

Cayman Islands

Interim national progress report on the implementation of the Hyogo Framework for Action

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Strategic goals 1

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:

Ensure policy development process is participatory

Disaster risk management to be integrated into all government policies and programmes and transposed to all public sector work programmes and to be financed by annual budgetary allocations.

Ensure that adequate financial resources are made available through the budget for implementation of policies and programmes by responsible public sector entities.

Integrate risk reduction into strategic and corporate plans at all levels of government, the private sector, economy and communities.

Develop adequate supporting legislation for disaster risk management structures, policies and programmes, and update existing partner legislation as necessary. (A first draft of the Disaster Preparedness and Hazard Management Bill, 2008 has now been produced.

Comprehensive Risk assessments will be conducted for all hazards including socio-economic impacts, to guide national development and the national risk reduction programme; become prerequisite for all development projects. This risk assessment and mapping will aid in the development of the required database that will be updated at regular intervals to capture changing risk patterns and emerging threats.

Ensure use of risk assessment maps integrated into national development at all levels and across all sectors and are freely available to the entire country.

Use of risk assessments inclusive of public dialogue to inform all housing, infrastructural, commercial/industrial developments for all areas.

Improve land use management through the use of hazard data base, risk assessments / mapping to inform decision-making through engagement between developers and planning authorities to create social and environmental sustainable developments.

Mitigation measures to reduce identified risk must be explicitly stated in all development applications and must be assessed by technical agencies prior to any final approval.

Position mitigation as the primary method of increasing resilience by integrating it into all facets of society (education curricula).

Ensure mitigation programmes aligned with risk assessments and prompt necessary review and update of codes and standards to meet emerging or changing threats

Establish indicators to track performance in mitigation/risk reduction.

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:

Institutions

Strengthen the risk management capacity of all sectors in Disaster Risk Management to enhance the development, implementation and integration of policies and mechanisms that will reduce vulnerability and enhance resilience. In achieving this, integration postulates that risk reduction must be incorporated into strategic and corporate plans at all levels of government, the private sector, economy and communities to reduce vulnerability and decrease recovery time through necessary preparedness and mitigation policies and measures. It is mandatory for all government entities to prepare and review annually a Continuity of Operations plan that addresses multiple hazards effect. This will enhance the recovery time for government and strengthen its resilience through better coping mechanism.

Community

Capture and develop local capacity in community teams and volunteers through training and development of community hazard management teams and NGO's network. The National Disaster Office strengthening the local capacity through mobilizing and organizing communities in enhancing their knowledge of the hazard threat and vulnerability; training in community disaster risk management; supporting responses to events in areas of preparedness (battening homes), damage assessment and relief. The programme is known as District Emergency Response Committees (DERC). This is complemented by partnership with Red Cross and other civic groupings in facilitation and initiation of community disaster risk management programmes and activities that all seek to enhance the preparedness and resilience of communities.

To further enhance / develop the coordination capacity of community participation and disseminate disaster risk reduction techniques a working committee is established to incorporate civic organizations and NGO's to pool resources and efforts to the national programme. This grouping is known as the Voluntary Agencies Disaster Committee.

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:

Develop adequate supporting legislation for disaster risk management structures, policies and programmes, and update existing partner legislation as necessary. (A first draft of the Disaster Preparedness and Hazard Management Bill, 2008 has now been produced. This will become the main legislation to entrench the functions and operations of the Disaster Risk Management Programme in law and gives HMCI the legislative authority to carry out its mandate) Simultaneously integrate risk reduction into strategic and corporate plans at all levels of government, the private sector, economy and communities. Necessary forums have been convened at the executive, legislative, administrative and operations level of government to articulate, train and sensitize to the policy direction and strategic overview of the National Risk Management programme. The development of procedures and processes in national plans that set guidance for coordination and assign roles and responsibilities for participating entities will improve coordination capacity and ability to respond and include mitigation and vulnerability reduction measures.

The development and implementation of a Strategic Framework for Disaster Risk Management for the Cayman Islands. This Strategic Framework is the key strategic tool for management of the hazards

which threaten the Cayman Islands. The Framework captures the vision for disaster risk management and will guide the national risk management programme. The Cayman Islands National Strategic Framework for Disaster Risk Reduction will be closely aligned to Hyogo Framework. The decision by the Government of the Cayman Islands to establish a dedicated office for disaster risk management is in keeping with Priority 1 of the Hyogo Framework - A strong institutional basis will also require establishment of legislation and appropriate policies for risk management.

Regional and International partnerships and exchanges will also be an integral part of the framework. In addition to other Overseas Territories, the Cayman Islands will establish partnerships with other Caribbean Territories and become members of Regional Organisations such as CDERA, and international organisations such as the International Strategy for Disaster Reduction, among others.

Legislation

There are number of laws that directly facilitate preparedness and response for any national emergency operations. These legislation includes the Emergency Powers Law (1997 Revision) as amended, the Police Law (2005 Revision) as amended, the Police (Emergency Powers) Regulations 2004, the Penal Code (2005 Revision), Public health legislations, legislation that applies to agricultural hazards that poses a public health risk and legislations that gives other government entities (Department of Environmental Health) the legislative and operational authority to respond and prepare for specific hazards and their effects (oil spills and other petroleum releases). Another example of implementing and incorporating mitigation for risk reduction is policy geared at building resilience in the land use and reconstruction. Planning approval is mandatory for all reconstruction activities

Priority for action 1

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

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

Description:

The development and completion of a Strategic Framework for Disaster Risk Management for the Cayman Islands - to have a holistic approach to disaster risk management that will seek to incorporate all sectors of society and governance in the planning, response and recovery for hazard events and also prioritizes areas that should be addressed to support and ensure sustainability of the National development plan

The establishment of a dedicated office for Disaster Risk Management - to have a coordinating entity for all hazards and risk management efforts of the country.

Financing - dedicated budget for Risk Management administered through the National Disaster Office.

The implementation and positive results from local (community) capacity building initiatives within the communities and in partnership with NGO's Red Cross.

The heightened awareness of the vulnerability to the impact from multiple hazards by entities that participate in the National Disaster Risk Management mechanism. This is observed in the development of these entities Continuity of Operations Plan.

Research to inform Disaster Risk Management - preliminary Vulnerability Assessment, Storm Surge Modeling, implementation of seismic stations as a part of the Caribbean Tsunami Early Warning systems.

Mitigation - Support Structure Enhancement - the retrofitting of shelters to withstand category three and upwards effects from hurricanes and improvement in their capacity to be self sufficient after events for lengthier periods.

The enhancement of monitoring - implementation of weather stations across the country to provide more data at specific locations.

Acquisition of software to improve the coordination mechanism of the national disaster organization.

Context & Constraints:

One of the key challenges facing the Cayman Islands is enforcement and the ability of government entities to keep pace with development especially in environmentally sensitive areas.

Rationalization of planning laws and monitoring of implementation.

Prior to the year 1986, Government or Crown land extended up to the vegetation line. Then the planning law changed and private land ownership now extends to the high water mark. Grand Cayman and Little Cayman in particular are low lying (in many areas). With the increased hurricane activity over the past decade and rising sea level, it is increasingly obvious that a lot of the coastal development has occurred too close to the water's edge.

The problem is further compounded by the fact that on beach environments the seaward boundary is flexible as accretion and erosion occurs.

The Development Plan and planning regulations are in the process of being reviewed and revised but there may be public resistance to legislation that diminishes the ability of landowners to develop valuable coastal property. Acceptance of the new plan is important to ensure protection of future developments from coastal flooding and sea level rise effects.

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

Description:

A. National Budget Allocation

Government has funded the office, staff and programs of Hazard Management Cayman Islands.

There is also a budget allocation for the preliminary phase of the construction of the new National

Emergency Operations Centre.

A new C.I. \$85 million Government accommodation building is being constructed with a projected life span of 65 years. The building will be constructed to resist hurricanes and earthquakes, and with the first floor at a level of 14.6 feet, it will also be highly resistant to flooding.

The five-storey building will feature 185,000 square feet of air-conditioned space, plus an underground parking structure and a service deck. The building is being constructed to LEED specifications to make it environmentally friendly and energy efficient. The office building is scheduled to open in January 2011. This will replace the Tower Building which was severely impacted by Hurricane Ivan in September 2004 (and subsequently abandoned and knocked down) and the current Government Office Building (the Glass House) which was built in 1974-1975, before Cayman had a building code.

B. Cayman Islands National Archive:

The Archive has a comprehensive document management plan that includes the removal and safe storage of Government documents and records across many departments, ministries, authorities and agencies when the nation is facing imminent threat of impact from a major hurricane. Hurricane Ivan provided many opportunities for learning through experience and the Cayman Islands is better prepared to preserve and restore water (flood)damaged documents and records.

All public authorities are in the process of implementing a records management system that involves identifying vital records. This process is expected to be complete by January 2009.

C. The Health Services Authority (HSA):

Like many other Government entities, the HSA has its own disaster response plan. This plan is tested in annual disaster exercises. Last year the simulated exercise revolved around a plane crash and a private hospital was included in the drill.

D. Emergency Generators:

A comprehensive programme of increasing the resilience and capacity of back up emergency power generation has been conducted across the range of Government institutions. The pads (on which the generators sit) have been elevated in instances where they were vulnerable to flooding and hurricane related storm surge.

E. The shuttering of government buildings:

Every year the Public Works Department practices shuttering Government buildings. In addition Government buildings that previously did not have shutters have now been retrofitted to include them.

F. Road Network Storm Defense System:

Government has embarked on a program of protecting vulnerable and critical coastal road corridors with sea walls. These walls are over a foot wide and include concrete and steel sheeting.

G. New Schools, Civic Centres and other Government Buildings:

Government has increased available shelter space by over 50 percent since the passage of Hurricane Ivan and the shelters are now equipped with emergency power and water.

Context & Constraints:

Government tries to appropriately balance risk reduction strategies within existing budget constraints.

New shelters are being built to withstand category five hurricanes however a number of older shelters are still rated to category three only.

Following Hurricane Ivan a number of schools were damaged and this affected normal scheduled classes. While more resilient new schools are in the process of being constructed, a number of the older establishments remain vulnerable and regular classes may once again be disrupted.

Cayman is a relatively small country and budgetary considerations do not permit a full scale burn unit which may be necessary in the event of certain disasters that are associated with fire.

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

Description:

District Emergency Response Committees

Community participation is occurring in every district in the Cayman Islands with the establishment of the Cayman Islands District Emergency Response Committees (DERCs). These volunteer groups receive training in shelter management, initial damage assessment, first aid, basic search and rescue as well as fire suppression skills. The individual groups meet at least on a quarterly basis and activate in a disaster or when the Islands are threatened by a hurricane. The DERCs are expected to assist with initial response in a disaster situation and they are ideally positioned to do this because they are perhaps most keenly aware of the needs of the district and vulnerable people in their own community. They also assist with a Government funded community shuttering program, whereby Government purchases plywood boards which the DERCs then cut and install for members of the community who for reasons of age, infirmity, financial constraints or lack of family support, are unable to protect their property with their own resources.

Volunteer Agency Disaster Committee

Hazard Management Cayman Islands has strengthened its relationships and formalised arrangements with civic groups, service clubs and agencies such as the Cayman Islands Red Cross, Rotary and the Lions Club. Church groups including ADRA have also been incorporated into plans and form part of the 'human concerns' cluster of the Disaster Plan.

The Sister Islands of Cayman Brac and Little Cayman are fully in charge of their hazard management programmes, and have the authority and capacity to respond to situations on those islands immediately. The Sister Islands also have their own development plan.

Context & Constraints:

On the subject of decentralization of responsibilities and capacities: Some good progress is being made in this area, however a fair amount of attrition occurs in volunteer groups and district emergency response committees. Recruiting and maintaining the commitment and interest of volunteers is an ongoing challenge.

Core indicator 4

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

Level of Progress achieved:

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

Description:

The Cayman Islands National Strategic Plan 1998 - 2008 calls for the establishment of a National Emergency Management Agency. In January 2007 Hazard Management Cayman Islands (HMCI) was formed. The agency has developed a National Disaster Risk Management mechanism and strategies to include all levels of governance. Within this mechanism HMCI has overall responsibility for the implementation of the National Hazard Management programme and acts as a coordinating point for prevention, preparedness, mitigation, response, recovery and rehabilitation.

The national structure that facilitates the mechanism establishes a National Hazard Management Executive and Council and also an emergency response structure.

The National Hazard Management Executive is a policy orientated group that reviews the progress of the national disaster risk management programme, makes decisions related to national policy, provides strategic and policy guidance for regulatory, financial, economic and foreign affairs.

The National Hazard Management Council develops hazard and emergency management policies, discusses economic, political, legal and social implications of both the threat and the response to determine the best strategies for action. It also provides guidance for the NHMC Executive, reviews policy documents and reviews and approves operational plans. The Council includes all Permanent Secretaries, heads of government agencies and departments, Commissioners of the Police and Fire departments, the private sector and NGOs.

The Emergency Response Structure consists of seventeen (17) functional area subcommittees that forms five clusters within the National Emergency Operations Centre (NEOC). These 17 subcommittees are active throughout the year convening periodic meetings to develop, review and evaluate their respective functional emergency response plans, processes and resources. During times of emergency response these subcommittees are activated.

The National Emergency Operations Centre (NEOC) has been continuously updated and improved and the crisis management tool WebEOC is now being used to provide a timely and effective disaster response. To enhance the operational capacity and capabilities of the NEOC C.I. \$1 million dollars was included in the annual budget for the first phase of construction of a new category five hurricane rated National Emergency Operations Centre building. The structure is expected to be finished and operational within three years and will be able to house critical support infrastructure for the National Meteorological Service and other key functions.

Context & Constraints:

There are some 'growing pains' associated with the establishment of a new disaster plan, a new authority in the form of Hazard Management, new technology and new ways of doing things. This transition is proving more challenging for some of HMCI's strategic partners that it is for others. However, recent experiences in the form of a disaster drill and 'near misses' from two hurricanes have enabled HMCI and its partners to practice, gain familiarity with and therefore, confidence in their ability to respond to threat.

Priority for action 2

Identify, assess and monitor disaster risks and enhance early warning

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

Description:

Government has commissioned a hazard vulnerability assessment and the results are expected to be presented shortly.

A national assessment of living conditions has been completed and this is helping to inform decision makers. It is also providing valuable data on vulnerability factors related to economic issues among the lower income population.

Storm surge modeling is complete and includes a comprehensive survey of the coastline, including the seabed and inshore area to a depth of 20 feet.

A Geographical Information System based property valuation system has been produced, which when used in conjunction with the storm surge modeling data will provide loss projection modeling and statistics.

Sea level rise modeling maps have been produced by the Lands and Survey Department.

Context & Constraints:

Hazard Management Cayman Islands has only been established for a year and a half and are in the process of implementing an all hazards approach. As a result the work is still in progress to achieve these results.

Core indicator 2

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

Level of Progress achieved:

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

Description:

Storms. The Cayman Islands National Meteorological Service monitors and documents weather systems such as hurricanes, floods and severe storms affecting the Cayman Islands.

The country is considering acquisition of a Doppler radar device.

The Cayman Islands National Weather Service enjoys a good relationship with experts at the National Hurricane Centre in Miami and when the country is threatened by a tropical cyclone there is regular communication.

Earthquakes. Government has commissioned a seismic monitoring network, consisting of four state of the art seismograph stations. Two in Grand Cayman, one in Little Cayman and another on the Island of Cayman Brac.

Tsunamis. Plans are now in place for the establishment of a Caribbean-wide tsunami warning system and the Cayman Islands expect to play a part in that effort. The Caribbean tsunami warning system should be operational by 2010. A network of seismographs is being established for the Caribbean region and this is part of a global project being run by UNESCO's International Oceanographic Commission.

Pandemics / Epidemics. The Mosquito Research and Control Unit (MRCU) is responsible for monitoring and control of vectors. Neither Malaria, nor Dengue Fever are endemic to the Cayman Islands. MRCU issues regular public releases advising members of the public to clear all standing water around their houses and workplaces and to reduce areas for the mosquitoes to lay their larvae.

A plan under the auspices of the Public Health Department has been developed for Avian Influenza (H5N1) and a committee formed to oversee national contingency arrangements. The plan addresses the health sector response (surveillance, quarantine, treatment). Work still needs to be done on finalizing the national level implications and corresponding requirements in areas such as public awareness, security, containment and immigration.

Ministry of Agriculture is responsible for monitoring and control of pests and animal diseases.

Dissemination to the public is the responsibility of Government Information Services, with each organization being responsible for the technical content. Every Authority must maintain and keep records for a specified period as mandated by the Freedom of Information law and publishing requirements come into effect January 2009.

Context & Constraints:

Further work will be done on disseminating information about the threat to life posed by earthquakes, using the media, distributed printed material and public outreach into schools etc.

Additional public information could reduce the risk of a local pandemic occurring in the future. This might include additional information about the threats and symptoms of mosquito borne illnesses, the threat posed by travel to certain regional locations during outbreaks and strategies for preventing mosquito bites with mosquito nets and insect repellents. Public information about prophylactic drug treatments to reduce the risk of infection by the malaria parasite could be targeted at those traveling to countries with endemic malaria.

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

Description:

Risk knowledge is very high for hurricanes and HMCI is working to increase the knowledge of the public in terms of other hazards.

National monitoring and weather services include the National Weather Service, Public Health, Department of Agriculture, MRCU, the seismograph network through HMCI.

A number of agencies are involved in disseminating information about hazards and vulnerabilities:

Hazard Management Cayman Islands employs a full time Communications Officer with responsibilities that include public awareness.

Several annual hurricane handbooks are produced and widely distributed.

HMCI establishes information booths at many public events and answers questions and distributes informational material.

The Agency has a regularly updated website, www.caymanprepared.gov.ky, which has useful data on the full range of potential disasters and includes mitigation strategies and ways of preparing for a possible disaster.

Public outreach is part of HMCI's strategy and involves speaking to volunteer organizations, schools, civic groups, churches, business organizations and clubs etc.

Relevant information about threats and disasters is also archived and a concerted effort is underway to make as much information available as possible. Publishing requirements are included in the Freedom of Information Legislation, which has been adopted in the Cayman Islands and which becomes operational January 2009.

Government Information Services (GIS) also plays an active role in disseminating hazard specific information.

During times of an approaching or actual threat from a disaster the Joint Communications Service becomes operational and has responsibility for disseminating information to the public, as well as specific sectors such as visiting tourists, the financial services, airports authority etc.

HMCI and GIS have established relationships with print and electronic media in the Cayman Islands and systems are in place to distribute information broadly and rapidly when the need arises.

Text messaging software is used to send mass messages before, during and after a threat.

Senior staff at HMCI and various representatives from partner agencies make frequent contributions in the form of interviews etc. to local television, radio and newspapers.

Screens in supermarkets also disseminate information on precautions and any threats facing the country.

Context & Constraints:

One of the biggest challenges is to make sure that messages get to virtually the entire population and get to them quickly in times of threat. Government has their own radio station and websites, but the television station and newspapers are privately owned, so it is important to have good ongoing relationships with the media to ensure that messages get broadly disseminated.

Currently there is no established method of instantly placing warnings and crawling text on television channels. The existing mechanism has an approximately 30 minute lag time. It would be useful to establish a rapid public warning system, but the technology does not presently exist at the local television centre. Ongoing negotiations with the television centre may help to establish this useful public service facility.

Hurricanes are by their very nature somewhat unpredictable. When facing a threat HMCI has a responsibility to make the public aware and mobilize the nation to take precautionary measures to protect life and property. Bracing for disaster takes effort and costs families, individuals and businesses money. Sometimes the threat does not materialize (the country and people are spared) and that heightened level of readiness may be viewed as not having been necessary. If this occurs too often the public may be inclined to get complacent, or start to ignore public warnings. There is therefore a constant balance between maintaining the necessary level of readiness whenever impending disaster is possible and guarding against creeping complacency.

A balance also needs to be struck between too much disaster related information and not enough. Making sure the necessary disaster related messages are effectively conveyed to the people is critical, however overwhelming the public with a constant stream of disaster related information could cause fatigue and people may start ignoring crucial messages.

Certain threats carry a fairly low probability of actually occurring, like a damaging earthquake or tsunami, yet they both have potentially devastating consequences if they do occur. Getting the public to 'buy in' to the need to prepare for unlikely, but conceivable threats poses challenges.

Both local and overseas media organizations can occasionally 'over dramatize' a threat so there is sometimes a need to balance information and correct misinformation.

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:

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

Description:

The Cayman Islands are part of the regional seismic monitoring systems for hurricane and earthquakes and expect to part of the Caribbean Tsunami Warning System (TWS) when it becomes operational in 2010.

The Cayman Islands National Weather Service has an established relationship and good lines of communication with the National Hurricane Centre in Miami about hurricanes threatening or impacting the country.

The Cayman Islands are part of the Overseas Territories Network and as an associate member of CARICOM, we expect to join CDERA, (Caribbean Disaster Emergency Response Agency).

The Cayman Islands has established a relationship with the Caribbean Community Climate Change Centre in Belize. The Centre is now putting together a draft strategic plan which will include adaptive measures for the Caribbean and give a clear understanding of the anticipated impacts on critical sectors.

The Cayman Islands uses a standardised format for damage assessment reports (The United Nations Economic Commission for Latin America and the Caribbean ECLAC).

A sophisticated weather and oceanographic monitoring station is being installed off the coast of Little Cayman. The installation is a joint project between the US National Oceanic and Atmospheric Administration and the Central Caribbean Marine Institute. NOAA chose Little Cayman as one of four international locations for the station because its isolation and low population make it an ideal location to continually measure temperature, winds, barometric pressure and ultraviolet and photo-synthetically active radiation in a shallow coral reef environment. The data is expected to give the world a unique insight into how climate change is affecting coral reefs, as well as provide Cayman with better information on storm threats. The information should also provide insight about how changes in the ocean and atmosphere are affecting fish and coral populations and how longer term climate variability may be resulting in real changes in the coral reef structure and community. Once operational, the station

will transmit data in real time to NOAA, which will make the information available to the public through its website. The Cayman Islands Department of Environment, which has assisted with the station's installation, also plans on making use of the data, as do other government agencies.

The proposed Cayman Islands Disaster Legislation follows the format commonly used in the English speaking Caribbean.

Hazard Management Cayman Islands will make its documentation available on its website.

Context & Constraints:

Cayman does not currently have the budget capacity or economies of scale to warrant the establishment of its own major scientific research establishments and universities. As a result, Cayman should continue to encourage and cultivate strategic partnerships with regional seismic networks, the Caribbean Community Climate Change Centre in Belize and the US National Oceanic and Atmospheric Administration and the University of the West Indies. Work should be done to ensure that the findings of such research are widely available to other countries in the region so a cooperative information sharing environment can be fostered.

Once the National programme is fully established and operational, the Cayman Islands will work to provide data and information to regional networks such as UWI Mona Campus, CDERA and PAHO etc.

Priority for action 3

Use knowledge, innovation and education to build a culture of safety and resilience at all levels

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:

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

Description:

Information about disasters and protection options is available on Hazard Management's website, as well as through narrowcasting network including screens in supermarkets.

Flood maps have been produced and are available at the Lands and Survey Department.

Hurricane Awareness Kits are produced by Government and are widely available, including from the HMCI website.

Public awareness campaigns include the use of print, radio and television.

Outreach targets schools, church groups, voluntary organizations, civic clubs etc.

An informational activity booklet is produced for children under ten years old and is broadly distributed in schools and at public events.

A number of supplements and magazine publications are produced and in most cases, are provided at no cost.

Context & Constraints:

Work still needs to be done to inform the public about disaster risks that carry a low probability of occurrence, such as earthquakes and tsunamis.

Core indicator 2

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

Level of Progress achieved:

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

Description:

This program is just starting. Discussions are now underway to get risk reduction and recovery incorporated into the education system.

Context & Constraints:

The key contextual challenge is that prior to January 2008 there was no full time office dedicated to risk reduction.

Public Awareness efforts focused mainly on hurricanes.

Core indicator 3

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

Level of Progress achieved:

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

Description:

Started with the storm surge mapping and will include other hazards over time.
The multi-risk approach is now being incorporated.

Context & Constraints:

Some of the research that is needed is unlikely to be conducted locally because a certain amount of reliance will be placed on regional research institutions and expertise.

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:

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

Description:

A number of agencies are involved in disseminating information about hazards and vulnerabilities:

Hazard Management Cayman Islands employs a full time Communications Officer with responsibilities that include public awareness.

Annual hurricane handbooks are produced and widely distributed.

HMCI establishes information booths at many public events and answers questions and distributes informational material.

The Agency has a regularly updated website, www.caymanprepared.gov.ky which has useful data on the full range of potential disasters and includes mitigation strategies and ways of preparing for a possible disaster.

Public outreach is part of HMCI's strategy and involves speaking to volunteer organizations, schools, civic groups, churches, business organizations and service clubs etc.

Government Information Services (GIS) also plays an active role in disseminating hazard specific information.

During times of an approaching or actual threat from a disaster the Joint Communications Service becomes operational and has responsibility for disseminating information to the public, as well as specific sectors such as visiting tourists, the financial services, airports authority etc.

HMCI and GIS have established relationships with Print and Electronic media in the Cayman Islands and systems are in place to distribute information broadly and rapidly when the need arises.

Text messaging software is used to send mass messages before, during and after a threat.

Senior staff at HMCI and various representatives from partner agencies make frequent contributions in the form of interviews etc to local television, radio and newspapers.

Context & Constraints:

HMCI is developing its communication strategy into a more planned and strategic model covering the range of disasters that could potentially affect the Cayman Islands.

Priority for action 4

Reduce the underlying risk factors

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

Description:

The revision of the National Development Plan takes into account national development issues such as coastal setbacks.

The Draft Environmental Legislation addresses a number of issues relating to protection of natural resources.

Draft Hazard Management Legislation addresses especially vulnerable areas such as wetlands and areas prone to flooding.

A climate change working group has been formed. Climate change policy will address disaster risk reduction issues and sustainability.

Context & Constraints:

Many of these issues are medium to long term mitigation and risk reduction strategies and it is hard to get the public to accept these things as being of immediate importance.

The challenge is not with the technical and scientific agencies; they accept and appreciate the need for action. The challenge is communicating the need to balance present development requirements with the future cost of inaction.

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

Description:

Government is trying to encourage additional agriculture and has recently established an agro-tourism initiative called 'Market at the Grounds.' The Market Place has been heavily promoted by Government Information Services and is generating additional interest in locally grown produce and farming.

Cayman signed on and contributed to the CCRIF Caribbean Community Risk Insurance Fund.

The National Recovery Fund has been rebuilding and renovating homes that were damaged in previous hurricanes at zero cost. Owners of these had no insurance. The homes are built to standards of the building code and include hurricane shutters.

Food and water is reserved for the Government at the wholesale outlets of the large supermarkets prior to the approach of a hurricane.

There is a social safety net provided by the Department of Children and family Services, which includes financial assistance for the needy.

Temporary housing was provided for those displaced and left homeless following Hurricane Ivan.

The new highways are being constructed away from vulnerable coastal areas and existing coastal roads are being protected by sea walls.

Public Health offers a wide range of services and health insurance is mandatory.

Context & Constraints:

Challenges relate to developments that pre-date the planning law and building code.

The topography of the country presents a challenge in that many areas are extremely low lying. Significant amounts of development have occurred in flood prone zones and locations that are vulnerable to storm surge. Approximately 80 percent of homes use the septic tank system rather than mains sewerage which is only currently extended to parts of George Town and the Seven Mile Beach

zone. There is no Government controlled system of ongoing inspections for septic tanks, so it is likely that a percentage of these septic tank systems are operating inefficiently (or not as effectively as they should be operating).

Core indicator 3

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

Level of Progress achieved:

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

Description:

The Cayman Islands Monetary Authority requires Class A licensed financial institutions to have continuity of operations plans and these are also required for all Government entities. Private sector entities are encouraged to adopt this strategy as well.

The business community is encouraged to conduct risk assessments through public awareness campaigns.

Government assets are insured and there is a Risk Management Unit that develops and implements loss control programmes to minimize the various risks faced by Government entities.

Government has set aside prudent reserves of in excess of 70 days operating expenditure in the event of a disaster.

Government buildings have shutters and generators and meet the standards of the National Building Code (US).

There is a high level of insurance in the country for commercial assets and infrastructure.

The majority of businesses have taken steps to prepare for disasters. Shutters are widespread, hurricane rated glass is common. Generators are elevated on concrete pads. Prior to a hurricane the vast majority of businesses already recognize the need to protect computer hard drives and vital documents. Companies have sprung up since Hurricane Ivan that offer data protection and storage. Brac Infomatics is a licensed data and disaster recovery centre that offers a wide range of business continuity solutions. There are several risk management companies on Island.

The Chamber of Commerce, which advocates for many private businesses, is involved in National Disaster Plans and has a role in preparedness, mitigation, response and recovery efforts through the Economic Continuity Subcommittee. The Chamber is a member of the National Hazard Management Council.

Context & Constraints:

Business costs are associated with preparedness, mitigation, response and recovery efforts for disasters. These may be unnecessary in locations less prone to disaster, so this presents a business challenge to the competitiveness model of the country. At some point it may be necessary to identify creative strategies and mechanisms to ensure Caymanian companies maintain a competitive advantage in the global financial services market place.

Companies whose 'continuity of operations' plan includes (temporary) re-location to another jurisdiction following an event (impact) may become less 'anchored' to the Cayman Islands. Partially for this reason

a certain amount of labour 'outsourcing' has resulted since Hurricane Ivan.

Core indicator 4

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

Level of Progress achieved:

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

Description:

The Cayman Islands adopted the Southern Building Code (U.S) in 1995 and it is rigorously enforced for new developments. The Building Code mandates homes and offices have suitable means of egress for evacuation purposes. Many properties are fitted with fire alarms and have fire suppression equipment.

Electrical building inspectors conduct field inspections to ensure that electrical installations and electrical components comply with the standards contained in the National Electrical Code and Electrical Law and Regulations. New electrical application drawings submitted for approval are reviewed to ensure that they meet standards.

The Builder's Law (2007) which has passed (but not fully activated as yet) requires that contractors are licensed and obtain a minimum C.I. \$1 million in liability insurance. The law requires both construction businesses and their employees to register with the Builders Board, New road infrastructure is built five feet above Mean Sea Level thus reducing potential risks associated with flooding in natural disasters.

The Petroleum Inspectorate closely monitors installations and fuel storage areas that handle petroleum products and most service stations currently employ the 'Veeder Root' system which offers vapor-recovery and leak detection devices. All new installations for above and below ground fuel tanks must be UL listed or equal and must be installed according to NFPA 30 and 39A.

Vehicles that transport bulk petroleum products are required to come completely off main arterial roads when dispensing fuel. Esso and Texaco service the Cayman Islands as the wholesale suppliers and they both espouse a safety-first ethic and work environment.

Companies that store dangerous substances are required to conduct emergency drills.

Home Gas Ltd. is currently the sole provider of propane gas. The company operates a Liquid Petroleum Gas (LPG) bulk storage facility close to one of the main school districts on Walkers Road, in the capital George Town and there is also one on the Island of Cayman Brac. The installations comply with all aspects of the adopted National Fire Protection Association Standards. Home Gas Ltd. has the capacity to store 210,000 gallons of propane in above ground storage containers and a further 540,000 gallons of propane can be stored underground in buried tanks. These buried tanks are enclosed in concrete walls which are then backfilled with quarried sand and aggregate, providing two feet of protective insulation. Fire protection systems at the sites have been upgraded and the new buried installations comply with the American Petroleum Institutes API-2510 requirements.

All buildings must get approval from the Planning Department, and regular inspections are carried out during construction.

Context & Constraints:

Properties constructed under the requirements of the Southern Building Code are rated to a category three hurricane. The Cayman Islands remain vulnerable to impact from hurricanes of categories four and five. Increasing the standard of the Building Code to require new developments to meet or exceed the impact of a category five hurricane could cause building costs to become prohibitively expensive.

There are some ongoing problems with the improper use and storage of small LPG cylinders offsite from the wholesale gas distribution sites but Home Gas Ltd. has conducted some public awareness campaigns and have liaised with the Fire Services Department to upgrade premises and private dwellings not in compliance with the fire protection standards. There are a number of independent contractors who install gas appliances and some of this work has been identified as below standard, however Home Gas Ltd. recently brought down an instructor who conducted a week long course to train contractors. Those that successfully completed the training obtained a gas fitters license. The use of gas is almost exclusively confined to pressurized cylinders and is not piped underground as is common in some countries. Following the passage of Hurricane Ivan it is believed a number of cylinders were washed away from private homes and may have ended up on raw or undeveloped land. These cylinders pose a small but potential risk if they are handled improperly as they deteriorate with time.

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

Description:

Enforcement of the building code during the post Hurricane Ivan reconstruction period improved the resilience of the building stock. Many building owners voluntarily exceeded code requirements.

Risk reduction measures are integrated in The National Strategic Framework and National Recovery Plan .

Context & Constraints:

With the increase in insurance premiums after Hurricane Ivan, some householders have opted not to insure.

There is no planned retrofit programme for older structures.

Core indicator 6

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

Level of Progress achieved:

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

Description:

The National Conservation Bill has been written and is awaiting debate in the Legislative Assembly. This new legislation provides the framework for environmental impact assessments. Key elements of the legislation include the establishment of a National Conservation Council, which will be responsible for the proper administration of the law. The Council will consist of representatives of various government agencies, private sector organisations and members of the public. The new law also provides

mechanisms for the nomination, designation and management of protected areas and species.

A Sustainable Development Unit has been developed within the Department of Environment (DoE), whose primary focus is to guide the creation and implementation of a National Sustainable Development Strategy (NSDS). The NSDS has four priority policy areas: sustainable consumption and production; climate change and energy; natural resource protection; and sustainable communities.

The Central Planning Authority (CPA) can request that an Environmental Impact Assessment be performed when considering an application.

This is an area in development.

Context & Constraints:

Work is ongoing to further develop capacity in this area.

Currently impact assessments are rarely demanded by the CPA, except for some large projects and are limited in scope, typically focusing on environmental considerations.

Significant national infrastructure issues include:

The 71 acre landfill site in Grand Cayman (which is unlined) may be leaching harmful substances into the surrounding soil and water. The current annual rate of trash added to the 900,000 ton landfill is 167,170 tons, based on a daily rate of 458 tons. A 'Waste to Energy' plant is planned but is at least two years away from becoming operational.

Mains sewerage is limited to a small part of the Cayman Islands. A major capital outlay is required to extend the service across the country and there are ongoing budgetary constraints.

Priority for action 5

Strengthen disaster preparedness for effective response at all levels

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

Description:

Hazard Management Cayman Islands currently has a staff compliment of 8 full time workers. These positions are funded by the Cayman Islands Government.

The agency has developed a National Disaster Risk Management mechanism and strategies to include all levels of governance. Within this mechanism HMCI has overall responsibility for the implementation of the National Hazard Management Programme and acts as a coordinating point for prevention, preparedness, mitigation, response, recovery and rehabilitation.

The national structure that facilitates the mechanism establishes a National Hazard Management Executive and Council and also an emergency response structure.

The National Hazard Management Executive is a policy orientated group that reviews the progress of the national disaster risk management programme, make decisions related to national policy, provide strategic and policy guidance for regulatory, financial, economic and foreign affairs. The Executive includes the Governor (Chairman), Leader of Government Business, Leader of the Opposition, Chief Secretary, Attorney General, Financial Secretary, Deputy Chief Secretary and other members appointed

by the Governor.

The National Hazard Management Council is an operational group that develops hazard and emergency management policies, discusses economic, political, legal and social implications of both the threat and the response to determine the best strategies for action. It also provides guidance for the NHMC Executive, reviews policy documents and reviews and approves operational plans. During the period of response the grouping is responsible for Ministry/Portfolio EOCs and continuity of operations for Portfolios/Ministries and provides support for the NEOC. The Council includes all Permanent Secretaries, heads of government agencies and departments, Commissioners of the Police and Fire departments and the Red Cross.

The Emergency Response Structure has absorbed the former National Hurricane Committee and its subcommittees. The structure is as such that they are seventeen (17) functional area subcommittees that forms five clusters within the National Emergency Operations Centre (NEOC). These 17 subcommittees are active throughout the year convening periodic meetings to develop, review and evaluate their respective functional emergency response plans, processes and resources. HMCI is the secretariat for all subcommittees. During times of emergency response these subcommittees are activated for call out to assemble at the NEOC within the five operation clusters - operations, support services, emergency response, human concerns and infrastructure.

The National Emergency Operations Centre (NEOC) has been continuously updated and improved and the crisis management tool WebEOC is now being used to provide a timely and effective disaster response. This computer software is used to report, track and respond to an incident during an emergency and allows many different groups to simultaneously access and share information. The web based programme is now widely used in Emergency Operations Centres (EOC) around the world. To enhance the operational capacity and capabilities of the NEOC C.I. \$1 million dollars was included in the annual budget for the first phase of construction of a new category five hurricane rated National Emergency Operations Centre purpose built building. The structure is expected to be finished and operational within three years and will be able to house critical support infrastructure for the National Meteorological Service and other key functions.

There are 17 disaster related subcommittees that are activated in time of need and these are organised in five clusters.

Context & Constraints:

Hazard Management Cayman Islands is a relatively new authority and there are some issues relating to transitioning to the new all hazards approach and methodology.

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

Description:

All Government entities are mandated to produce a continuity of operations plans which they are complying with.

All government departments have a hurricane preparedness plan.

There are procedures in place (within Government) to protect computer equipment and vital records

when facing the threat of a hurricane.

A number of national disaster plans have been completed including:

The National Hurricane Plan.

Cayman Islands Relief Management Plan

National Recovery Plan

Oil Spill contingency plan

Civil Aviation has a number of plans including an evacuation plan (for tourists and residents leaving prior to hurricane impact), aircraft incidents plans and there are requirements to perform drills on a bi-annual basis.

Port Authority Mass Casualty Plan.

Contingency Plans are in place for the Agriculture Sector.

Health Services Authority has a mass casualty plan and plans to deal with pandemics.

Major multi-agency disaster drills take place on an annual basis.

Context & Constraints:

Additional plans are in the process of being developed as the Cayman Islands adopt a multi-hazard approach.

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

Description:

The Government has prudent reserves of at least 70 days of operating expenditure.

Government assets and infrastructure are insured.

There are well developed plans for contingency and recovery programmes and a number of sub committees have been assigned roles.

There is a hurricane emergency fund managed by Government.

The country is a member of the Caribbean Catastrophic Risk Insurance Fund.

Context & Constraints:

One of the most important sectors of the economy is tourism. This sector may be slow to recover from a significant impact. It may be useful to look at additional strategies for diversifying the economy.

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

Description:

Communications system is multi-layered with excellent resilience, including buried fibre-optic video conferencing links, satellite phones and satellite internet capability, 800 MHz radio systems, mass text mailing capacity, narrow-casting network, emailing systems including Blackberry network, web-enabled computer-based Incident Management System

Post-impact assessment procedures in place including fly-over.

Automated weather stations are on website and can be accessed by the public. These give temperature, wind speeds etc.

Cameras are in place at different points on-island and can be accessed from the National Emergency Operations Centre.

There is an established mechanism to brief all levels of Government (from executive to legislative and administrative). This is facilitated through the National Hazard Management Council and its executive.

Context & Constraints:

All technology is vulnerable.

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?:

No

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

Recognition exists that the multi-hazard approach is appropriate and is now being implemented through the strategic framework.

Communication exists at all levels with partner agencies to emphasize the need to expand the scope of hazard impact and vulnerability approaches to encompass a range of hazards (natural and man-made).

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

The issue has been identified and is taken into consideration in shelter management and relief distribution, however the subject is covered in the strategic framework and additional development is underway.

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):

Institutional capacity strengthening is being addressed through training and collaboration with groups such as PAHO and the Caribbean Community Climate Change Centre (CCCCC).

Skills development and training is a core goal of Government and a Civil Service Training College has been established.

Officers from Fire, Police, Department of Environmental Health (and other entities) are sent to overseas training programmes where the training is not available locally.

Acquisition of resources such as WebEoc, First Responder equipment, Emergency Management Mutual Aid (EMMA)

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):

Plans provide for the community groups to have a voice in recovery planning

The plans, policies, procedures that have been developed are impartial and prioritized towards the vulnerable population.

Damage Assessments are conducted to identify the areas of heaviest impact / dislocation and most pressing need, and resources are then directed to those areas in the event of a disaster.

Applications to Children and Family Services are prioritized towards those in genuine need.

Economic Vulnerability Assessment has been conducted in an attempt to identify the most vulnerable.

The National Recovery Fund is accessible to those persons who have inadequate financial support systems to replace, repair or restore damaged residences.

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):

This has been established through the National Hazard Management Council through a subcommittee that incorporates civic groups, the Red Cross, faith based groups, service clubs etc. The group is named the Voluntary Agency Disaster Committee and it facilitates planning, response and the pooling of

resources and initiatives, for the National Risk Management Programme. There is also collaboration with this group for community capacity strengthening.

The private sector is integrated into the national risk management mechanism through the creation of the Economic Continuity Subcommittee. This subcommittee ensures that the business community has active participation in the planning and response to hazards that threaten / affect the Cayman Islands. They are encouraged to participate at the national and community levels. The private sector also partners in preparedness activities such as simulation exercises and preparedness programmes for schools.

District Emergency Response Committees have been created all across the Cayman Islands. These Committees are part of the risk management structure which allows for articulation of preparedness and mitigation level concerns from the communities. This committee is integral in the response at the local level assisting the damage assessment process and relief distribution. They will also play a role in the reconstruction phase.

f) Contextual Drivers of Progress

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):

Institutional capacity strengthening at all levels.

Continuous physical infrastructure improvement in capacity of shelter space and resilience of critical infrastructure buildings. All new Government buildings are being constructed at category 5 rating.

Political will is reflected in the fact that a dedicated and funded Hazard Management Agency has been formed. Adoption of a strategic framework for risk management and the implementation of core principles contained in it.

Structural safety of schools. New schools are being constructed to withstand category 5 hurricane.

The preliminary National Vulnerability Assessment has been drawn up and is a research tool to inform land use planning and development. At the same time a revision of the National Development Plan is underway and the Conservation Bill which covers impact assessments, vulnerable areas etc has been completed and is awaiting legislative debate and approval.

Lessons learned through past events such as Hurricane Ivan have been powerful motivators for change and preparedness, mitigation and contingency planning are being implemented across public and private sectors.

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 agency is just starting these approaches.

Future Outlook Statement:

More emphasis will be placed on this area as outlined in the National Strategic Framework.

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:

Sustaining community groups and managing attrition.

Future Outlook Statement:

The programme has been received with enthusiasm by some communities. These will be used as pilot communities in expanding the programme.

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:

This has been done in the design phase. Integration into reconstruction will be carried out as required post-impact.

Future Outlook Statement:

Continued support from policy level is anticipated.

Public acceptance of multi-hazard approach is anticipated with increasing public awareness.