
**THE REGIONAL PROGRAMME AND PLAN OF ACTION FOR CLIMATE CHANGE
ADAPTATION AND DISASTER RISK REDUCTION**

FOR THE

**THE MAINSTREAMING CLIMATE CHANGE INTO
DISASTER RISK MANAGEMENT FOR THE CARIBBEAN REGION (CCDM) PROJECT**

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CCDM/ CCDM-WG4/0911/5

Acronyms

ADA	Austrian Development Agency
CANARI	Caribbean Natural Resources Institute
CARDI	Caribbean Agriculture Research Development Institute
CCA	Climate Change Adaptation
CCCCC	Caribbean Community Climate Change Centre
CCDM-WG	Climate Change Disaster Management Working Group
CDEMA	Caribbean Disaster Emergency Management Agency
CDM	Comprehensive Disaster Management
CPDC	Caribbean Policy Development Centre
CRFM	Caribbean Regional Fisheries Mechanism
DEO	Disaster Emergency Organisation
DFID	Department for International Development
DRR	Disaster Risk Reduction
IT	Information Technology
MACC	Mainstreaming Adaptation for Climate Change
MDG	Millennium Development Goals (MDG)
OECS-ESDU	Organisation of Eastern Caribbean States – Environment and Sustainable Development Unit
SRFP	Sub-Regional Focal Points
TOR	Terms of Reference
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change

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1 INTRODUCTION

The Caribbean Disaster Emergency Management Agency (CDEMA) has partnered with the Austrian Development Agency (ADA) to implement the Mainstreaming Climate Change into Disaster Risk Management for the Caribbean Region project. This project will aid in the reduction of risks created by climate change and disasters, by strengthening capacity throughout the region and promoting community resilience. The project directly supports the Comprehensive Disaster Management (CDM) Strategy and Programming Framework, Priority Outcome four (4) which promotes “the enhancement of community resilience in CDEMA states/territories to mitigate and respond to the adverse effects of climate change and disasters.” It also contributes directly to the CDEMA Work Programme Key Result Area three (KRA 3), the Enhancement of Capacity of the Participating States.

Two of the major outputs/ results expected from this project include:

1. A regional programme for integration of climate change in the disaster risk reduction agenda; and
2. A regional plan of action for implementing the climate change and disaster risk reduction programme

The regional Programme and Plan of Action for integrating climate change into the disaster risk reduction agenda addresses the urgent need for an integrated and programmatic approach to address climate change adaptation and disaster management, for the sustainable development of the region. It is intended to be a blue print that can be used at the national level to design and implement programmes and projects geared at enhancing preparedness, response and adaptation capacity among public, private and civil sector entities for local level management and response.

The intended results of the Programme and Plan of Action include:

- i. Improved coordination and collaboration between community disaster organisations and other research/data partners including climate change entities for undertaking comprehensive disaster risk management
- ii. Enhanced community awareness and knowledge on disaster management and climate change adaptation procedures
- iii. Enhanced preparedness and response capacity (technical and managerial) for sub-regional and local level management and response.

PROGRAMME GOAL

A model for integrating climate change adaptation and disaster risk reduction that will be replicated throughout the region.

PROGRAMME RESULTS

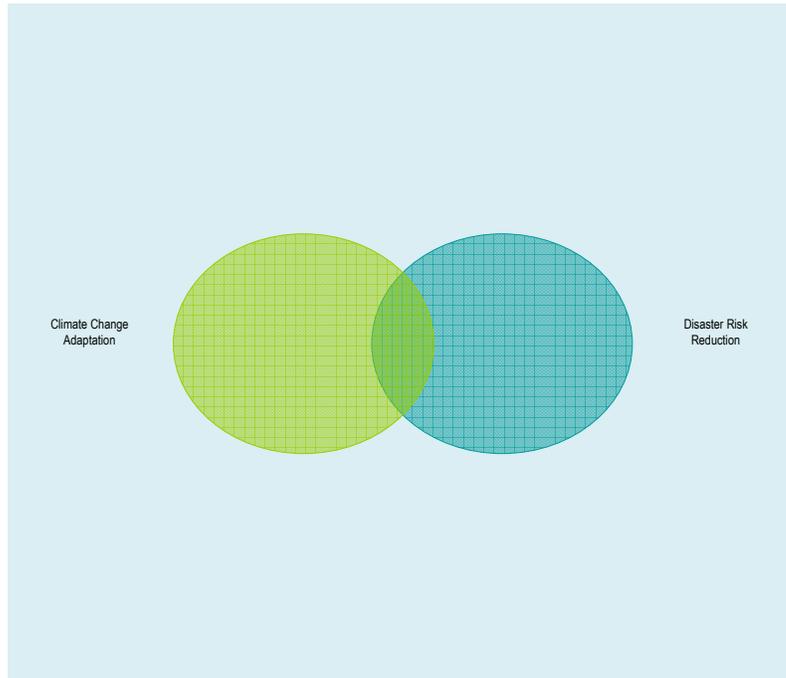
Improved coordination and collaboration between community disaster organisations and other partners

Enhanced community awareness and knowledge on disaster management and climate change adaptation procedures

Enhanced preparedness and response capacity for sub-regional and local level management and response.

Programme scope:

The programme focuses on the interface between CCA and DRR recognising that mitigation may be addressed when necessary or required.



1.1 Programme justification

The International Panel on Climate Change (IPCC) in its Fourth Assessment Report noted that climate change is unequivocal and there can now be little doubt that it is a real phenomenon. Human activities associated with economic and social development have altered the composition of the global atmosphere through the emission of greenhouse gasses. In doing so, humans have compounded natural climatic variability through a process of global warming resulting from the greenhouse gas emissions. (IPCC, 2007)

A growing body of evidence indicates that the adverse effects of heightened levels of greenhouse gas emissions are being manifest throughout hydrological, terrestrial and marine systems. Caribbean countries, the majority of which are SIDS are among the most vulnerable to the effects of climate change and the impacts that it has on their natural and human environments (Simpson *et al* 2008). The broad-scale impacts of climate change have been identified as:

- sea level rise;
- increased temperatures (land and sea); and
- changing meteorological regime (hurricanes, drought and rainfall patterns).

The cost of natural disasters to the Region is extremely high. As noted by the CCCCC:

Economic growth in the Caribbean countries was undermined by the natural disasters that struck in the second half of 2004. Their impact, measured in terms of GDP, was quite severe in most cases, with the only major exception being the Dominican Republic, where damage and losses accounted for less than 2 percent of that country's current GDP. In Grenada, it amounted to 212 percent of GDP, and in the Cayman Islands it totalled 138 percent. Although the figures for Jamaica (8 percent) and the Bahamas (7 percent) were lower, they nonetheless represent a significant economic burden. Fourteen assessments and analyses conducted by the Economic Commission for Latin America and the Caribbean (ECLAC) and the Organisation of Eastern Caribbean States (OECS) estimate the related amount of damage and losses at more than US\$5 billion. (CCCCC, 2009:7)

Climate change is therefore a real threat to the livelihoods of the Caribbean people because of its impact on the economy, the environment, health and safety. The CCCC points out that "most coastal areas have little defence against the raging surfs of hurricanes and tropical storms, and the likely consequences would be significant coastal damage including beach erosion and infrastructure damage (e.g., roads, bridges, utility lines, and buildings). Additionally, the poor condition of upland watersheds and the felling of mangrove forests, particularly in larger countries such as Belize, Guyana, and Suriname, make inland areas very susceptible to property and infrastructure damage from flooding." (CCCCC, 2009: 12)

The Centre goes on in its analysis to discuss the productive sectors, especially agriculture and tourism, and to indicate that they are also likely to be adversely affected by climate change. For instance, the Caribbean tourism product is located primarily in the low lying coastal zone. Coastal erosion, partly the result of anthropogenic factors such as sand mining, is already a problem on many islands and may be exacerbated by rising sea levels. In the case of agriculture, the vast majority of agricultural production across the region is rain-fed, and the projected reduction in precipitation would have a serious impact on food security and exports. (CCCCC, 2009: 12)

Thus, climate change endangers the achievement of several of the targets set in the Millennium Development Goals (MDG). For example, Goal Number 1, to eradicate extreme hunger and poverty, is threatened by the intense weather-related disasters undermining food security and causing water scarcity. The Mainstreaming Climate Change into Disaster Risk Management for the Caribbean Region project is therefore timely, because it targets groups especially vulnerable to climate change and disaster. Its ultimate objective is to strengthen regional, national and community level capacity for mitigation, management and coordinated response to natural and technological hazards and the effects of climate change through this Programme and Plan of Action.

The integration of Disaster Risk Reduction and Climate Change Adaptation in the pursuit of sustainable development is a logical process which should lead to increased efficiency because they both share the same ultimate goal of reducing vulnerability to weather and climate hazards¹. Integration would result in a number of benefits, including:

- Further enhancement of preparedness and response to climate-related hazards,

¹ Nineteenth Meeting of the CDERA Board, Discussion Paper on Integration of DRR and CCA for the CDERA Participating States on May 14th 2009

- Reduction of the potential impacts of climate change on development and livelihood security,
- More efficient use of financial, human and natural resources, and
- Increased effectiveness and sustainability of both adaptation and risk reduction approaches.²

According to the UN International Strategy for Disaster Reduction (UNISDR), Disaster Risk Reduction is a framework of elements considered with the possibilities to minimize vulnerabilities and disaster risks throughout a society, to avoid (prevention) or to limit (mitigation and preparedness) the adverse impacts of hazards, within the broad context of sustainable development. (<http://www.unisdr.org>) The social and economic debilitation triggered by disaster events has prompted a transformation in the practice and goals of disaster management to a Disaster Risk Reduction (DRR) agenda that requires a comprehensive and integrated approach to hazard management, emphasizing the significance of vulnerability to hazards as a fundamental determinant of potential loss. At the core of this paradigm shift is the recognition that effectively addressing the issue of disaster-related losses requires DRR to be considered as a development issue. Its underlying values are that development should not engender vulnerability, and that development provides an opportunity to reduce vulnerability as well as the frequency of hazardous events. (UNFCCC/TP/2008/4)

In a similar vein, Climate Change Adaptation (CCA) refers to the adjustment in natural or human systems in response to actual or expected risks – i.e., climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities. Prominent among the many risks are floods, tropical cyclones and other fast onset hazards, as well as hazards that occur more slowly such as drought, the progressive drying out of semi-arid regions, sea level rise, salinization of groundwater, melting of glaciers and the loss or migration of species. The risks threaten socio-economic and livelihood activities and human health, as well as environmental and infrastructure resources in agriculture, forestry, fisheries and water resources among others. Thus, CCA requires action at all levels of government, from local to national and international, as well as the involvement of civil society and the private sector. (UNFCCC/TP/2008/4)

The Caribbean Community Climate Change Centre (CCCCC) clearly states that poor levels of preparedness and/or the adoption of a reactive adaptation strategy will cause Caribbean countries to divert scarce resources away from development projects for relief and reconstruction projects caused by global climate change related events. The CCCCC goes further and recommends that investing in a proactive comprehensive strategy and plan is an indispensable element of the region's economic, social, and environmental resilience-building effort.

Therefore, this Programme and Plan of Action acknowledges the extreme vulnerability of the Caribbean SIDS to the effects of climate change, and in response to the urgency of the situation, accepts the rationale of integrating CCA and DRR as a logical and proactive approach. Such an approach will allow the Caribbean nations to focus resources on creating the balance needed between short-term actions that can reduce immediate impacts (e.g. through early warning and disaster preparedness) and longer-term actions needed to resolve the underlying causes of vulnerability.

² Nineteenth Meeting of the CDERA Board, Discussion Paper on Integration of DRR and CCA for the CDEMA Participating States on May 14th 2009

1.2 Policy Context

The programme for integrating Climate Change Adaptation and Disaster Risk Reduction in the Caribbean at a national level is consistent with recommendations made by the highest authorities in both the climate change and the disaster disciplines. At the global level, the UNFCCC has clearly delineated the areas of convergence between Climate Change Adaptation (CCA) and Disaster Risk Reduction (DRR). As noted, both CCA and DRR aim to build resilience contributing to sustainable development in the face of hazards. Other areas of convergence identified are listed in Table 1:

Table 1: Summary of commonalities between adaptation and disaster risk reduction

Common areas	Explanation
Influence of poverty, and vulnerability and its causes	The severity of the conditions caused by climate change and disasters is influenced by poverty and by vulnerability and its causes
Vulnerability reduction focused on enhancing capacity, including adaptive capacity, and devising responses in all sectors	Assessing risk and vulnerability is fundamental to both subjects. Reducing vulnerability requires multi-stakeholder participation
Integration in development	Both must be integrated into development plans and policies
Local level importance	Measures to relieve risk and adapt to climate change must be effective at the local level
Emphasis on present day conditions	Increasingly it is recognized that the starting point is in current conditions of risk and climate variability (i.e. 'no regrets')
Awareness of need to reduce future impacts	Despite a tradition based on historical evidence and present day circumstances, the aim of disaster risk reduction to build resilience means that it cannot ignore current and future climate change risks
Appropriateness of non-structural measures	The benefits of non-structural measures aid both current and less well understood future risk reduction needs
Full range of established and developing tools	For example: early warning systems; seasonal climate forecasts and outlooks; insurance and related financial risk management; building design codes and standards; land-use planning and management; water management including regional flood management, drainage facilities, flood prevention and flood-resistant agricultural practices; and environmental management, such as beach nourishment, mangrove and wetland protection, and forest management
Converging political agendas	At the international level, the two policy agendas are increasingly being discussed together, including through the Bali Action Plan (decision 1/CP.13) and the Hyogo Framework for Action

Source: This was taken from UNFCCC/TP/2008/4. It includes information from United Nations International Strategy for Disaster Reduction. 2003. Climate and Disaster Risk Reduction. Briefing document by the United Nations Inter-Agency Task Force on Disaster Reduction, eighth meeting, Geneva, 5–6 November. Geneva: UN/ISDR. p.4.

At a regional level, interventions such as the Barbados Small Island Developing States Programme of Action 1994 and the St. George's Declaration of Principles for Environmental Sustainability 2000, have catalysed a number of the CDEMA Participating States into taking steps to advance works in climate change adaptation and disaster risk. Some states, including Guyana, St. Lucia, Belize, Barbados and St Kitts Nevis have participated in projects which promote the development of national climate change adaptation and mitigation plans.

However, the leading policy initiative at the regional level for disaster risk reduction can be found in the Enhanced CDM Strategy and Programming Framework of the CDEMA. This framework along with the Regional Framework for Achieving Development Resilient to Climate Change produced by the CCCC

provide governance mechanisms and overarching frameworks for the advancement of the Region's approach to climate change adaptation and disaster risk management.³

The Enhanced CDM Strategy and Programming Framework, is the blue-print that is defining disaster risk reduction initiatives in CDEMA Participating States over the period 2007-2012 and reflects the progress within the Caribbean region towards realisation of a programming approach to disaster management (See Appendix 1). The purpose of the CDM Framework is to strengthen regional, national and community level capacity for mitigation, management, and coordinated response to natural and technological hazards, and the effects of climate change. Climate change is a cross cutting theme of the CDM strategy, however, Priority Outcome 4 specifically addresses building resilience to mitigate and respond to the adverse effects of climate change and disasters. (Ibid)

The Regional Framework for Achieving Development Resilient to Climate Change, from here on referred to as the Climate Change Framework, provides the roadmap for action in building of resilience to the impacts of GCC by CARICOM States over the period 2009-2015 and builds on the groundwork laid by the Caribbean Community Climate Change Centre (CCCCC) (See Appendix 1). In recognition of the GCC being the most serious sustainable development challenge facing CARICOM states inter alia, this Framework has a strategic vision to promote the achievement of “a regional society and economy that is resilient to a changing climate”. It must be noted that disaster risk reduction is considered a cross cutting theme in this Framework and that Government entities must advance the goals and objectives of the strategy by ensuring that disaster risk reduction is taken into account in designing development programmes and projects⁴. (Ibid)

Within these two frameworks a number of linkages for collaboration and synergising of efforts exists. For example disaster risk reduction is being directly supported under Strategic Element 1, goal 2, “Reducing vulnerability to a changing climate”, which aims to “build in-country capacity to formulate and analyse adaptation policy options and develop and implement multi-sectoral adaptation Strategies.

Another linkage seen is the between CDM Priority Outcome 4 and the Climate Change Framework. Priority outcome 4 of the CDM Framework addresses climate change, specifically, it is expected that by 2012 there will be “Enhanced community resilience in CDEMA states/ territories to mitigate and respond to the adverse effects of climate change and disasters”. The outputs under this outcome directly support the achievement of a number of the goals of the Climate Change Framework in particular those of Strategic Elements 1, 2 and 3. (See Appendix 1) (Ibid)

Similarly, the Climate Change Framework also captures disaster risk reduction under its Strategic Elements 1 and 2, to “Mainstream climate change adaptation strategies into the sustainable development agendas of CARICOM Member States” and; to “Promote the implementation of specific adaptation measures to address the key vulnerabilities in the region” respectively. The two aforementioned governing frameworks

³ Report on Climate Change and Disaster Management initiatives in the Region and Priority Areas for Action: Concept Paper . CCDM/ CCDM-WG1/1009/8

⁴ Climate Change and the Caribbean A Regional Framework for Achieving Development Resilient to Climate Change, 2009-2015 prepared by the Caribbean community Climate Change Centre

present ideal regional platforms for the integration of climate change adaptation and disaster risk management and; for the development of a regional integrated climate change adaptation and disaster risk reduction agenda. (Ibid)

1.3 Overview of initiatives

In the Report on Climate Change and Disaster Management Initiatives in the Region and Priority Areas for Action: Concept Paper, CDEMA provides a review of several initiatives that are underway in the region for addressing climate change adaptation and disaster risk reduction. The following is a brief summary of a selection of these initiatives.

1.3.1 Preparedness response and capacity building

- Under the Caribbean Risk Management Initiative (CRMI) a cadre of risk management personnel was trained.
- The Mainstreaming Adaptation to Climate Change (MACC) and the Caribbean Planning for Adaptation to Global Climate Change (CPACC) projects contributed to enhancing capacity through the implementation of adaptation studies in the region.
- The CPACC project - the Township Planning Strategies for Storm Surge Toolkit 2007 was developed which promotes the implementation of adaptation strategies and policy options in response to mainly storm surge activity.
- The Special Programme for Adaptation to Climate Change Implementation of Adaptation Measures in Coastal Zones (SPACC) being implemented by the Caribbean Community Climate Change Centre, is an initiative which involves the implementation of adaptation strategies based on lessons learnt and past interventions of projects like the MACC and CPACC projects.
- Under CPACC project, there have been four regional sub-projects to build a scientific database for initiatives which would provide the knowledge base on climate change to better inform adaptation strategies at the regional and national levels. These involved the designing and establishment of a sea level/climate monitoring network which led to the successful installation of eighteen (18) monitoring systems in twelve (12) Caribbean countries and an inventory of coastal resources.

1.3.2 Improved coordination and collaboration

- The Caribbean Community Climate Change Centre (CCCCC) coordinates the Caribbean region's response to the impacts of climate change and climate variability. The Centre is the official repository and clearing house for regional climate change data, providing climate change-related policy advice and guidelines to the Caribbean Community (CARICOM) Member States through the CARICOM Secretariat⁵.

⁵ Description of the CCCCC and the related roles and responsibilities of the organisation as posited on the official website of the CCCCC.

- The CARICOM Task Force on Climate Change and Development was established primarily to define and address the Region's Climate Change Agenda for negotiations leading up to the 15th Conference of the Parties (COP 15) for the United Nations Framework Convention on Climate Change (UNFCCC) set for Copenhagen, Denmark in December 2009 and beyond. This Task Force also provides support and representation for the Caribbean Community with respect to critical sectors affected by climate change. It therefore represents a forum for the coordination and collaboration between the climate change entities and various other stakeholders ⁶.
- The CDM Coordination and Harmonization Council (CDM CHC) represents the establishment of a CDM governance mechanism to provide policy and technical advice for the implementation of CDM at the national, regional and sector levels. Among its main responsibilities are mainstreaming Disaster Risk Management at the national level and into key sectors of national economies; providing overall guidance to CDM development and implementation and facilitating the effective coordination and harmonization of the CDM implementation process.

1.3.3 Education and public awareness

- The Master's programme at the Centre for Resource Management and Environmental Studies has a specialist stream in climate change. Within this programme, information on climate change adaptation and mitigation, climate change dynamics, modelling and policy responses are delivered. This programme was initiated under the Adapting to Climate Change in the Caribbean (ACCC) project and has been a major source of environmental managers, scientist and climate change specialists.
- The African Caribbean and Pacific Group of States –European Union (ACP EU) project will be executed by CDEMA and will include the development of a Toolkit for assisting National Disaster Offices in conducting training at the community level in the development of community preparedness programmes and plans will be developed. The development of the Toolkit will involve the complete revision of the Community Preparedness Manual. As such the Climate Change Adaptation Module which will be developed by the CCDM project will be streamlined into CDEMA as a part of the Community Training Toolkit.
- The International Federation of Red Cross Societies (IFRCS) is implementing a climate change project which is assessing vulnerability and risk; and building resilience to disasters and climate change in seven (7) communities including in Grenada, Antigua and Barbuda and St. Kitts and Nevis. The project will also involve activities in promoting water harvesting, coastal protection and food security in communities. Community members are also being trained in First Aid, Light Search and Rescue and; disaster management.
- In Jamaica there is the "Building Disaster Resilient Communities Project" which seeks to address community resilience through the enhancement of awareness and the building of capacity within communities. The Project has funding from Organization of American States (OAS).

⁶ CARICOM Climate Change Task Force press release on November 23rd, 2008 as represented on the CARICOM website: http://www.caricom.org/jsp/pressreleases/pres354_08.

The CDEMA Concept Paper concluded that there was a need for the rationalization of the many initiatives to minimize the risk of inefficient planning, dispersion and duplication of plans and frameworks as well as the wasting limited available resources. The Programme and Plan of Action offers a mechanism through which such rationalization could occur. Moreover, the Programme and Plan of Action is therefore a logical progression in the process of defining the agenda for implementation of appropriate action at the national level.

1.4 The process of developing the Programme and Plan of Action

The Programme and Plan of Action is being drafted by the Climate Change Disaster Management Working Group (CCDM-WG). The CCDM-WG provides technical guidance to the Mainstreaming Climate Change into Disaster Risk Management for the Caribbean Region Project. The CCDM-WG comprises a unique combination of technical and community-based organisations in the areas of climate change and disaster management, and was especially established to provide a platform upon which partners could harmonise their technical expertise and experience for more effective interfacing of climate change with disaster risk management. Its composition is as follows:

1. Centre for Resource Management and Environmental Studies (CERMES), University of the West Indies (UWI) - Chair
2. Caribbean Disaster Emergency Management Agency (CDEMA)
3. Caribbean Community Centre for Climate Change (CCCCC)
4. United Nations Development Programme (UNDP) - Caribbean Risk Management Initiative (CRMI)
5. Organisation of Eastern Caribbean States (OECS) Environment and Sustainable Development Unit (ESDU)
6. Caribbean Institute of Meteorology and Hydrology (CIMH)
7. University of the West Indies Disaster Risk Reduction Centre (UWI DRRC)
8. United Nations Development Fund for Women (UNIFEM)
9. Insurance Association of the Caribbean (IAC)
10. International Federation of the Red Cross (IFRC)
11. Sub Regional Focal Points
12. Caribbean Farmers Network (CaFAN)
13. Caribbean Regional Fisheries Mechanism (CRFM)
14. Department for International Development (DFID)
15. Caribbean Development Bank (CDB)
16. Caribbean Policy Development Centre (CPDC)
17. Caribbean Natural Resources Institute (CANARI)

The CCDM-WG has held three meetings between October 2009 and April 2010 during which they have worked to develop a preliminary draft of the Programme and Plan of Action, which is presented in this document for discussion.

It is anticipated that the CCDM-WG will meet at least twice more before the conclusion of the Project in November 2010 to continue the drafting of the Programme and Action Plan. It is also expected that the

Sector Leads from the CDM and other regional representatives who could make valued input into the process will be engaged by the CDM through its Secretariat at CDEMA. This will be done through a variety of mechanisms, including:

- Participation in the upcoming CCDM-WG meetings
- Participation in video conferences
- Review of documents and submission by email

2 THE PROGRAMME

The Programme and Plan of Action is intended to represent a model which could be used throughout the Region as the blue print for national level integration of climate change adaptation and disaster risk reduction. The initiatives listed in the Action Plan are therefore not intended to be prescriptive. They are the result of the gap analysis conducted by the CCDM-WG, and the identification of practical and tangible initiatives that could be adapted and tailored to the specific needs of the individual countries. These are in essence the responses that would address the deficiencies and enhance the process of integrating CAA and DRR.

The Programme focuses on those areas that represent the interface between DRR and CCA. Its implementation will be at the national level by civil society groups and public and private sector agencies, across all sectors, e.g. tourism, agriculture, health, and in a diversity of cross cutting areas. This can be represented as follows:

Table 2: The scope of the Programme

	Private Sector	Public Sector	Civil Society	Private Sector	Public Sector	Civil Society	Private Sector	Public Sector	Civil Society
All sectors:	Tourism			Agriculture			Health		
Research									
Education									
Legislation									
Capacity building									
Other cross cutting areas									

Table 3 presents the desired results of the implementation of the Programme at the national level. It should be noted that some regional level actions have been identified as imperative to the success of the process, and CDEMA has indicated that it would partner with the sector leads of the Harmonization Council to develop the proposals and jointly seek funding for the implementation of these initiatives.

Table 3: Programme Areas for Integrating CCA and DRR

Programme Cross Cutting Components	Desired results
1. Institutional structure and governance	<ol style="list-style-type: none"> Existing structures strengthened by integrating and mainstreaming climate change into the existing disaster management framework. Improved national climate change adaptation frameworks
2. Legislation	<ol style="list-style-type: none"> Model Climate Change Legislation - model legislation on Climate Change produced which factors in specific considerations in disaster risk reduction. Regional Standards - regional standards produced which factor in climate change considerations in disaster risk reduction measures for hazard mapping and risk assessment. Guidelines - regional guidelines produce which factor in climate change considerations in disaster risk reduction measures for building and infrastructure.
3. Capacity building	<ol style="list-style-type: none"> Planning and national/local emergency organizations agencies' have an increased understanding of the impact of not reducing risk on sustainability, and increased in their ability to implement and enforce development standards.
4. Data sets/ database	<ol style="list-style-type: none"> Improved accessibility of consolidated data related to DM and CC.
5. Information and targeted communication	<ol style="list-style-type: none"> Revised CCCCC Climate Change Public Education and Outreach Strategy and CDEMA Model Education Strategy that includes intersection of CC and DRR. The implementation of the information and communications strategy.
6. Research	<ol style="list-style-type: none"> Research into best practices and documentation for regional implementation of climate change adaptation and disaster risk reduction. Research in the use of remote sensing in disaster risk management. (case studies and new technology). The use of existing radars for real time flood forecasting (DRM). Improvement of existing climate models.
7. Training and education	<ol style="list-style-type: none"> Coordination of training programmes and opportunities to achieve more efficient use of scarce resources and the minimisation of duplication. Establish standardised training programmes for the region through a suite of DRM & CC courses; as well as the development of a timetable of available courses. Create and award undergraduate degrees in DRM including climate change. Sensitise all students, regardless of discipline, to DRM & CC.
8. Monitoring and evaluation	<ol style="list-style-type: none"> Develop a monitoring and evaluation framework by adapting the existing M& D framework that was developed under the CDEMA/IDB Tourism project for use at national level. Improve information sharing using existing websites to allow interested national actors to have access to project documents, information and outputs from CC & DRM projects. Establish instrumentation/technology to monitor hazards, including forecasting, early warning system(s) and projections.

Thus far only the fisheries sector has been developed to any extent. It is anticipated that the other sub-components of the agriculture sector as well as the other sectors will be developed in the upcoming deliberations of the CCDM-WG and other relevant stakeholders.

Table 4: Programme Sector - Fisheries

Fisheries Sector	Desired results
	<ol style="list-style-type: none"> 1. Enhanced fisheries policy development and execution which incorporates CC and DRR. (Note: The CLME Project provides an opportunity for reaching all levels: CLME Model uses a multi-layered Policy Cycle, with focus on governance) 2. Enhanced Fisheries Management Plans (FMPs) which incorporate DRR and CC and are implemented. (Note: Use opportunity of the ACP Fish II Project: Policy and fisheries management component) 3. Fishers using safer vessels

During discussions at the last CCDM-WG session it was determined that some activities were already being done as part of ongoing projects. One such example was that of remote sensing. At the upcoming meeting of the CCDM-WG other areas of possible overlap should be identified and addressed to ensure that activities are not duplicated.

3 THE ACTION PLAN

The CCDM-WG has developed a preliminary Action Plan based on the sectors listed in Table 3. As noted this action plan offers suggestions of the types of initiatives that should be developed at the national level for the integration of climate change adaptation into the disaster risk reduction agenda. Time frames and required resources are indicative only of the level of effort that will be required for implementation.

Table 5: Institutional structure and governance

Desired Result	Target Group	Implementing Partners ⁷	Activities	Steps to be taken	Resources Required	Time Frame
INSTITUTIONAL STRUCTURE AND GOVERNANCE						
Strengthen existing structures by integrating and mainstreaming climate change into existing disaster management framework	<ul style="list-style-type: none"> Technical officers and heads of agencies (from government, private sector) Civil Society Leaders: Farmers, fishers, trade unions, CBO leaders; Universities, other non-state “actors” National Disaster Management Coordinators a CC Coordinators Regional Organizations CC & DM Officers 	CDEMA (regional) NDOs (national)	Develop a process for coordination of the diversity of effort (through multi-sector stakeholder mechanisms); strengthen and implement the linkages (e.g. networks) between and within the national level and regional level re CC. ⁸	<ul style="list-style-type: none"> Identify relevant persons/stakeholders Determine and implement mechanisms for increased involvement of relevant persons <ul style="list-style-type: none"> determine how to make mechanisms more culturally viable structures that are inclusive of who needs to be there analyse current gaps at the national level for mainstreaming CC and DRR determine and create model linkages of agreed mechanisms with the National Implementing Agencies for Adaptation Fund once the latter are in place Strengthen sub-regional DEROs⁹ Establish M&E framework for 	\$\$\$\$ Dedicated technical expertise	2011 - 2014 ¹⁰

⁷ This does not speak to who participates (including other agencies such as civil society etc) in the process but rather who co-ordinates or “leads” it.

⁸ Ref. 4.3.12 -4.3.14

⁹ Ref. Outcome 4.1 Output 3

¹⁰ Note: some capacity building activities, which are scheduled to begin in 2010, contribute to this

Desired Result	Target Group	Implementing Partners ⁷	Activities	Steps to be taken	Resources Required	Time Frame
				application of linkage model		
	<ul style="list-style-type: none"> Public sector, private sector, civil society agencies/groups; other non-state actors 	NDM Entities NCC entities	Conduct Capacity Assessments which will assess the existing capacity and needs of countries.		\$\$\$\$ Dedicated technical expertise	2010-2011
	<ul style="list-style-type: none"> Public sector, private sector, civil society agencies/groups; other non-state actors 	NDM Entities NCC entities	Conduct an assessment of the work being done by various sectors; including the identification of existent projects and measures in place to advance the output would aid in resource allocation and identification.		S\$\$\$ Dedicated technical expertise	2010-2011
	<ul style="list-style-type: none"> Planners (Physical, Economic, etc. from govt, pvt. Sector, civil society (farmers, fishers, trade unions, CBO leaders, Universities, other non-state “actors”), National Disaster Management Coordinators, Regional Organizations CC & DM Officers, Highest of Level Decision Makers (Govt. PVt. Sector & Civil Society), 	CCCCC	Increase awareness of CCCCC	<ul style="list-style-type: none"> Determine sub-regional mechanism that will give CCCCC increased visibility in the Eastern Caribbean <ul style="list-style-type: none"> Includes increasing CCCCC participation at national and regional fora Develop, disseminate and promote material on their mandate, role, responsibilities and work 	\$\$\$\$ Dedicated technical expertise	2010-2011

Desired Result	Target Group	Implementing Partners ⁷	Activities	Steps to be taken	Resources Required	Time Frame
	<ul style="list-style-type: none"> other community based organisations All other stakeholders 	NDM Entities NCC entities	National climate change inter-sectoral policies that integrate the sub-sectors (agriculture – fisheries, forestry, etc.) should be developed by countries that do not have them ¹¹ .		\$\$\$\$ Dedicated technical expertise	2010-2011
Improvement of national climate change adaptation frameworks	<ul style="list-style-type: none"> All other stakeholders 	NDM Entities NCC entities	Strengthen the existing role already played by the Disaster Management Organisations in each country with respect to climate change activities at the national/local levels.		\$\$\$\$ Dedicated technical expertise	2010-2011

¹¹ Ref. Outcome 4.2

Table 6 Legislation

Desired Result	Target Group	Implementing Partners	Activities	Steps to be taken	Resources Required	Time Frame
LEGISLATION						
Model climate Change Legislation: The production of model legislation on Climate Change which factor in specific considerations in disaster risk reduction.	Politicians, national disaster organisations, climate change organisations, regional civil society organisations	National Climate change committees, disaster risk management organisations, research/scientific agencies	<ul style="list-style-type: none"> Identify the lead agency Develop project document Obtain funding Scientific analysis and data gathering Review/gap analysis of existing conventions laws and examples Draft the legislation Obtain CARICOM and other regional level/body political support Enforcement Training and education 	Stakeholder consultations Develop Terms of Reference for the drafting of the Guidelines	Environmental lawyers Access to the required data	Mid 2011 – mid 2014
Regional Standards: The production of	Technical/scientific agencies,	Disaster risk management organisations,	<ul style="list-style-type: none"> Identify the lead agency Develop 	Stakeholder consultations	Political Support	

Desired Result	Target Group	Implementing Partners	Activities	Steps to be taken	Resources Required	Time Frame
Regional Standards which factor climate change considerations in disaster risk reduction measures for hazard mapping and risk assessment	regional civil society organisations	regional research/scientific agencies, CDEMA, CROSQ, CIMH, CARILLEC Governments (further identification required)	<p>project document</p> <ul style="list-style-type: none"> • Obtain funding • Scientific analysis and data gathering • Review/gap analysis of existing methodologies • Draft the guidelines • Obtain CARICOM and other regional level/body political support • Obtain CARICOM and other regional level/body political support • Hazard identification and risk assessment to determine the necessary 	<p>Develop Terms of Reference for the drafting of the Guidelines</p> <p>Ensure that VRA is included</p>		

Desired Result	Target Group	Implementing Partners	Activities	Steps to be taken	Resources Required	Time Frame
			<p>measures to be taken by National Disaster Offices</p> <ul style="list-style-type: none"> See pg 9- 4.4 CCBDM-WG Report 			
<p>Guidelines: The production of Regional Guidelines which factor climate change considerations in disaster risk reduction measures for building and infrastructure.</p>	<p>Utilities, planners, architect, engineers, builders, contractors and developers, regional civil society organisations</p>	<p>Regional professional and technical organisations, CDEMA, CROSQ, CIMH, CARILLEC Governments (further identification required)</p>	<ul style="list-style-type: none"> Identify the lead agency Develop project document Obtain funding Scientific analysis and data gathering Review/gap analysis of existing conventions laws and examples Draft the guidelines Obtain CARICOM and other regional level/ body political 	<p>Stakeholder consultations</p> <p>Develop Terms of Reference for the drafting of the Guidelines</p>	<p>Political Support</p>	<p>Mid 2011 to be completed by Q4 2013</p>

Desired Result	Target Group	Implementing Partners	Activities	Steps to be taken	Resources Required	Time Frame
			support <ul style="list-style-type: none"> • Obtain CARICOM and other regional level/body political support 			

Table 7: Capacity building

Desired Result	Target Group	Implementing Partners ¹²	Activities	Steps to be taken	Resources Required	Time Frame
CAPACITY BUILDING						
To increase planning and national/local emergency organizations' understanding of the impact of not reducing risk on sustainability and increased ability to implement and enforce development standards	<ul style="list-style-type: none"> Planners (Physical, Economic, etc. from govt, pvt. Sector, civil society (farmers, fishers, trade unions, CBO leaders, Universities, other non-state "actors") National Disaster Management Coordinators CC Coordinators Regional Organizations CC & DM Officers 	CC agencies NDM Agencies CCCCC CDEMA UK-AID (Dfid) CANARI, CPDC, CIMH	<ul style="list-style-type: none"> Prepare guidance on how to mainstream climate change into their planning processes 	<ul style="list-style-type: none"> Activity planning workshop (?) National dialogue; workshops <ul style="list-style-type: none"> Explain CC Define/identify mainstreaming process Prepare guidance products (document; inter/intra-sectoral dialogue; workshops, focus groups; PA/ed products) Translate the outputs from MACC that were designed for this purpose Create (participatory) a strategic implementation plan for mainstreaming CC and DRR <ul style="list-style-type: none"> Includes strategic PA interventions Ref. institutional structures and governance Commence implementation of plan <ul style="list-style-type: none"> Includes dissemination of products 	\$\$\$\$ Dedicated technical expertise	2010-2012

¹² This does not speak to who participates (including other agencies such as civil society etc) in the process but rather who co-ordinates or "leads" it.

Desired Result	Target Group	Implementing Partners ¹²	Activities	Steps to be taken	Resources Required	Time Frame
	<ul style="list-style-type: none"> Highest of Level Decision Makers (Government, Private Sector & Civil Society) 	CC agencies NDM Agencies CCCCC CDEMA UKAID (DfID) CANARI, CPDC, CIMH	<ul style="list-style-type: none"> Increase understanding of the process of mainstreaming climate change into their programming 	Executive Dialogue	\$\$\$\$ Dedicated technical expertise	2010

Table 8: Dataset/Database

Desired Result	Target Group	Implementing Partners	Activities	Steps to be taken	Resources Required	Time Frame
DATASETS/DATABASE						
Improved accessibility of consolidated data related to DM and CC	<ul style="list-style-type: none"> National Disaster Offices, sector and other community-based organisations 	CCCC CDEMA CIMH Universities	<ul style="list-style-type: none"> Hazards analysis (hazard identification and risk assessments) to determine the necessary measure to be taken by National Disaster Offices required as part of baseline information consolidated as it relates to CC and DRR 	<ul style="list-style-type: none"> Activity planning workshop (regional?) National dialogues for hazard identification and risk analysis Consolidate National analyses into regional "picture" Disseminate consolidation outputs to relevant stakeholders 	\$\$\$\$ Dedicated technical expertise	2010 – 2011 (with dissemination ongoing)
	<ul style="list-style-type: none"> National Disaster Offices, Universities, CIMH 	CCCC CDEMA	<ul style="list-style-type: none"> Gap analysis of data gathering and modeling 	<ul style="list-style-type: none"> Arrange a meeting or workshop for the scientific research entities to carry out (facilitated) gap analysis Incorporate results of gap analysis into data gathering, modelling and analysis protocols 	\$\$\$\$ Dedicated technical expertise	2010
	<ul style="list-style-type: none"> National Disaster Offices, sectors and other community-based organisations 		Establishing (and maintaining) information sharing mechanisms for generic information on climate change to ensure that the information can then been disseminated cross link to Targeted communication).	<ul style="list-style-type: none"> Arrange a meeting or workshop for the scientific research entities to present existing information to the National Disaster Offices, sectors and other community based organisations See targeted communication 	\$\$\$\$ Data clearing-house mechanism/resource centre, Dedicated technical expertise	2010

Table 9 Information and targeted communication

Desired Result	Target Group	Implementing Partners	Activities and steps to be taken	Time Frame	Resources Required
INFORMATION AND TARGETED COMMUNICATION					
Revised CCCCC Climate Change Public Education and Outreach Strategy and CDEMA Model Education Strategy that includes intersection of CC and DRR	CDEMA, CCCCC and their participating states	CDEMA (and PS), CCCCC, CANARI, CERMES, DRRC	Dialogue between CCCCC and CDEMA to agree on approach and work plan	May 2010	US\$250,000 Funding for 2 regional workshops (US\$120,000) - first one 3 days, second 2 days Funding for one-day national reviews in 18 countries (US\$40,000) Consultancy fees (40 days @US\$500/day – \$80,000) Graphic design, printing and dissemination US\$10,000
			Develop terms of reference	June-July 2010	
			Procure consultant	by end of October 2010	
			Regional consultation to ID gaps, discuss nexus b/w CC and DR, share updated information, develop template for national level implementation work programme	February 2011	
			Incorporate agreed recommendations		
			Adoption of revised strategy by CCCCC and CDEMA		
			Dissemination to stakeholders		
			National consultations	March 2011	
			Regional consultation	April 2011	
The implementation of the information and communications strategy	Regional: CCCCC, CDEMA	CCCCC, CDEMA, CANARI, UWI	Review regional joint CCCCC/CDEMA work plan Identify appropriate experts to translate		\$200,000

Desired Result	Target Group	Implementing Partners	Activities and steps to be taken	Time Frame	Resources Required
			<p>scientific data into useful info for stakeholders</p> <p>Define key messages</p> <p>Develop information sharing mechanisms/networks e.g. e-group, CCCCC website (note: work on climate change monitoring, vulnerability and capacity assessment, training, research, clearing house)</p> <p>Define performance monitoring framework (PMF)</p> <p>Create national work plan template</p>		
	<p>National: general public, public and private sectors (agriculture, natural resources, tourism, transport, health, development/planning, etc), civil society, youth, special/vulnerable</p>	<p>NDO, NCCC, Ministries, key NGOs, tertiary institutions, HTA, farmers' groups, fisherfolk groups, community leaders, CBOs</p>	<p>Review national work plan template</p> <p>Organize national consultations</p> <p>Identify key stakeholders</p>		

Desired Result	Target Group	Implementing Partners	Activities and steps to be taken	Time Frame	Resources Required
	groups (children, elderly, gender issues), communities		<p>Hold national consultations</p> <p>Tailor key messages</p> <p>Develop means and identify for dissemination to target groups</p> <p>Create information sharing mechanisms/networks to address various sectors and levels of society</p> <p>Develop community/parish level action plans where necessary</p> <p>Agree on indicators/PMF</p> <p>Revisit country for assessment of impact</p> <p>Document lessons learnt</p>		

Table 10: Education and training

Desired Result	Target Group	Implementing Partners	Activities	Steps to be taken	Resources Required	Time Frame
TOPIC 4: EDUCATION AND TRAINING						
Coordination of training programmes and opportunities Greater coordination, more efficient use of scarce resources, minimisation of duplication.	Regional and national persons/organisations with an interest in or affected by the intersection of CC & DRM	Tertiary level organisations in the region, international donor partners, private sector organisations, financial institutions	Establish responsible organisation - CDEMA	<ul style="list-style-type: none"> • Inventory of programmes & information sharing on planned and on-going/repeated programmes • Gap analysis and review of training needs • Establish information sharing and clearing mechanism 		Mid 2011 to mid 2011
Establish standardised training programmes for the region Establishment of a suite of DRM & CC courses Timetable of available courses	National organisations, NGO, CBO, private sector	CDEMA Donor partners	Identify focal point Inventory of suitable existing courses	<ul style="list-style-type: none"> • Develop standards • Stakeholder consultation • Develop/modify courses • Advertise 		Mid 2011 to end 2012
Create undergraduate degrees in DRM including climate change Awarding undergraduate degrees Sensitise students to DRM & CC	Undergraduates	UWI	Develop course curriculum Obtain necessary UWI approvals Develop distance based course material through Open Campus Advertise	Obtain funding	Knowledge of e-learning methodologies & development support personnel	Mid 2011 to Sept 2012

Table 11: Research

Desired Result	Target Group	Implementing Partners	Activities	Steps to be taken	Resources Required	Time Frame
RESEARCH						
Research into best practices and documentation for regional implementation of climate change adaptation and disaster risk reduction.	CDEMA, NDO, Sectors	Technical/scientific agencies, NDO, Universities, NGOs, INGOs	<ul style="list-style-type: none"> Source funding Identification of researcher (post grad/ post doc, students, universities) Disseminate 	<ul style="list-style-type: none"> Identify interventions to be researched Gather information & comparative analysis Develop scoring framework Identify best practices Stakeholder workshops & dissemination of interim results for comment. Write up & disseminate. 	None	Early 2011 to end 2012
Research in the use of remote sensing in disaster risk management. (case studies and new technology)	CDEMA, NDO, Sectors, Universities	Google earth, NASA, Universities, Telecommunications companies	<ul style="list-style-type: none"> Source funding Identification of researcher (post grad/ post doc, students, universities) Disseminate 	<ul style="list-style-type: none"> Identify different approaches used to various disasters & interventions Visit service providers Gather & recipient user experiences Develop evaluatory framework Carry out evaluation Workshops & seminars Recommendations 	Access to imagery, people who used new approaches, evaluations.	Early 2011 to end 2012
The use of existing radars for real time flood	Meteorological and Hydrological	CMO, CDEMA, WMO	<ul style="list-style-type: none"> Source funding Identification of 	<ul style="list-style-type: none"> Collect data Evaluate algorithms 	Use existing instrumentation	Mid 2011 to

Desired Result	Target Group	Implementing Partners	Activities	Steps to be taken	Resources Required	Time Frame
forecasting (DRM)	services, CIMH		<p>researcher</p> <ul style="list-style-type: none"> • Achieve buy-in from potential partners • Implementation and dissemination strategy 	<ul style="list-style-type: none"> • Calibration and ground truthing • Decide on output format • Integration with other models • Integration with existing warning systems 	and outputs	mid 2013
Improvement of existing climate models	Universities, CCCCC, CIMH, INSMET, NOAA	Universities, Hadley Centre	<ul style="list-style-type: none"> • Source funding of researcher • Identify collaborating agencies • Evaluate and calibrate • Disseminate 	<ul style="list-style-type: none"> • Collect data • Decide on spatial resolution • Review of adequacy of data gathering & monitoring networks • Develop downscaling methodologies and downscaled data inputs • Develop new RC models at appropriate scales • Integration of global models with RCM • Use outputs to generate national CC/DRM plans 	<ul style="list-style-type: none"> • Establish computing facilities (equipment and technical capacity) • Software 	Mid 2011 to early 2014

Table 12: Monitoring and evaluation

Desired Result	Target Group	Implementing Partners	Activities	Steps to be taken	Resources Required	Time Frame
TOPIC 3: MONITORING AND EVALUATION						
Development of a monitoring and evaluation framework: Adaptation of the existing M& D framework developed under the CDEMA/IDB Tourism project for use at national level	CDEMA/NDO/NGO	Central Planning Offices, Project implementation agents	Review framework and identify strengths & weaknesses Propose changes and pilot test Adapt and adopt framework	Identify countries willing to act as pilots Apply framework Share results & disseminate	None	Early 2011 to end 2011
Information sharing using existing websites: Interested national actors have access to project documents, information and outputs from CC & DRM projects.	CDEMA/NDO/NGO/John Avera/					
Establish instrumentation/technology to monitor hazards: Forecasting Early warning system(s) Projections	Professionals Technicians	WMO, Regional and National organisation, CIMH, and Met	Source and acquire equipment Installation and calibration			

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APPENDIX 1

Table 13: The Comprehensive Disaster Management Programming Framework

GOAL			
Regional Sustainable Development enhanced through Comprehensive Disaster Management			
PURPOSE			
<i>'To strengthen regional, national and community level capacity for mitigation, management, and coordinated response to natural and technological hazards, and the effects of climate change adaptation.</i>			
↓	↓	↓	↓
OUTCOME 1:	OUTCOME 2:	OUTCOME 3:	OUTCOME 4:
Enhanced institutional support for CDM Program implementation at national and regional levels	An effective mechanism and programme for management of comprehensive disaster management knowledge has been established	Disaster Risk Management has been mainstreamed at national levels and incorporated into key sectors of national economies (including tourism, health, agriculture and nutrition)	Enhanced community resilience in CDERA states/ territories to mitigate and respond to the adverse effects of climate change adaptation and disasters
↓	↓	↓	↓
OUTPUTS	OUTPUTS	OUTPUTS	OUTPUTS
<p>1.1 National Disaster Organizations are strengthened for supporting CDM implementation and a CDM program is developed for implementation at the national level</p> <p>1.2 CDERA CU is strengthened and restructured for effectively supporting the adoption of CDM in member countries</p> <p>1.3 Governments of participating states/ territories support CDM and have integrated CDM into national policies and strategies</p> <p>1.4 Donor programming integrates CDM into related environmental, climate change adaptation and disaster management programming in the region.</p> <p>1.5 Improved coordination at national and regional levels for disaster management</p> <p>1.6 System for CDM monitoring, evaluation and reporting being built</p>	<p>2.1 Establishment of a Regional Disaster Risk Reduction Network to include a Disaster Risk Reduction Centre and other centres of excellence for knowledge acquisition sharing and management in the region</p> <p>2.2 Infrastructure for fact-based policy and decision making is established /strengthened</p> <p>2.3 Improved understanding and local /community-based knowledge sharing on priority hazards</p> <p>2.4 Existing educational and training materials for Comprehensive Disaster Management are standardized in the region.</p> <p>2.5 A Strategy and curriculum for building a culture of safety is established in the region</p>	<p>3.1 CDM is recognized as the roadmap for building resilience and Decision-makers in the public and private sectors understand and take action on Disaster Risk Management</p> <p>3.2 Disaster Risk Management capacity enhanced for lead sector agencies, National and regional insurance entities, and financial institutions</p> <p>3.3 Hazard information and Disaster Risk Management is integrated into sectoral policies, laws, development planning and operations, and decision-making in tourism, health, agriculture and nutrition, planning and infrastructure</p> <p>3.4 Prevention, Mitigation, Preparedness, Response, recovery and Rehabilitation Procedures developed and Implemented in tourism, health, agriculture and nutrition, planning and infrastructure</p>	<p>4.1 Preparedness, response and mitigation capacity (technical and managerial) is enhanced among public, private and civil sector entities for local level management and response</p> <p>4.2 Improved coordination and collaboration between community disaster organizations and other research/data partners including climate change adaptation entities for undertaking comprehensive disaster management</p> <p>4.3 Communities more aware and knowledgeable on disaster management and related procedures including safer building techniques</p> <p>4.4 Standardized holistic and gender-sensitive community methodologies for natural and anthropogenic hazard identification and mapping, vulnerability and risk assessments, and recovery and rehabilitation procedures developed and applied in selected communities.</p> <p>4.5 Early Warning Systems for disaster risk reduction enhanced at the community and national levels</p>

Table 14: The Regional Strategy for Achieving Development Resilient to Climate Change (2008-2015)
Regional Vision: Building Regional Resilience to a Changing Climate

Objectives: To establish direction and to continue to reduce vulnerability in the region and build resilience to the impacts of GCC.

Strategic Element 1: Mainstream climate change adaptation strategies into the sustainable development agendas of the CARICOM Member States.	Strategic Element 2: Promote the implementation of specific adaptation measures to address key vulnerabilities in the region.	Strategic Element 3: Promote actions to reduce the vulnerability of natural and human systems in CARICOM countries to the impacts of a changing climate.	Strategic Element 4: Promote actions to reduce greenhouse gas emissions through fossil fuel reduction and conservation and switching to renewable and cleaner sources of energy.	Strategic Element 5: To promote actions to derive social, economic and environmental benefits from the prudent management of standing forests in CARICOM countries.
<p>Goal 1.1: To assess the vulnerability and risks associated with a changing climate.</p> <p>Goal 1.2: Reduce vulnerability to a changing climate</p> <p>Goal 1.3: Effectively accessing and utilizing resources to reduce vulnerability to a changing climate.</p> <p>Goal 1.4: Build a society that is more informed about and resilient to a changing climate</p> <p>Goal 1.5: Build the Caribbean Community Climate Change Centre's capacity to support the implementation of the strategy.</p> <p>Goal 1.6: Reduce the region's carbon footprint through the promotion of energy efficiency measures.</p>	<p>Goal 2.1: To promote the adoption of measures and disseminate information that would make water supply systems resilient to Climate-induced damage.</p> <p>Goal 2.2: To promote the implementation of measures to reduce climate impacts on coastal and marine infrastructure.</p> <p>Goal 2.3: Promote the adoption of measures and dissemination of information that would adapt tourism activities to impacts.</p> <p>Goal 2.4: Promote sound conservation practices in coastal and marine ecosystems to shelter these resources from climate-induced damage.</p> <p>Goal 2.5: Promote the adoption of sound practices and measures to prevent and/or reduce induced health impacts in the community.</p>	<p>Goal 3.1: Actions of CARICOM countries:</p> <p>Revise building codes, to include restricting construction in areas susceptible to coastal flooding, landslides, or tidal surges</p> <p>Develop new standards for road construction to ensure adequate surface drainage</p> <p>Implement integrated land-use planning</p> <p>Enact national standards for sanitation, both to reduce the required volume of water, as well as to ensure safe systems for the treatment of wastewater and other forms of waste so as to reduce public health risks;</p> <p>Develop and test crop varieties that are more tolerant to adverse weather conditions such as droughts, high winds, and floods;</p> <p>Implement public education and awareness programs; and</p> <p>Develop new legal tools that make for a more responsive insurance industry</p>	<p>Goal 4.1: Promote the use of Renewable Energy Resources</p> <p>Goal 4.2: Support the assessment of wind potential to supply electric power in CARICOM countries</p> <p>Goal 4.3: Support the development of Innovative Financing Mechanisms for Deployment of Solar Water Heaters (SWHs).</p> <p>Goal 4.4: Assess the feasibility of converting waste to energy in CARICOM countries</p> <p>Goal 4.5: Assess the economic viability of Environmental Impact of Shore-based Ocean Thermal Energy Conversion (OTEC) plants</p>	<p>Goal 5.1: Promote adoption of best practices for sustainable forest management</p> <p>Goal 5.2: Engage in negotiations with international partners to mobilize resources for the protection of standing forest</p> <p>Goal 5.3: Undertake research aimed at improving current methodologies for estimating carbon sequestration rates in tropical forests</p>

Table 15: linkages between the Results of the CDM Framework and the Regional Strategy for Achieving Development Resilient to Climate Change (2008-2015)

<i>CDM FRAMEWORK-OUTCOME 4</i>			
<p>Output 4.1- Preparedness, response and mitigation capacity (technical and managerial) is enhanced among public, private and civil sector entities for local level management and response</p> <p style="text-align: center;"></p>	<p>Output 4.2- Improved coordination and collaboration between community disaster organizations and other research/data partners including climate change entities for undertaking comprehensive disaster management</p> <p style="text-align: center;"></p>	<p>Output- 4.3, Communities more aware and knowledgeable on disaster management and related procedures including safer building techniques</p> <p style="text-align: center;"></p>	<p>Output 4.4- Standardized holistic and gender-sensitive community methodologies for natural and anthropogenic hazard identification and mapping, vulnerability and risk assessments, and recovery and rehabilitation procedures developed and applied in selected communities.</p> <p style="text-align: center;"></p>
<p><i>Goal 1.2 Reduce Vulnerability to Climate Change</i></p>	<p><i>Goal 3.1 Effectively access and utilize resources to reduce vulnerability to a changing climate</i></p>	<p><i>Goal 1.4- Build a Society that is more informed about and resilient to a changing climate;</i></p>	<p><i>Goal 1.1: assess the vulnerability and risks associated with a changing climate</i></p>
		<p><i>Goal 2.2- Promote the implementation of measures to reduce climate impacts on coastal and marine infrastructure</i></p>	
		<p><i>Goal 2.3- Promote the adoption of measures and dissemination of information that would adapt tourism activities to climate impacts</i></p>	

