, to ensure continuous monitoring and evaluation of the plans, standard operating procedures, and educations programmes being implemented.

Priority for action 5: Core indicator 3

Financial reserves and contingency mechanisms are in place to support effective response and recovery when required.

Level of Progress achieved:

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

Means of verification:

- * Are financial arrangements in place to deal with major disaster? -- not complete --
- * No: National contingency funds
- * No: Catastrophe insurance facilities
- * No: Catastrophe bonds

Description:

There are national contingency funds available to the National Emergency Management System. The DEM has a budget line in its annual budget of \$50,000 to meet contingency needs. In addition, existing budgets in key response agencies are reallocated to meet contingencies while the Cabinet of Barbados and the Parliament access funds from the Consolidated Fund to replenish agency funds when the emergency has passed.

There is a Catastrophe Fund established by the Ministry of Finance to be financed from public sector

contributions over a five year period. In addition, there is an Emergency Fund established by the Barbados Supreme Court and administered by the Cabinet Secretary with a provision for public and private sector contributions as well as the general public. There is a Board of Directors which governs the Fund and also a provision for fund-raising to replenish the Fund.

At the regional level Barbados is a participating member of the Caribbean Catastrophe Risk Insurance Facility, CCRIF a reserve insurance mechanism which allows governments to purchase unique coverage not available in the commercial markets at rates only achievable through the pooled approach.

As a Member State of CDEMA, Barbados contributed to a standing Emergency Fund which is available to support emergency response to States severely impacted by hazards and have declared a Level 3 emergency triggering the Regional Response Mechanism. When such a mechanism is triggered, regional and international donor agencies also contribute the response.

The Barbados Red Cross Society is linked to the International Red Cross and Red Crescent Societies and has access to international funds which are made available if the situation warrants it.

Context & Constraints:

The available funds are never enough to meet the costs of major impacts and this can sometimes slow down response.

Access financial resources in times of crisis are slowed because of bureaucratic procedures.

Recommendations

Ensure that in time of no hazard impacts, fund-raising efforts are undertaken to boost Funds that are not resources to meet the anticipated challenges.

Priority for action 5: Core indicator 4

Procedures are in place to exchange relevant information during hazard events and disasters, and to undertake post-event reviews

Level of Progress achieved:

5: Comprehensive achievement with sustained commitment and capacities at all levels

Means of verification:

- * Has an agreed method and procedure been adopted to assess damage, loss and needs when disasters occur? -- not complete --
- * No: Damage and loss assessment methodologies and capacities available
- * No: Post disaster need assessment methodologies
- * No: Post disaster needs assessment methodologies include guidance on gender aspects
- * No: Identified and trained human resources

Description:

The Chief Information Officer in the Government Information Service facilitates the access of the broadcast media to keep the population informed during a hazard event. In addition, key technical

members of the Emergency Management System also have access to the population through this medium.

When the Emergency Operation Center is activated the Emergency Telecommunications System is utilized to make contact with members of the national system via VHF, UHF etc. A direct link out of the NEOC to the radio stations are also facilitated by specialized equipment in the Office of the Director of DEM. Provision is also made for the Emergency Broadcast System to be activated as well where direct broadcast can be made from a studio reserve for that purpose.

Situation reports are submitted to the CDEMA for dissemination to other Participating States and other partners. The DEM facilitates post-event reviews where response and recovery plans and SOPs are reviewed and updated. These are usually chaired by the Director, DEM or by the Permanent Secretary in the Ministry of Home Affairs and attended by key members of National Emergency Management System.

As part of the CDEMA System, the regional emergency telecommunication network is effectively and efficiently maintained and the annual Simulation Exercise, REGION RAP supports the regional capability to pass information.

Context & Constraints:

Some times there is a significant lapse in the review process and this is dependent on the extent of the hazard impact.

Recommendation

Continue to encourage a system of agency review before national reviews are undertaken to ensure that information is readily available to inform updating of plans and procedures.

Continue to provide training in the use of the Emergency Telecommunication System in a direct link with NEOC and field operatives.

Maintain a constant review of technology that can facilitate the passing of information using up-to-date technology.

Encourage more CDEMA Participating States to actively participate in the annual REGION RAP Simulation Exercise.

Drivers of Progress

a) Multi-hazard integrated approach to disaster risk reduction and development

Levels of Reliance:

Partial/ some reliance: Full acknowledgement of the issue; strategy/ framework for action developed to address it; application still not fully implemented across policy and practice; complete buy in not achieved from key stakeholders.

Do studies/ reports/ atlases on multi-hazard analyses exist in the country/ for the sub region?:

-- not complete --

Description (Please provide evidence of where, how and who):

Please identify where more efforts or emphasis might be required in the forthcoming years, and anticipate the types of investment / strategy required so that each disaster risk reduction and recovery effort places the optimal emphasis on relevant 'drivers'. This is also an opportunity to explain why a particular intended outcome did, or did not, lay emphasis on a driver.

1. Enhancing the technical and human resource capacity of the DEM and its Standing Committees to implement Comprehensive Disaster Management as the agreed multi-hazard platform for DRR in Barbados.
2. The roles and functions of all key stakeholders in the CDM process must be legislated, articulated clearly and frequently simulated.
3. The private sector and civil society must be fully integrated into the CDM system, not just for consultation, but collaboration, and ultimately, delegation.
4. Engage in a sustained capacity development exercise that assures technical expertise at all levels, and allows for adequate succession planning.
5. Integrate climate change adaptation strategies and programmes with DRR initiatives, mainstreaming actions and information, ensuring a high level of coordination among different national focal points and implementing agencies.
6. Stress science for multi-hazard assessment as a priority, and appropriate levels of funding available and sustained at the national level.
7. Based on the science, a series of interactive, web-based hazard atlases should be available to all key stakeholders for decision making at all levels, especially the community level.
8. Build strong community-based hazard information networks, where individuals are capable of reacting appropriately to a suite of hazards to save themselves and others.

b) Gender perspectives on risk reduction and recovery adopted and institutionalized

Levels of Reliance:

No/ little reliance: no acknowledgement of the issue in policy or practice; or, there is some acknowledgement but nothing/ little done to address it

Description (Please provide evidence of where, how and who):

First establish contact with the Bureau of Gender Affairs to table discussions on gender and DRR issues.

Educate key partners in the national emergency management system, especially at the community level, in gender issues and DRR.

Develop an action plan to mainstream gender issues into the disaster management agenda.

Work with the Statistical Department to determine the level of gender disaggregated data available for use in the DRR arena.

During periodic updates of strategic plans, incorporate gender issues into DRR policies.

Partner with civil society organisations and NGOs that may be further advanced in the area of gender.

c) Capacities for risk reduction and recovery identified and strengthened

Levels of Reliance:

Partial/ some reliance: Full acknowledgement of the issue; strategy/ framework for action developed to address it; application still not fully implemented across policy and practice; complete buy in not achieved from key stakeholders.

Description (Please provide evidence of where, how and who):

Complete a pending institutional review of the Department of Emergency Management, its 16 Standing Committees, to determine the levels of capacity required to carry out the assigned tasks.

Build a CDM capacity development policy and plan that begins at the community level and includes all levels to decision-makers.

Partner with training institutions such as the Barbados Community College, Samuel Jackman Prescod Polytechnic, and the University of the West Indies, to offer training modules in multi-hazard planning and management, ensuring that a cadre of persons is always available to the system for sustainability. Identify key partnerships with other countries with greater capacity in DRR in their institutions, and effect exchange programmes where feasible.

At the community level, work with the DEOs to train persons to respond appropriately to a series of hazards facing each community.

d) Human security and social equity approaches integrated into disaster risk reduction and recovery activities

Levels of Reliance:

Partial/ some reliance: Full acknowledgement of the issue; strategy/ framework for action developed to address it; application still not fully implemented across policy and practice; complete buy in not achieved from key stakeholders.

Description (Please provide evidence of where, how and who):

Prepare a complete inventory of vulnerable persons and groups, with an emphasis on identifying the weak elements of DRR which make that individual/group more vulnerable.

Plan a phased approach to addressing the weak elements of DRR which increase the vulnerability of marginalized and special needs persons in society.

Promote social equity through the DRR policy review process.

Align DRR strategies and plans with poverty alleviation strategies so that human security is integrated in

all DRR programming.

e) Engagement and partnerships with non-governmental actors; civil society, private sector, amongst others, have been fostered at all levels

Levels of Reliance:

Significant and ongoing reliance: significant ongoing efforts to actualize commitments with coherent strategy in place; identified and engaged stakeholders.

Description (Please provide evidence of where, how and who):

Sustain the already excellent relationships forged at every level with the private sector, civil society and the community through the following actions:

Building a strong, responsive coordinating body in the DEM that is able to show leadership in the face of disasters.

Build a culture of mutual trust and confidence in the non-Government actors, and develop public reward schemes that inspire and motivate partners to continue helping in the DRR system.

Identify innovative ways of including new non-state actors in all levels of the DRR implementation process.

Make roles and responsibilities very clear, especially when the emergency management system goes operational.

Promote the use of indigenous knowledge in hazard and risk assessments, instilling confidence in community actors to participate fully in DRR programmes.

f) Contextual Drivers of Progress

Levels of Reliance:

Partial/ some reliance: Full acknowledgement of the issue; strategy/ framework for action developed to address it; application still not fully implemented across policy and practice; complete buy in not achieved from key stakeholders.

Description (Please provide evidence of where, how and who):

Full-scale movement from response, relief and recovery, to 'real' disaster risk reduction efforts.

Educated policy makers that take account of DRR issues in every decision made.

Paradigm shift from the consultation end of the DRR co-management continuum, through consultation to delegation of key aspects of disaster management.

A strong, motivated public, aware of specific actions required before, during and after hazards to reduce their own personal and family risk levels.

Future outlook

Area 1

The more effective integration of disaster risk considerations into sustainable development policies, planning and programming at all levels, with a special emphasis on disaster prevention, mitigation, preparedness and vulnerability reduction.

Overall Challenges:

The disaster management programme in Barbados has been established with tremendous successes in preparedness and response and to a lesser extent to rehabilitation and recovery. However the paradigm shift to prevention and mitigation on a national scale is still very embryonic. The DEM is yet to establish a Hazard Mitigation Council and policy to promote greater fusion disaster risk reduction policies and programmes in a holistic way although individual agencies are working on specific DRR programme areas. A clear guideline on the integration process in sustainable development is required.

The Ministries of Finance, Economic Affairs and the Environment have all taken significant steps towards the incorporation of DRR into sustainable development policies and plans. However, the implementation of these aspects still remains too low a priority in terms of the allocation of funding.

Future Outlook Statement:

Considering the economic losses other countries have experienced from disasters in recent years, Barbados must employ rigorous methodologies to weigh the costs of DRR against savings from prevention measures rather than benefits. Once this type of trade-off is clarified for policy makers, then decision making with respect to DRR is more straightforward.

Area 2

The development and strengthening of institutions, mechanisms and capacities at all levels, in particular at the community level, that can systematically contribute to building resilience to hazards.

Overall Challenges:

The sheer size of the national emergency management system is not appreciated, and as a result, capacity to manage and maintain such a system is consistently short-changed. If the system is truly effective and improving then the number of partners must also increase, further challenging the ability of an already stretch coordinating agency to conduct its work.

Future Outlook Statement:

Capacity building should be more than a series of training programmes for current staff of the coordinating agency. It should encompass, within the medium term the following:

- An aware and educated public, responsible for their actions in relation to disasters, knowledgeable about responses.
- Partners in key economic sectors, such as tourism and agriculture, which understand the implications of non-action for their businesses and the economy as a whole, and are willing to be integrated as actors, in order to reduce their own vulnerability.
- Community-based organisations that have been trained to respond to the specialized needs of their community, and given the appropriate tools to assist them in meeting their DRR objectives.
- A strong coordination institution, with competencies commensurate with the DRR mandate, technology for decision support, and human resources capable of managing the national system ably.
- A functioning Standing Committee system that draws upon both public and private sector groups, with clear, legislated mandates and action plans for short and medium term.

- Continuous monitoring, evaluation and review of strategic action plans to ensure that a truly multi hazard system is in place, that covers all aspects of the disaster management cycle.

Area 3

The systematic incorporation of risk reduction approaches into the design and implementation of emergency preparedness, response and recovery programmes in the reconstruction of affected communities.

Overall Challenges:

Many organisations and individuals have not developed emergency preparedness plans. Those who have developed plans generally do not test the effectiveness of those plans outside of an emergency context.

It is not clear that the efforts of the private sector, NGOs and community organisations are fully understood or appreciated at the national level, and it is in the context of preparedness, response and recovery, that these organisations have traditionally functioned.

Future Outlook Statement:

Once hazard and risk assessment data is freely accessible by all stakeholders, the DEM as coordinating body needs to actively support the development of emergency plans across all sectors and areas, encourage communities to test their plans, and provide assistance in monitoring and evaluation when updates to plans are required. Government needs to set the standard, in ensuring that all of its own agencies and departments have plans in place, and allowing for periodic testing. Such activities will encourage the private sector to follow suit.

As more non-state actors join in the implementation of emergency preparedness, response and recovery plans, standards must be set for activities in these areas. Once these partners are willing to reach the standards set, a reward/incentive system should be established, as a motivator, so that gains in strengthening the national emergency management system, and implement disaster risk reduction, are not lost.

Stakeholders

Departments/organizations that have contributed to the report

- * Department of Emergency Management (Gov) - Ms. Judy R. Thomas
- * The Coastal Zone Management Unit (Gov) - Dr. Lorna Inniss
- * The Ministry of Economic Affairs (Gov) - Mr. Ronnie Griffith