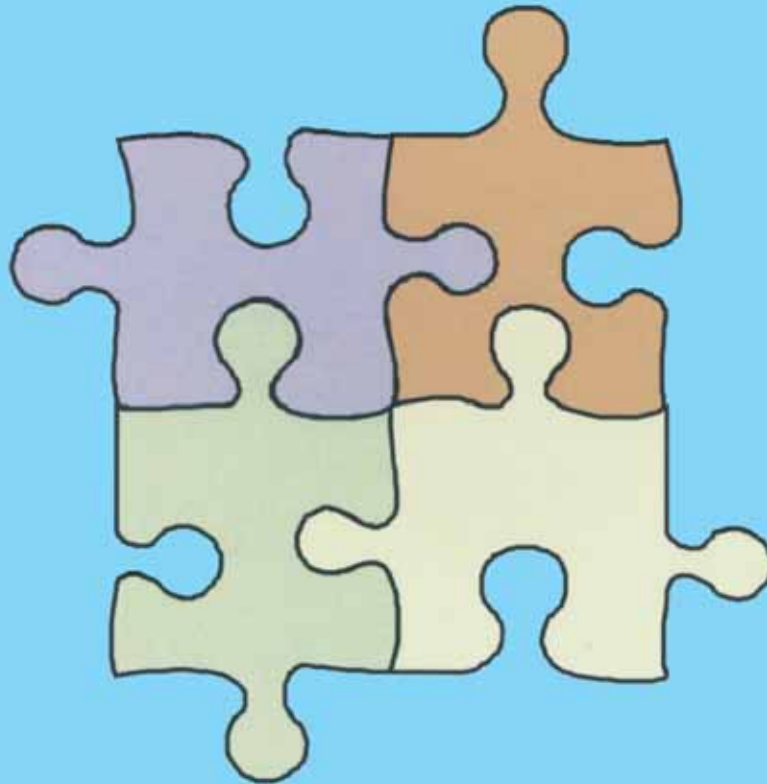




Enhancing National and Community Resilience

Integrating Disaster Risk Reduction and Climate Change Adaptation Measures into Development Planning and Processes in Bangladesh

GUIDE TO PRACTICE



Printing supported by:

Comprehensive Disaster Management Programme
Ministry of Disaster Management and Relief

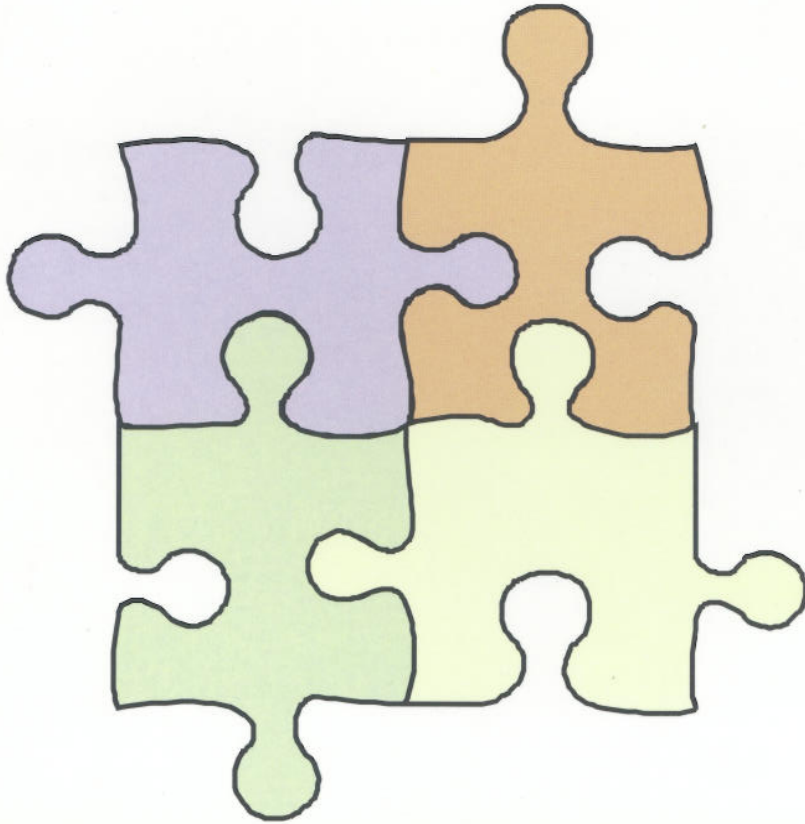




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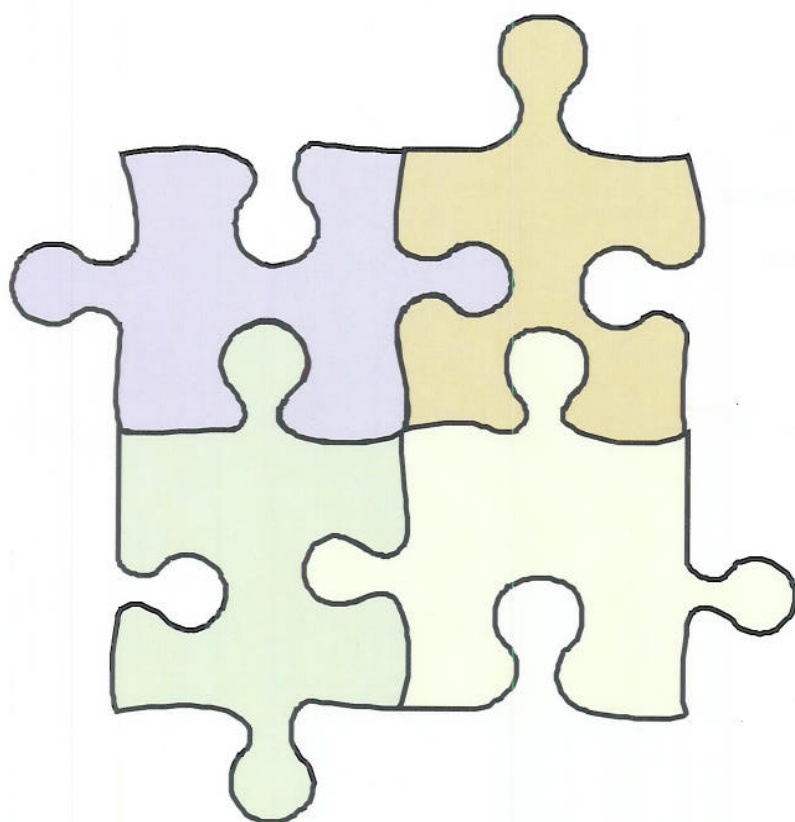
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**Enhancing National and Community Resilience
Integrating Disaster Risks Reduction and Climate Change Adaptation Measures into Development
Planning and Processes in Bangladesh - Guide to Practice**

Date of Publication

November 2009

Authors

Md. Syeedul Haque, Institutional Expert, CDMP

Nasimul Haque, Senior Programme Specialist, CDMP

With comments and feedback throughout drafting this Guide from Mr. Ian Stanford Rector, Chief Technical Advisor, CDMP

Publisher

MINISTRY OF FOOD AND DISASTER MANAGEMENT (MOFDM)

COMPREHENSIVE DISASTER MANAGEMENT PROGRAMME (CDMP)

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH

Phone: 8802 9890 937

E-mail: info@cdmp.org.bd

Url: www.cdmp.org.bd

Abbreviations & Acronyms

ADP	Annual Development Programme
APD	Academy for Planning and Development
BBS	Bangladesh Bureau of Statistics
BCCSAP	Bangladesh Climate Change Strategy and Action Plan
BG	Block Grant
BIDS	Bangladesh Institute of Development Studies
BMD	Bangladesh Meteorological Department
BRAC	Bangladesh Rural Advancement Committee
BWDB	Bangladesh Water Development Board
CBO	Community Based Organization
CC	Climate Change
CCA	Climate Change Adaptation
CCC	Climate Change Cell
CCF	Climate Change Fund
CDM	Clean Development Mechanism
CDMP	Comprehensive Disaster Management Programme
CLP	Char Livelihood Programme
CoP	Conference of the Parties (of UNFCCC)
CPP	Cyclone Preparedness Programme
CRA	Community Risk Assessment
CRD	Climate Resilient Development
CRM	Climate Risk Management
CZP	Coastal Zone Policy
CZM	Coastal Zone Management
DAE	Department of Agriculture Extension
DDMC	District Disaster Management Committee
DFID	Department for International Development
DGoF	Directorate General of Food
DM	Disaster Management
DMA	Disaster Management Act
DMB	Disaster Management Bureau
DMC	Disaster Management Committee
DMP	Disaster Management Plan
DoE	Department of Environment
DP	Development Partner
DPHE	Department of Public Health Engineering
DPP	Development Project Proforma/Proposal
DRR	Disaster Risk Reduction/Directorate of Relief and Rehabilitation
ECNEC	Executive Committee of the National Economic Council
EPIP	Environmental Policy and Implementation Programme
ERD	Economic Relations Division
ERM	Emergency Response Management
EU	European Union
FD	Finance Division
FFWC	Flood Forecasting and Warning Centre
FP	Focal Point
FYP	Five Year Plan

GHG	Greenhouse Gas
GO	Government Organization
GoB	Government of Bangladesh
HFA	Hyogo Framework for Action
ICZM	Integrated Coastal Zone Management
ICZMP	Integrated Coastal Zone Management Project
IDS	Institute of Development Studies
IFAD	International Fund for Agricultural Development
IMDMCC	Inter-Ministerial Disaster Management Coordination Committee
IMED	Implementation Monitoring and Evaluation Division
I-NGO	International Non-Government Organization
IPCC	Inter-governmental Panel on Climate Change
I-PRSP	Interim-Poverty Reduction Strategy Paper
IRD	Internal Resources Division
KM	Knowledge Management
KP	Kyoto Protocol
LACC	Livelihood Adaptation to Climate Change
LDC	Least Developed Country
LDRRF	Local Disaster Risk Reduction Fund
LGD	Local Government Division
LGED	Local Government Engineering Department
LGI	Local Government Institution
LGSP	Local Governance Support Programme
MDG	Millennium Development Goal
MDTF	Multi-Donor Trust Fund
MoA	Ministry of Agriculture
MoC	Ministry of Commerce
MoCAT	Ministry of Civil Aviation and Tourism
MoEF	Ministry of Environment and Forests
MoF	Ministry of Finance
MoFA	Ministry of Foreign Affairs
MoFDM	Ministry of Food and Disaster Management
MoFL	Ministry of Fisheries and Livestock
MoHFW	Ministry of Health and Family Welfare
Mol	Ministry of Industries
MoL	Ministry of Land
MoLGRD&C	Ministry of Local Government, Rural Development and Cooperatives
MoP	Ministry of Planning
MoPEMR	Ministry of Power, Energy and Mineral Resources
MoWR	Ministry of Water Resources
MTBF	Mid-Term Budgetary Framework
NAP	National Agriculture Policy
NAPA	National Adaptation Programme of Action
NDMC	National Disaster Management Council
NEC	National Economic Council
NFiP	National Fisheries Policy
NFoP	National Forestry Policy
NGO	Non-Government Organization
NLUP	National Land-Use Policy
NPDM	National Plan for Disaster Management
NPSWSS	National Policy for Safe Water Supply and Sanitation

NSP	National Seed Policy
NTP	National Tourism Policy
NWP	National Water Policy
ODA	Official Development Assistance
PC	Planning Commission
PIO	Project Implementation Officer
PMO	Prime Minister's Office
PRSP	Poverty Reduction Strategy Paper
RBA	Rights Based Approach
RDCD	Rural Development and Cooperatives Division
RRAP	Risk Reduction Action Plan
RVCC	Reducing Vulnerability to Climate Change project
SDP	Sector Development Programme
SLR	Sea Level Rise
SOD	Standing Orders on Disasters
TA	Technical Assistance
TPP	Technical Assistance Project Proforma/Proposal
TYRIP	Three-Year Rolling Investment Programme
UDMC	Union Disaster Management Committee
UzDMC	Upazila Disaster Management Committee
UK	United Kingdom
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
UN/ISDR	United Nations International Strategy for Disaster Reduction
UP	Union Parishad
UzP	Upazila Parishad
WB	The World Bank

Glossary

<i>Adivasi</i>	<i>indigenous people</i>
<i>Block Grant</i>	<i>special allocation from national budget for specific purpose</i>
<i>Char</i>	<i>low-lying river island</i>
<i>Khas Land</i>	<i>government-owned land</i>
<i>Killa</i>	<i>Raised earthen platform used as a flood shelter for humans and/or animals</i>
<i>Mitigation</i>	<i>meant in this paper exclusively for CC (i.e. reduction of emission of GHGs)</i>
<i>Monga</i>	<i>unemployment leading to seasonal hunger</i>
<i>Parishad</i>	<i>elected council for a local government (e.g. Union, Upazila, etc.)</i>
<i>Pourashava</i>	<i>urban local government meant for 'Municipality'</i>
<i>Union</i>	<i>lowest tier of local government in Bangladesh comprised of a number of Wards</i>
<i>Upazila</i>	<i>lowest administrative unit comprising of a number of Unions</i>
<i>Ward</i>	<i>cluster of villages that constitute a Union</i>

About the Guide

There is significant overlap between the practice and theory of disaster risk reduction (DRR) and climate change adaptation (CCA). However, there is limited coherence and convergence in institutions, organisations and policy frameworks. Both struggle to be incorporated into regular development planning and this aspiration is slowed down by duplication of activities, inefficient use of limited resources and inappropriate policies and/or strategies/technologies, etc.

A key challenge CDMP has rightly focused is integrating DRR and CCA. Most of the first phase of the Comprehensive Disaster Management Programme (CDMP) focused on building capacity, mechanisms and credibility within the Ministry of Food and Disaster Management (MoFDM).

CDMP has achieved some successes towards mainstreaming risk reduction – most notably that all GoB Development Project Proforma/Proposal (DPP) should include a section on risk identification and mitigation measures (approved by the ECNEC in November 2007), and a new Plan of Action for Disaster Risk Reduction produced and financed by the Department of Agricultural Extension (DAE).

To achieve real impact at scale, and to contribute to meaningful poverty reduction efforts, the concept of integration must be embedded across the design and planning processes for all the development initiatives of all relevant sector ministries. New ways of working with a wider range of GoB Ministries and Departments is now the challenge – to raise the focus of risk reduction across government, and to achieve impact at scale.

To truly achieve impact at scale, CDMP will work to accelerate the progress of mainstreaming within other GoB Ministries/Departments and concerned organizations. Some early successes have already been achieved, notably the establishment of Focal Points (FPs) in 64 institutions (34 Ministries + other organizations) by the Climate Change Cell (CCC) of CDMP to carry out the mainstreaming function within their respective domain of work. These will be expanded by providing necessary tools and resources needed to support the work of all planning professionals in line Ministries/Agencies, and the Planning Commission (PC) centrally to influence over the development planning process towards achieving the integration objective.

Technical guidance, resource materials and capacity building will be made available and possible funding for innovative risk reduction activities will be considered. CDMP supports the MoFDM to reinforce the integration of DRR into the work of other line ministries and to strengthen capacity and knowledge to address technical aspects of risk reduction in various sectors. At the local level, existing linkages will be reinforced between line ministry investment, local government annual development planning and the outputs of community-level activities of the project. This will provide more immediate and tangible solutions to risk reduction actions identified by local communities.

This **Guide to Practice** aims to develop a single document which will address mainstreaming of both DRR and CCA issues together in an integrated way within and across different sectors. To this end the Paper tries to make references to all the possible sectors and the issues to be addressed within and among them. The Paper also makes references to relevant policy and planning documents including Disaster Management Act (Draft), Standing Orders on Disasters, Environmental Policy, PRSP and others.

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Executive Summary

Bangladesh is recognized worldwide as one of the countries most vulnerable to natural disasters. This is due to its unique geographic location, dominance of flood plains, low elevation from the sea, high population density, high levels of poverty and overwhelming dependence on nature. Recurring and intensified floods, severe cyclones, storm surges and other disasters, which are thought to be more intensified and frequent due to climate change (CC), adversely affect the country's economy by damaging infrastructure, reducing growth and upsetting the macroeconomic balances.

Disaster risk reduction (DRR) and climate change adaptation (CCA) share a common space of concern: reducing the vulnerability of communities and achieving sustainable development. While CCA is an adjustment in natural and human systems, DRR is the development and application of policies and practices that minimize risks to vulnerabilities and disasters. Thus DRR is an essential part of adaptation – the first line of defense against CC impacts.

The overlapping nature of CCA and DRR is increasingly recognized in recent times. UN/ISDR and UNFCCC are now working closely in this respect. The Hyogo Framework for Action (HFA) also establishes the concern for disaster management in a changing climate. Governments worldwide have also recognized the importance of considering CCA with relevant natural disaster risk reduction measures, and the need for integrating them in a comprehensive manner into the overall development plans and strategies.

For Bangladesh, integrating climate change concerns into all disaster risk reduction interventions along with national development programmes, should be therefore a long-term priority towards achieving Millennium Development Goals (MDGs). The government has already initiated addressing disaster risk reduction and adaptation to climate change through a number of major/important initiatives including the Comprehensive Disaster Management Programme (CDMP). The challenge is to manage natural disasters in a way to *shift the paradigm* from traditional 'relief and rehabilitation culture' of facing extreme natural events towards a culture of 'risk reduction'.

However, in Bangladesh, mainstreaming DRR integrating climate risks and followed by community level adaptation has evolved, like many other developing countries, in a limited scale until now. In fact, *integration* should be a process which refers to engage in a systematic, comprehensive effort (within regular activities among all stakeholder parties) to reduce the risks of prospective damages due to natural and human induced hazards (which may come out in the form of extreme events) by incorporating risk reduction and mitigation measures into the development planning processes.

Need for Sectoral Integration: Horizontal and Vertical

Recently, all the development practitioners (including govt., development partners & other non-govt. actors) are beginning to realize that risk identification and mitigation/management measures should constitute an integral part of their development planning, especially in changing climate scenarios. In operational terms, the major challenge is to bring about changes in the way development is planned and implemented. Indeed, this covers a range of actors and stakeholders at different hierarchy and levels within and across various sectors from the national down to the communities at risks.

At the national level, a Ministry or several Ministries/Agencies may be mandated to service particular sectors like agriculture, water, health, education, physical infrastructure, local governance, etc. and their development agenda. The integration challenge in this case will be to enable these agencies and their professionals to recognize and identify climate and disaster risks to their development plans and processes, explore options to address or reduce risks, and implement/disseminate those to reduce disaster and climate risks in their respective sector and domain of work.

Revisiting Policies and Institutional Settings

In order to approach mainstreaming DRR and CCA in Bangladesh, it is necessary to review existing institutional and policy setting prevailing in the country with a view to identify opportunities and barriers to integration. A total of 10 existing national policies covering major sectors and got relevance to this end have been reviewed which identified a number of opportunities and gaps that may facilitate or hinder an integration process. The findings are summarized in

Table 1 and 2 in Section IV. The Standing Orders on Disasters of the government which provides necessary directives for Disaster Management in Bangladesh has also been reviewed and described briefly, highlighting elements relevant for the integration process. While the National Plan for Disaster Management (NPDM) defines in broad outline the systematic and institutional mechanisms under which DRR and emergency response management (ERM) is undertaken in Bangladesh (also refers to SODs).

On the other hand, formulation of Bangladesh Climate Change Strategy and Action Plan (BCCSAP) 2008 - a 10-year national roadmap - is a significant development towards addressing CC, on the wake of the impacts likely to take place in coming decades. It may be mentioned here that the Bangladesh NAPA - National Adaptation Programmes of Action - produced earlier in 2005, was mainly in response to the on-going CC negotiations process, as part of the negotiated outcome for parties most vulnerable to identify and describe their (LDC Parties) prioritized adaptation needs. Whereas, BCCSAP is expected to be country driven and owned across a large group of stakeholders, as this will be vital to implement the same on the ground. A brief review of all these strategic documents is provided in **Section-IV**.

National Development Planning Process

The national planning process involves execution of mandated functions of the Planning Commission (PC) through formulation of long-, medium- and short-term plans and strategies (e.g. FYP, PRSP, etc.) in consultation with sectoral line Ministries and their Agencies as well as with other actors like civil societies, NGOs and the private sector. The PC also provides secretarial support to the NEC and ECNEC who are the highest bodies for consideration of all development activities reflective of long term national policies and objectives.

The Annual Development Programme (ADP) translating National Plan/Strategy objectives into concrete interventions for a particular year synchronized with the annual development budget. The ADP process, however, should be considered as the “gateway” for integrating various risk reduction measures into sectoral interventions through the mainstreamed development planning process of the country. An important starting point toward disaster and climate resilience through mainstreaming will be to identify the role and responsibility of different Ministries, Agencies and Departments.

Effective identification of roles and responsibilities of different Ministries, Agencies, and Departments to discharge toward disaster and climate resilience through mainstreaming will be an important starting point. Also, the services necessary to support capacity strengthening may be tailored according to the gaps and needs identified in respective scope of work.

The role and functions of institutional entities involved in the development planning processes (i.e. PC/ERD/IMED/Line Ministries and the NEC/ECNEC) need to be considered to have required adjustment through necessary policy directives. It should be noted that the basic framework should centre around existing institutional settings through providing necessary technical assistance (TA) in order to build sufficient capacity through technology transfer to deal with DRR and CCA concerns. Revisiting their roles and functions to have necessary adjustment/revision towards ‘response implementation’ to disaster and climate risks should be the key strategy.

In this respect, multi-stakeholder national coordination committees may be required, chaired by so-called “supra-ministerial authority” (see **Section IV**) with sufficient ability and mandate for macro policy formulation, planning and implementation. This may facilitate managing the national risk reduction and adaptation strategy more effectively.

Conceptual Frameworks for Integration

A holistic framework is needed to be developed to support the government in its efforts to mainstream DRR and CRM. It should incorporate all relevant government agencies and planning processes, and within established frameworks for overall disaster management. In this respect, **four frameworks** have been provided in **Section V (Figures 6 to 9)** which are being practiced in the context of Bangladesh and suggest how risk analysis can be integrated at different stages of planning and implementing development activities:

- **The 1st Framework:** DM planning framework showing the integration process of micro-level plans into meso-, national and sectoral plans involving relevant agencies at different levels.

- **The 2nd Framework:** Identifies the key top-down and bottom-up institutional, policy and capacity building elements for operationalizing the mainstreaming strategies/processes.
- **The 3rd Framework:** Two schemes articulate the major elements of this FW: one provides the strategic links between CRM and DRR and their relationship with development planning, showing the mainstreaming scope and areas; the other identifies the key top-down and bottom-up institutional, policy and capacity building elements for operationalizing mainstreaming strategies.
- **The 4th Framework:** Integration of RR measures into the mainstream development initiatives from national to local and project/programme levels through the ADP processes, showing the anticipated role of key actors at various levels.

Operationalizing Integration Process

Integration is not a technical activity; it requires more than just developing appropriate approaches and tools. Integration of DRR and CRM is a long-term process of engaging with development actors at all levels and identifying suitable, sustainable entry points for such engagements. It also requires effective partnerships among and within a wide range of actors and sectors. In addition to building internal organizational capacity, successful integration may also require conducive relationships with groups and actors that influence the wider response.

A change in organizational culture may be needed to ensure integration of risk reduction concerns at all levels of development oriented activities. Political commitment and motivation, including financial support, can contribute to strengthening the organizational culture. An integration process must recognize that *development* at all levels means well being of individuals and society, the economy and the environment.

Following strategies are suggested as relevant to integrate and mainstream DRR and CRM in the development organizations and processes: **awareness raising**, among all relevant stakeholders; **enabling environment**, *i.e.* proactive organizational environment including policy support; **development of tools**, to identify and facilitate the entire process; **training and technical support**, to enhance organizational and professional capacity; **change in operational practice**, through providing specific guidance to make necessary changes; **measuring progress**, as a systematic monitoring of the process within the organization and outside; and, **learning and experience sharing**, to ensure participation by all in the process.

8-Steps for Implementation

The strategies described above can be used to evolve and implement the integration process through following 8-steps. It should be noted that the steps offer a simple iterative approach which is flexible in its design and use. Also, the duration of each of the steps may vary from institution to institution owing to different levels of organizational dynamics, culture and mandate.

1. Understanding of disaster and climate risks;
2. Contextualizing risks in relation to sectors and concerned agencies/departments;
3. Exploring range of disaster and climate risk reduction options in relation to mandated goals, targets;
4. Identifying priorities, needs, gaps, cross- and inter-sectoral concerns/linkages;
5. Planning to address priorities, needs, gaps, cross-and inter-sectoral issues/concerns;
6. Mobilizing Resource, both internal and external;
7. Implementing priority risk reduction activities as anticipatory interventions, addressing needs, filling gaps; and,
8. Reviewing/monitoring disaster and climate proofing of activities, programmes and projects.

Local Level Integration: CDMP Learning

CDMP empowers communities to identify and analyze the hazards and risks they face through a Community Risk Assessment (CRA) process. This is a participatory and inclusive tool for risk reduction, poverty alleviation and sustainable livelihood development. To support the action plans – namely Risk Reduction Action Plan (RRAP) – that comes out of the CRA process, the Local Disaster Risk Reduction Fund (LDRRF) provides financial and technical

assistance to the most vulnerable groups in disaster prone communities to enable them to strengthen their capacity to address local disasters, including using indigenous knowledge. It also contributes towards strengthening the institutional capacity of Disaster Management Committees (DMCs) at Union, Upazila and District levels. In addition, NGOs/CBOs are also supported in implementing risk reduction and capacity building initiatives.

One key lesson identified is that in developing detailed RRAPs, expectations have been raised amongst the community members and the local government institutions (LGIs). Such expectations are rarely met outside of the CDMP project unless they can be included in the annual development fund (*i.e.* ADP Block Grant) at the local government level. Lessons from the World Bank-funded Local Government Support Programme (LGSP) indicate that the Union Parishads (UPs) represent key building blocks for local level investment planning and prioritization under the current system of decentralization in Bangladesh. Thus, mainstreaming DRR and CCA into this mechanism would be an ideal way of influencing spending decisions at the local level through *ADP Block Grant (BG)* programme of the central government.

Way Forward

The proposed design of CDMP II, building on the strengths of CDMP I, recognizes that the seeds of an inclusive, participatory and rights-based approach (RBA) to social development have been sown in Phase I. The Phase II is about pruning and shaping the approach and implementation of CRAs and RRAPs towards a more collaborative and empowering end. It is suggested that in CDMP II different CRA groups choose their preferred risk reduction intervention, keeping in mind the community's inputs and contribution from the local government. This will necessitate the participation of local level government officials and where possible, the UP Chair and relevant ward member.

It is also recommended that CDMP II consider mainstreaming disaster management, risk reduction and adaptation to climate change at the macro level through on-going development programmes and projects under the ADP for both rural and urban sectors. This would make it possible for CDMP II to scale up and spread its concept of integrating DRR and CCA nationwide in a cost effective manner.

Finally, DRR is now lending its expertise and humanitarian experience to CCA programmes. For example, DRR's knowledge and expertise about building resilience to existing climate variability is a useful starting point for developing adaptation strategies/policies. In turn, the DRR community is paying more attention to longer term changes in the climate and the shifting hazard burden that CC may cause. This interrelationship should be enhanced while developing any such strategies towards achieving the mainstreaming/integration objective.

I. Introduction

Bangladesh is recognized world wide as one of the countries most vulnerable to natural disasters. This is due to its unique geographic location, dominance of flood plains, low elevation from the sea, high population density, high levels of poverty and overwhelming dependence on the nature. Recurring and intensified floods, severe cyclones, storm surges and other disasters, which are thought to be more intensified and frequent due to climate change, adversely affect Bangladesh's economy by damaging infrastructure, reducing economic growth and upsetting the macroeconomic balances.

The scientists of the Intergovernmental Panel on Climate Change (IPCC) in their Fourth Assessment Report, 2007 have confirmed rapid global warming and resulting changes in the climate, providing evidence from observations all over the world that human societies, ecosystems and countries are already affected from its impacts. Agriculture, particularly the crop, livestock and poultry sub-sectors, and small and medium scale industries are likely to be the most adversely affected in the short run. Although global reduction of GHGs emission (i.e. **mitigation**) is a must to overcome the challenge in the long-run, **adaptation** is a short-term but essential measure to tackle the observed changes locally. Some adverse climate change impacts are unavoidable in the coming decades due to the concentration of greenhouse gases (GHGs) already in the atmosphere.

Climate change is altering disaster risk, not only through increased weather related risks, sea-level rise (SLR) and temperature and rainfall variability, but also through increases in societal vulnerabilities from stresses on water availability, agriculture and ecosystems. Thus, disaster risk reduction and climate change mitigation and adaptation share a common space of concern: reducing the vulnerability of communities and achieving sustainable livelihood development.

II. Rationale

Climate change adaptation (CCA) is an adjustment in natural and human systems, which occurs in response to actual or expected climate changes or their impacts. In human systems, adaptation can reduce harm or exploit opportunities. Disaster risk reduction (DRR) is the development and application of policies and practices that minimize risks to vulnerabilities and disasters. DRR is an essential part of adaptation – it is the first line of defense against climate change impacts, such as increased flooding or regular droughts.

The overlapping nature of CCA and DRR is increasingly recognized worldwide. The United Nations International Strategy for Disaster Reduction (UN/ISDR) and the United Nations Framework Convention on Climate Change (UNFCCC) are now working closely in this respect. The Hyogo Framework for Action (HFA) also establishes the concern for disaster management in a changing climate. Governments worldwide have recognized the importance of coordinating CCA with relevant natural disaster risk reduction measures and the need for integrating these considerations in a comprehensive manner into the national development plans and strategies for poverty reduction.

Bangladesh has therefore given priority to both adaptation and disaster risk reduction measures. For Bangladesh, integrating climate change concerns into all DRR interventions as well as in all development activities has thus become a long-term priority towards achieving Millennium Development Goals (MDGs). The government has already initiated addressing disaster risk reduction and adaptation to climate change through a number of initiatives including the Comprehensive Disaster Management Programme (CDMP). The challenge is to manage natural disasters in a way to '*shift the paradigm*' from traditional '*relief and rehabilitation culture*' of facing extreme natural events towards a culture of '*risk reduction*'.

Changing the way we develop – integrating DRR and CCA into development planning and processes to reduce development risks

In operational terms, the major challenge is to bring about changes in the way we plan and implement development initiatives. This covers a range of actors and stakeholders at different hierarchy and levels from national policy making to the communities at risks.

At the national level, a Ministry or several Ministries/Agencies may be mandated to service particular sectors like agriculture, water, health, education, physical infrastructure, local governance, etc. and their development agenda. The integration challenge in this case will be to enable these agencies and their professionals to recognize and identify climate and disaster risks to their development plans and processes, explore options to address or reduce risks, and implement/disseminate those to reduce disaster and climate risks in their respective sector and domain of work.

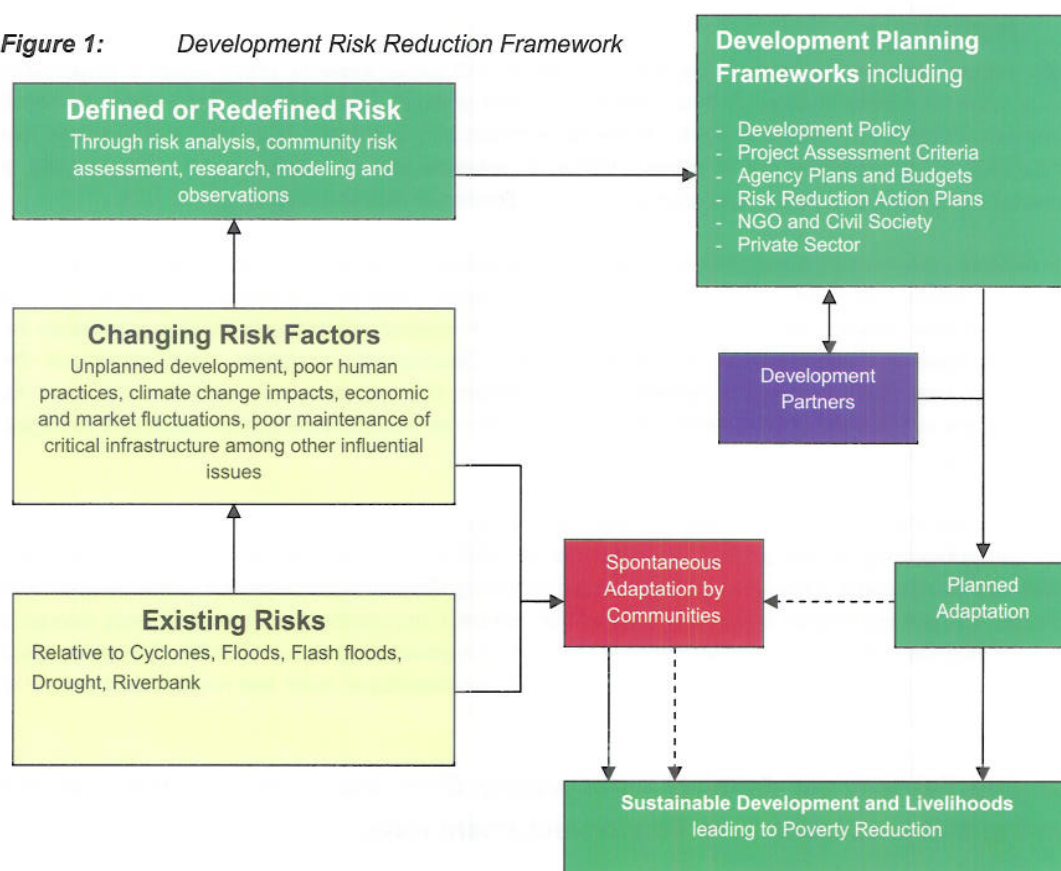
At District, Upazila and Union levels, the offices under different line Ministries/Agencies and Departments as well as the Upazila and Union level development plans should integrate assessment of risks, and response to reduce risks as well as adaptation priorities from households and communities.

At the household level, this would imply integrating disaster and climate risks in the way we practice our livelihood and protect lives, home, property, etc.

Development planning at different levels need to take consideration of the existing risks as well as the changing risk factors which question the achievement of its goals and targets. Institutions and communities at risk are informed from experience and some risk reduction responses are undertaken spontaneously.

Redefining risks over time informs all stakeholders to incorporate DRR and CCA in development planning and processes. Planned DRR and CCA incorporated to development activities (within projects/programmes) address sustainable development and livelihood security, reducing risks, losses and damage for the nation as well as communities.

Figure 1: *Development Risk Reduction Framework*



III. Challenges and Opportunities for Mainstreaming

In Bangladesh, mainstreaming disaster risks reduction integrating climate risks and followed by community level adaptation have evolved in a limited scale until now. Recently, all the stakeholders (including the government, development partners and other non-government actors) are beginning to realize that risk identification and management measures (including responses) should constitute an integral part of their development planning, especially in changing climate scenarios.

In terms of progress till date in mainstreaming DRR and CCA in developing countries, there are very few to refer to. However, the developing countries are increasingly recognizing the need for mainstreaming these concerns into their regular activities and processes, and taking necessary actions towards that end.

Indeed, mainstreaming of DRR and CC issues in an integrated way into the development planning and processes refers: *to engage in a systematic, comprehensive effort to reduce the risks of prospective damages due to natural (including climatic) and other factors through incorporating risk reduction measures into the overall development planning process.*

Some of the basic pre-requisites to facilitate mainstreaming are: *awareness, orientation, capacity building and advocacy* at different levels and spheres of operation. The mainstreaming process would, therefore, emphasize on the followings:

- (a) coordination across institutions and tiers (both horizontal and vertical);
- (b) partnership among all stakeholders, including partnerships between agencies in charge of implementing development programmes and targeted beneficiary groups; and,
- (c) integration of local level plans into meso-scale plans, of meso-scale plans into macro-level plans, and of macro-level sectoral plans into the national development plans.

It should also be considered whether the potential risks would:

- i) put investment for development activities at additional risk;
- ii) could aggravate vulnerability directly or indirectly; and,
- iii) could pose a threat to local level resilience in any perceived way, etc.

However, in order to approach mainstreaming DRR and CCA in Bangladesh, it is necessary to review the existing institutional and policy setting prevailing in the country, with a view to identify opportunities and barriers to the integration process. This is presented in **Section IV**.

IV. Revisiting existing Policy and Institutional Setting

In **Section IV a**, national policies most relevant and with potential to integrate DRR and CCA are reviewed, with a view to identify the key elements in each which facilitate DRR and CCA integration. Elements in these policies that may be potential barriers to integration are also identified. The Standing Orders on Disasters of GoB, which is providing the necessary directives for Disaster Management and DRR, is described briefly in **Section IV b**, highlighting the elements relevant for the integration purpose. Finally, in **Section IV c**, the institutional setting for development planning in Bangladesh is discussed, identifying the need for a 'supra-ministerial institutional platform' to facilitate DRR and CCA integration in a coordinated manner.

a. Review of Policy Setting

Revisiting relevant policies with potential to address climate change adaptation and disaster risk reduction

A number of major existing national policies have been reviewed to identify opportunities and gaps that may facilitate or hinder an integration process. These are:

1. Coastal Zone Policy (Revised Draft, 2003, MoWR)
2. National Water Policy, 1999 (MoWR)
3. National Agricultural Policy, 1999 (MoA)
4. National Seed Policy, 1993 (MoA)
5. National Land-Use Policy, 2001 (MoL)
6. National Forest Policy, 1994 (MoEF)
7. National Fishery Policy, 1998 (MoFL)
8. National Policy for Safe Water Supply and Sanitation, 1998 (LGD)
9. Environmental Policy and Implementation Programme, 1992 (MoEF)
10. National Tourism Policy, 1992 (MoCAT)

The findings from the review are summarized in **Table 1**, which identifies policy elements that facilitate DRR and CCA. Some limitations or barriers were also identified in the policies reviewed, which are summarized in **Table 2**.

Policy elements that can facilitate disaster risk reduction and adaptation to climate change

Only one major national policy, the Coastal Zone Policy (CZP), makes specific reference to climate change.

However, a predominant number of the major policies contain elements facilitating adaptation to climate change. The following table summarizes the key elements in major national policies which can aide adaptation to climate change as well as disaster risk reduction.

Table 1: Policy Element Facilitating Disaster Risk Reduction and Adaptation to Climate Change

Sl	Policy	Elements Facilitating DRR and CCA
1	Coastal Zone Policy (CZP, 2003)	<ol style="list-style-type: none">1. Mentions climate change: commits an institutional arrangement to observe change in climate system in Bangladesh2. Assures maintaining coastal embankment to tackle sea level rise3. promotes tidal basin management and planned coastal plantation4. Focuses on pro-poor employment and disaster risk management capacity building for the poor5. Recognizes the importance of 'clean water', even 'saline-free' water supply along the coastal zone

2	National Water Policy (NWP, 1999)	<ol style="list-style-type: none"> 1 Identifies core water related problems that will be accentuated under climate change 2 Emphasizes water related risk zoning 3 Identifies the importance of developing sub-regional and local water management planning 4 Focuses on main rivers, management of flood, drought, in-stream salinity 5 Addresses both excess water and water scarcity (temporal distribution) 6 Emphasizes early warning and preparedness 7 Focuses on flood proofing, both structural and non-structural measures for flood management 8 Focuses on water use efficiency 9 Fosters regional cooperation for trans-boundary rivers; river basin management
3	National Agriculture Policy (NAP, 1999)	<ol style="list-style-type: none"> 1. Emphasizes use of ground and surface water for irrigation 2. Stresses on the improvement of water use efficiency in agriculture 3. Calls for creating access to credits and inputs at proper time, in adequate quantities 4. Focuses on research and development of hazard resistant crops 5. Emphasizes crop diversification 6. Focuses on post disaster agricultural rehabilitation through emergency assistance programme 7. promotes inter-cropping and soil conservation
4	National Seed Policy (NSP, 1993)	<ol style="list-style-type: none"> 1. Calls for the development of robust seeds and to avoid crop loss due to climate hazards 2. Focuses on continued research and development of improved seeds
5	National Land Use Policy (NLUP, 2001)	<ol style="list-style-type: none"> 1. Provides improved guidance to use char land, khas land 2. Focuses on hazard tolerant dwellings/settlement 3. Stresses on the creation of 'green belts' along the coast 4. Emphasizes saving the remaining forest area under vegetation
6	National Forestry Policy (NFoP, 1994)	<ol style="list-style-type: none"> 1. Emphasizes tree plantation along the coastal area 2. Flag the need of an integrated policy regime for sustainable management of the Sunderbans forest
7	National Fisheries Policy (NFiP, 1998)	<ol style="list-style-type: none"> 1. Focuses on conservation of (aquatic) biodiversity 2. Promotes rice-fish and rice-shrimp culture 3. Provides a hint of zoning the shrimp area along the coastal belt
8	NPSWSS 1998	<ol style="list-style-type: none"> 1. Focuses on safe water supply (mostly arsenic free water) and sanitation 2. Addresses storm water drainage in urban areas
9	Environmental Policy and Implementation Programme (EPIP, 1992)	<ol style="list-style-type: none"> 1. Emphasizes conservation of agricultural resource base, sustainable management of water, land, forest and biodiversity resources 2. Calls for removal of adverse impacts of interventions in water management and flood mitigation 3. Stresses on arresting soil salinity; in-stream salinity intrusion 4. Calls for control of expansion of settlements and urbanization 5. Emphasizes revitalization of current regulatory regime
10	National Tourism Policy (NTP, 1992)	<ol style="list-style-type: none"> 1. Calls for conservation of wildlife 2. Calls for creation of infrastructure for tourism

Limitation and Drawbacks of Major Policies

The review of major national policies also identifies some weaknesses and limitations which are significant while considering integration of disaster risk reduction and adaptation to climate change into development planning and processes. These are presented in **Table 2**.

Table 2: *Limitations in Major National Policies with regard to DRR and CCA Integration*

National Policy	Weakness/Limitation
CZP	Heavily focused on public resources and efforts on addressing coastal problems and priorities
NWP	Does not establish the linkage between high salinity and drinking water
EPIP	No mention of Climate Change or Adaptation
NAP	Dominance of rice based livelihoods and agricultural growth
NLUP	Unrealistic target set for area under forest vegetation
NFoP	Unrealistic target set for area under forest vegetation
NFiP	Promotion of extensive shrimp culture
NPSWSS	The issue of high salinity in drinking water not adequately addressed
NTP	Promotion of tourism infrastructure in vulnerable zones

b. Standing Orders on Disasters (Revised, August 2008)

The GoB's Standing Orders on Disasters (SOD) outlines the disaster management arrangements in Bangladesh and describes the detailed roles and responsibilities of different Committees, Ministries, Departments and other Organizations involved in DRR and ERM, and establishes necessary actions required in implementing Bangladesh's Disaster Management Model, e.g. defining the risk environment, managing the risk environment and responding to the threat environment.

The Standing Orders have been prepared with the objective of making the concerned persons understand their responsibilities regarding disaster management at all levels, and accomplishing them. It also provides the necessary institutional mechanism for much needed coordination functions among and within the actors at various levels in both vertical and horizontal dimensions.

The National Disaster Management Council (NDMC) and Inter-Ministerial Disaster Management Coordination Committee (IMDMCC) will ensure coordination of disaster related activities at the National level. Coordination at District, Upazila and Union levels will be done by the respective District, Upazila and Union Disaster Management Committees (DMCs). The Disaster Management Bureau (DMB) will render all assistance to them by facilitating the whole process. The institutional mechanism for disaster management is attached at **Annexure-1**.

It is envisaged that all Ministries, Divisions/Departments and Agencies shall prepare their own 'Action Plans' in respect of their responsibilities under the SODs for efficient implementation. They will also organize proper training of their officers and staff employed at District, Upazila, Union and village levels according to their own *Action Plans* so that they can help in rescue, evacuation and relief work at different stages of disaster. The local authority shall arrange preparedness for emergency steps to meet the disaster and to mitigate distress without waiting for any help from the centre. The general responsibility for government agencies and detailed DRR responsibilities for each Ministry/Agency/others are attached at **Annexure-2** and **3** respectively.

The SODs are intended to be followed during *Normal times, Precautionary and Warning stage, Disaster stage* and *Post-disaster stage*. It declares strong institutional modalities to deploy human resources to manage disasters and focuses on participation of both government and non-government institutions. SOD also stresses on the improvement of disaster warning and focusing on preparedness.

SOD provides the basis for adaptation (e.g. through disaster preparedness) and disaster risk reduction activities on the ground, but in reality, such policies are not really implemented due to lack of institutional adaptation of the local level actors including the local government institutions (LGIs). Therefore, it is recommended to activate and empower the local level officials, particularly the LGIs as a means of institutional adaptation.

The Revised SOD in 2008 has taken consideration of natural hazards (like cyclone, flood, riverbank erosion, drought, flashflood, seasonal storm and tornado), and a few man-made hazards (fire, building collapse, ferry tragedy, road accidents). Additional risks considered are for earthquake, tsunami and climate change. Climate change adaptation issues particularly need consideration both at national and community levels.

There are some areas/hazards for which there is little or no coverage in the SOD (e.g. salinity ingress) which have linkages to climate change; so it is recommended to expand the scope of SOD to cover these forms of disaster risks such as acute moisture stress-led drought, salinity ingress, etc.

The multi-level decentralized mechanism of Councils and Committees from the national to grassroots levels which has been adopted by the government through the SODs (e.g. the high powered NDMC and IMDMCC at the national and DMCs at local levels) have evolved as effective bodies to promote and coordinate risk reduction and other activities relating to disasters. While NDMC is working at the policy level, the IMDMCC is responsible for implementing the directives followed by coordination and supervision at all levels that cut across various sectors down to the District, Upazila and Union through respective DMCs. These institutional arrangements have given due importance in the PRSP II for managing disasters in the country and thereby reducing poverty.

The inherent philosophy of SOD when originally adopted (in 1999) was based on the traditional 'relief and rehabilitation culture' during and after the disasters. The DRR concept was taken into consideration later (Revised SOD, 2008) which perhaps not fully integrated into the government functionaries as yet. It is advisable to consolidate SODs into a broader policy framework to reflect the vision and dynamics of the RR culture.

c. Review of the Institutional Setting for Development Planning

The Bangladesh Planning Commission (PC) plays the key role and coordinating functions in regard to national development planning process along with sectoral line (development) Ministries. PC is entrusted with the task of planning socio-economic development of the country with a three-fold role in the development processes: viz. advisory, executive, and coordination roles.

The planning process (discussed in more details in **Section V**) involves execution of the mandated functions of PC, which according to the Rules of Business of the government, broadly involves overall macro policy planning for the country, including: i) evaluation of the economy, in more concrete terms: formulation of perspective plan, five year plan (FYP), three year rolling investment programme (TYRP), and strategies for poverty reduction, like PRSP, etc.; ii) sectoral planning, and programme and project planning; iii) preparation of annual development programme (ADP); and, iv) appraisal and processing of individual development projects.

The PC is comprised of seven broad Divisions, two of which are for macro-economic planning (formulation of FYP, PRSP, etc.) and programming (ADP formulation, resource allocation, etc.) purposes; while the rest five Divisions deal with Sectoral planning and project interventions covering all the development Ministries and Divisions and their mandated sectors. On the other hand, all development Ministries/Divisions have got their own planning unit initially known as "*Planning Cell*" which later on merged with the '*development wings*' of respective

Ministries/Divisions as a regular set-up, and manned by professionals from the Planning Cadre administered by the PC/MoP to deal with development planning relating to project/programme formulation and processing.

Thus, the organizational structure and the roles and responsibilities of existing Planning Commission of the country provides the opportunity of integrating DRR and CCA issues in its mainstream functions of development planning in an integrated manner involving all the sectors and actors.

The PC also provides secretarial support to the National Economic Council (NEC) and its Executive Committee, i.e. ECNEC who are the highest bodies chaired by the Prime Minister, and/or the Finance Minister as alternate Chairman for the ECNEC, with the council of Ministers/Advisors as members, for consideration of all development activities reflective of long-term national policies and strategies.

The NEC is the highest body for consideration of all issues relating economic development with specific function of providing overall guidance for implementing macro plans and policies of the country. It has got the supreme authority to decide on any development activities including projects/programmes and may appoint any committee/sub-committee (such as ECNEC) to assist NEC in carrying out its mandated functions. Hence, a strong linkage and coordination mechanism is needed to plan, integrate and implement any risk reduction initiatives (e.g. relating to DRR & CCA) within and amongst this existing institutional set-up of the country.

Therefore, a '*supra-ministerial institutional platform*' is felt required to support and facilitate the DRR and CCA mainstreaming process with sufficient decision making authority and influence over other stakeholder Ministries/Agencies. In this connection, clustering of thematic issues to be addressed and/or activities to be accomplished relating to the integration process becomes logical and effective, if done in an orchestrated way (as described in **Table 3**).

Table 3: Supra-Ministerial Institutional Platforms to Facilitate Integration Process – Issues & Levels

	Cluster I	Cluster II	Cluster III	Cluster IV
Themes/ Issues	Intl. & Regional negotiation processes; Intl. Treaties, Protocols, Conventions, etc.	Adaptation & KM: Macro Plans & Strategies; Risk Financing Mechanisms	Disaster Management & RR: Advocacy and ground level coord.; multi- and cross-sectoral issues	Mitigation: Clean Energy and Clean Development Mechanism (CDM)
Lead Ministry/ Agency	MoEF, MoFA, MoFDM, IPCC-UNFCCC, UNISDR processes	MoF, MoP/PC, ERD, Dev. Partners, Nat-Int Research Orgs/ Academics	MoFDM, MoLGRD&C, MoWR, DMB, DRR, DMCs, Local Govt. Institutions (LGIs)	MoPE&MR, MoEF, MoI, Energy/ Power Divs, Private Sector, IPCC-UNFCCC
Associate Ministry/ Agency/ Institution	PMO, MoP, DoE, DMB, other relevant Insts. & pvt. sector orgs.	All development Ministries/Agencies Non-govt. Actors, INGOs, civil soc.	MoEF, MoL, BWDB, BMD, DoE, DoF, other sect. Ministries/ Agencies, NGOs	MoFA, MoF&P/PC, MoCom, Pvt. Sector, Multinationals, Prod-Con Groups

The anticipated institutional "*platforms*" drawn in **Table 3** can coordinate the integration of climate change and disaster risks into various sectoral plans and programmes under different Ministries and Agencies at various operational levels in association with other existing mechanisms.

It should be noted here that the above '*institutional mechanism*' is thought mainly to carry out the coordination function, rather than to dictate or influence others' "*own business*", and as such should have no administrative implication(s) over partner organizations' own regulatory mechanisms.

The recently declared two high-powered Committees by the present government to deal with CC adaptation and financing respectively is, however, a breakthrough towards forming such “*supra-ministerial authority*”. While one Committee headed by the Planning Minister has given the responsibility to deal with the strategic adaptation affairs, the other will look after the financing aspects of CC adaptation in Bangladesh with the Financial Advisor to the Prime Minister in the Chair.

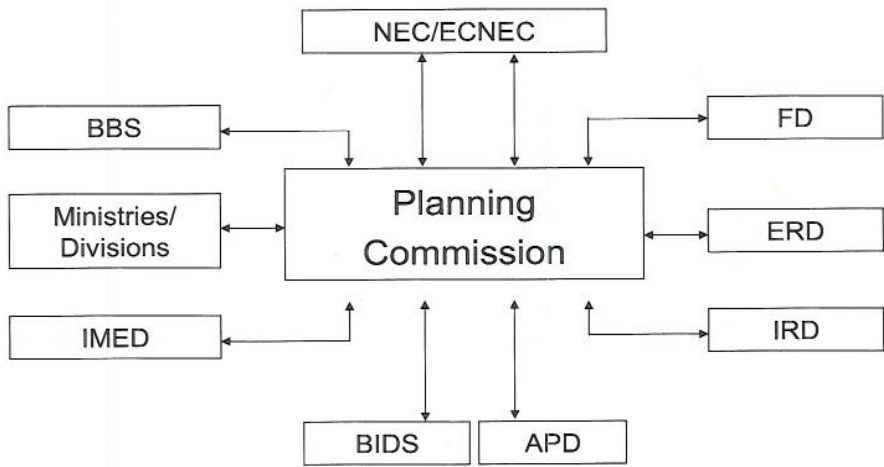
The government also is in the process of evolving an institutional setting and arrangement to address climate change as a cross-cutting development concern. The schematic diagram shown at **Figure 2** represents that evolving setting and mechanism which shows the interrelationship between the two Committees already formed along with other sub- or expert- committees and various stakeholder institutions from the macro down to the functional levels, indicating their envisaged roles and responsibilities. However, the ultimate result would largely depend on proper functioning of and successful coordination within and among these functionaries for such a multi-sectoral complex thematic mechanism.

Role of other Macro Functionaries

The Planning Commission (PC) has got a multi-dimensional linkage with other macro institutional players in the development arena. The Economic Relations Division (ERD) and the Finance Division (FD) of the Ministry of Finance (MoF) are responsible for materializing foreign assistance and domestic resources respectively for financing development projects and programmes. In case of external funding the role of ERD becomes crucial with regard to negotiation and processing aspects which are expected to be done through a process of discussion and consultation with other stakeholder Ministries/Agencies of the government on the one hand, and the development partners on the other.

The FD is responsible for allocating domestic resources collected by the Internal Resources Division (IRD), in consultation with the Programming Division of the PC, as well as has got a macro monitoring and coordinating role along with the Implementation Monitoring and Evaluation Division (IMED) of the Ministry of Planning (MoP). Besides Bangladesh Bureau of Statistics (BBS) and the Academy for Planning and Development (APD) provide necessary statistics and capacity building support services respectively, while Bangladesh Institute of Development Studies (BIDS) plays a 'think-tank' role to the whole planning process. **Figure 3** below shows these institutional linkages among key actors centered around PC and the NEC/ECNEC processes for development planning in Bangladesh.

Figure 3: Existing Institutional Setup and their Linkages to Development Planning Processes in Bangladesh



Source: Bangladesh Planning Commission, 2007

V. The Planning Processes

a. National Development Planning Process

The national development planning process involves execution of the mandated functions of PC through formulation of long-, medium- and short-term plans and strategies in consultation with sectoral line Ministries and their Agencies as well as with other actors like Civil Societies, NGOs and the Private Sector. While individual project/programme planning is being done by the concerned planning unit of respective Ministries/Divisions through generating ideas from the sectoral (macro) plans, classified into several types depending on the nature of interventions. These are processed and finally included in the ADP through the respective Sector Division of the Planning Commission. The roles and responsibilities of and linkages among major stakeholder institutions associated with the whole process have already been highlighted in **Section IV**.

Annual Development Programme: *the Gateway*

The ADP translating national Plan/Strategy objectives into concrete interventions for a particular year synchronized with the annual development budget from the Ministry of Finance (own resources from IRD & available ODA mobilized by ERD). The process involves a series of inter-ministerial discussion and consultation sessions followed by a number of typical planning and procedural stages.

ADP process may be considered as the “*gateway*” for integrating various risk reduction measures into sectoral interventions through the mainstreamed development planning process of the country. The **framework** provided in **Section VI, Figure 7** outlines the anticipated roles of key Ministries and their Agencies at national and local levels in regard to facilitating the integration process. It is envisaged that various Ministries, their Departments and Agencies will have both regulatory and coordinating functions at different levels to facilitate the integration of DRR and CCA into the overall planning process.

Effective identification of roles and responsibilities of different Ministries, Agencies and Departments need to discharge toward disaster and climate resilience through mainstreaming will be an important starting point. Also, the services necessary to support capacity strengthening (through providing training and developing tools and techniques for screening projects and activities) may be tailored according to the gaps and needs identified in respective scope of work.

In this respect, multi-stakeholder national coordination committees chaired by so-called “*supra-ministerial authority*” already discussed in **Section IV** may facilitate managing the national risk reduction and adaptation strategy/plan more effectively.

Formulation of Macro Plan/Strategy: the MDG Perspective and PRSP

The process was initiated with the formulation of Interim-Poverty Reduction Strategy Paper (I-PRSP) in 2003 for attaining the MDGs. The finalized document was adopted in 2005 as “*Unlocking the Potentials*” with the aims of: i) accelerating the process of reducing income poverty; ii) achieving universal primary education goal; iii) promoting gender equity and empowerment of women; iv) reducing infant, child and maternal mortality rates; v) improving sanitation and access to safe drinking water; vi) containing HIV/AIDS, malaria and other communicable diseases; and, vii) focusing on areas of global partnership for development.

After having the PRSP II for FY 2009-2011, the newly elected Government in 2009 has already considering to back to the Five Year Plan (FYP) with envisaged vision for development. However, the process and the document itself as such should still be valid as strategic guidance toward attaining overall development goals and targets for reducing the country’s poverty situation.

PRSP II as “Moving Ahead” has delineated the following group of broad-based strategies to provide ‘policy and strategic support’ to disaster management (DM) with reference to the draft Disaster Management Act (DMA):

- first, disaster management will involve management of both risks and consequences;
- secondly, the community will be involved in protecting lives and properties with greater involvement of local government bodies; and,
- thirdly, non-structural mitigation measures like community disaster preparedness, training and advocacy need to be emphasized.

It also emphasized the need for peoples’ participation in DM and calls for a significant dimension of government efforts to create a “disaster resilient nation” through establishing a mechanism to clarify and strengthen the roles of stakeholders like NGOs, the civil society, and academia. In this respect, incorporation of DM awareness matters into primary and secondary levels curricula and the proactive role of media have also been highlighted in this strategic document as part of the national planning exercises.

With regard to CCA, the PRSP II has emphasized an identification of adaptation measures according to *sectoral* (e.g. improved agricultural varieties), *multi-sectoral* (e.g. improved watershed and coastal zone management), and, *cross-sectoral* (e.g. public awareness, climate research, modeling and data collection, KM, etc.). It also noted that the “ecosystem approach” to CCA is a strategy for the integrated management of land, water and living resources which promote conservation of these resources and sustainable use in an equitable way towards contributing poverty alleviation.

b. Disaster Management Planning Process

Disaster Management Plans

The Bangladesh National Plan for Disaster Management is a strategic document to be effective for a certain period of time. This is an umbrella plan which provides overall guideline for relevant sectors and the disaster management committees at all levels to prepare and implement their plans.

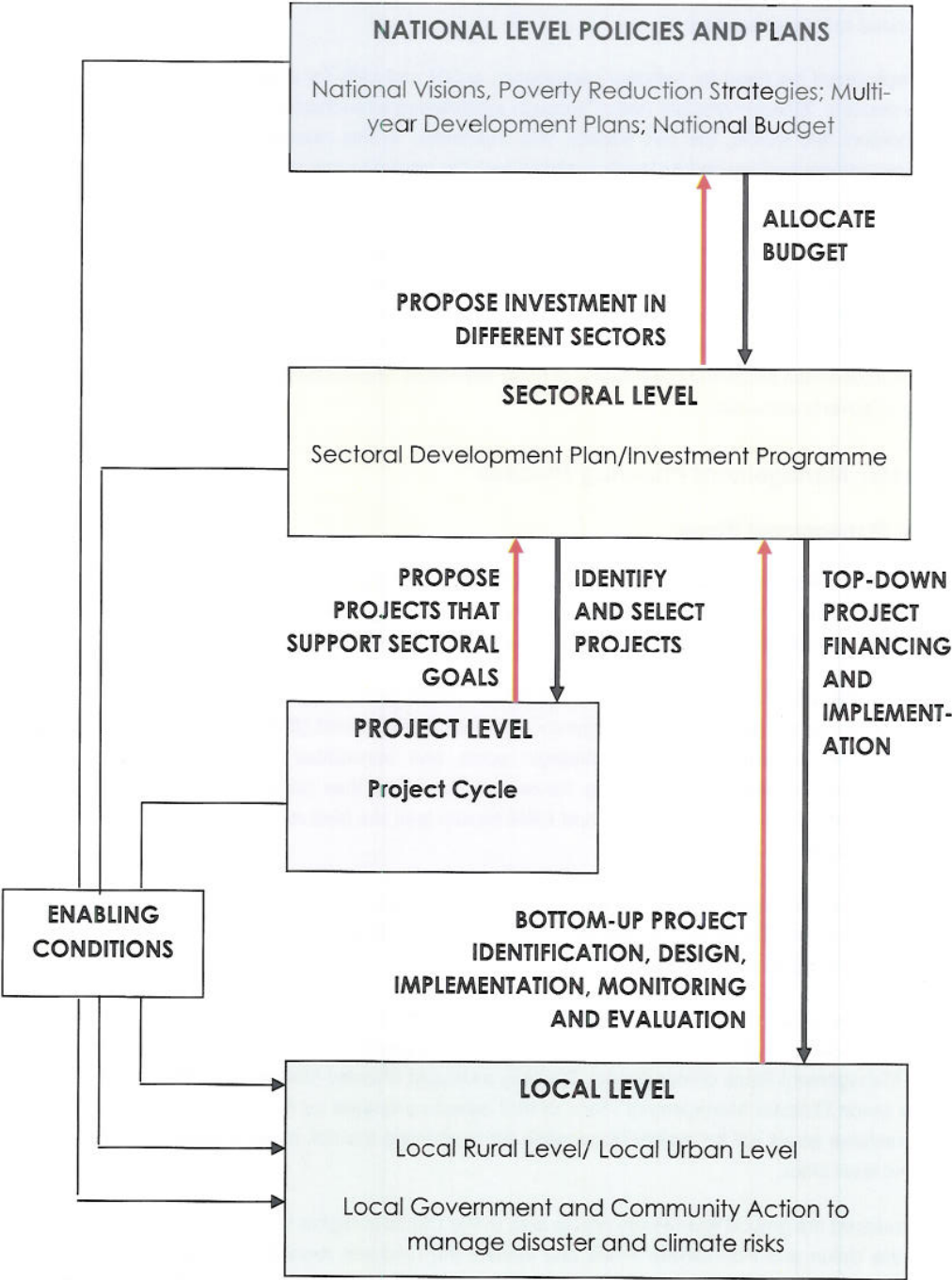
The National Plan for Disaster Management (NPDM) defines in broad outline the systematic and institutional mechanisms under which DRR and emergency response management (ERM) is undertaken in Bangladesh. It outlines disaster management vision, strategic goals and conceptual framework. It establishes disaster management and regulative and planning frameworks, and identifies priority areas for DRR and ERM. The MoFDM being the focal Ministry for DRR and ERM should take the lead role in risk reduction and management planning processes.

Additionally, there will be a few hazard specific management plans, such as Flood Management Plan, Cyclone and Storm Surge and Tsunami Management Plan, Earthquake Management Plan, Drought Management Plan, River Erosion Management Plan, etc.

Moreover, there will be a detailed Disaster Management Plan for each District, Upazila, Union and Pourashava and City Corporation of the country. A District Disaster Management Plan will be the compilation of the Upazila Disaster Management Plans of that District. Similarly a Upazila Disaster Management Plan will be the compilation of all the Union Disaster Management Plans of that Upazila prepared by the Union DMCs. So, DMCs at Union and Paurashava levels will be mainly responsible for conducting the risk assessments (like CRAs) and prepare the ground level plans.

Once developed the ground level Plans will be sent to the DMCs at higher levels, whose role will be to verify and compile the Union and Pourashava Plans and identify the resource requirements for the Upazila and District. Such a ‘framework’ for disaster management planning in Bangladesh is presented in **Section VI at Figure 5**. At the same time it needs proper decision making at appropriate level(s) in order to synchronize the anticipated activities to respective policy/plan objectives and visions of the government facilitated by an enabling environment along with sufficient investment and budget allocation (see **Figure 4**).

Figure 4: Decision Levels in the Government concerning Planning and Development



c. Climate Change Adaptation Planning Process

Bangladesh Climate Change Strategy and Action Plan 2008 – a ten year national roadmap

The Ministry of Environment and Forests (MoEF) formulated the Bangladesh Climate Change Strategy and Action Plan (BCCSAP), in early September, 2008. This is a significant development on the GoB part as climate change has emerged and established, worldwide as well as in the national agenda, as one of the greatest threats to our right to survive and develop as a nation on the wake of the impacts likely to take place in the coming decades. The BCCSAP complements on-going efforts of the government toward responding to CC at national level on the one hand, while opening opportunities to share and inform on Bangladesh's needs toward addressing this concern, especially with the DPs and in the international negotiation process to solicit and secure our right to adaptation financing and climate resilient development (CRD).

The BCCSAP could not have chosen better timing, considering the stage of the global response to climate change process, and the increasing climate induced hazards and extreme events witnessed in this country from which millions are still struggling to recover. While the Bangladesh NAPA, the National Adaptation Programmes of Action was produced in 2005, it was mainly in response to the on-going climate change negotiations process, as a part of a negotiated outcome for parties most vulnerable to identify and describe their (LDC Parties) prioritized adaptation needs. The BCCSAP is expected to be country driven and owned across a large group of stakeholders, as this will be vital to implement the same on the ground.

As stated in the Summary, BCCSAP includes *"a ten year programme to build the capacity and resilience of the country to meet the challenge of climate change over the next 20-25 years"*. The Strategy is built on following six pillars: (see **Annexure 4** for anticipated programmes)

1. **Food security, social protection and health** to ensure that the poorest and most vulnerable in society, including women and children, are protected from climate change and that all programmes focus on the needs of this group, for food security, safe housing, employment and access to basic services, including health.
2. **Comprehensive disaster management** to further strengthen the country's already proven disaster management systems to deal with increasingly frequent and severe natural calamities.
3. **Infrastructure** to ensure that existing assets (e.g. coastal and river embankments) are well maintained and fit-for-purpose and that urgently needed infrastructure (e.g. cyclone shelter and urban drainage) is put in place to deal with the likely impacts of climate change.
4. **Research and knowledge management** to predict the likely scale and timing of climate change impacts on different sectors of the economy and socio-economic groups; to underpin future investment strategies; and to ensure that Bangladesh is networked into the latest global thinking on climate change.
5. **Mitigation and low carbon development** to evolve low carbon development options and implement these as the country's economy grows over the coming decades.
6. **Capacity building and institutional strengthening** to enhance the capacity of government ministries and agencies, civil society and the private sector to meet the challenge of climate change.

The Action Plan states the needs of the poor and vulnerable, including women and children, will be prioritized in all activities implemented under it. Programmes under it comprised of short-, medium- and long-term visions. The Action Plan is *"subject to review and revision as experience and knowledge are gained in implementing adaptation and related research programmes"*. The anticipated programmes planned to be implemented under the BCCSAP 2008 reflecting its 'six pillars' is attached at **Annexure 4**.

It is understood from the document that BCCSAP will be financed through Government's own resources and external support that may be available from the development partners (DPs) as well as specific/special national and/or international funds created for this purpose (e.g. proposed MDTF, CCF, Adaptation Fund, etc.). On financing the BCCSAP, the document estimates that USD 500 million will be required over the first two years for

implementation of immediate actions. This includes strengthening disaster management, research and knowledge management, capacity building and public awareness programmes, and urgent investments such as cyclone shelters and selected drainage programmes. The Plan also claims that over the first five years, the cost of the programmes could be of the order of USD 5 billion.

A major focus of the Plan is on research to better estimate and to monitor the scale and timing of climate change impacts. The plan calls for more accurate modeling scenarios at regional and national levels, particularly for the predicted hydrological impact on the Ganges–Brahmaputra–Meghna delta system. It also targets research into the impacts of climate change on the macro-economy and linkages between climate change, poverty and health to identify suitable interventions.

The Plan also seeks to establish a Centre for Research and Knowledge Management on Climate Change to ensure Bangladesh has access to the latest ideas and technologies from around the world. Other measures outlined include agricultural research to develop crop varieties resistant to flooding, drought and salinity, better surveillance systems for new and existing disease risks, and improving early warning systems for cyclone, storm surges and floods.

Although the document has given much emphasize on the urgent need for addressing upcoming climate change issues and tackling possible impacts while stating its objectives, the BCCSAP as such does not provide clear strategies for implementing the required actions under '*six thematic pillars*', only except providing the list of 37 projects/programmes covering those areas. Also it has not detailed out a '*broad-based institutional framework*' that should be needed to facilitate the implementation process of addressing such a multi-sectoral issue seeking better coordination and management within and outside the government.

The present government has decided that the BCCSAP will be implemented under the overall guidance of newly formed Committee chaired by the Planning Minister after having necessary revision. Projects/programmes funded under the Action Plan will be implemented by respective line Ministries and/or their technical Agencies, with the involvement, as appropriate, of civil society and the private sector. The whole process will be coordinated by the Ministry of Environment and Forests.

In April 2009, the Committee responsible for the planning and implementation of BCCSAP decided, following review, to revise the Strategy and Action Plan and accordingly engaged an Expert Committee to complete the task by June 2009 (ref. **Section IV, Figure 2**). In response to a notification from the MoEF through MoFDM, CDMP has, in the meantime, provided its recommendations for consideration in the revised Strategy and Action Plan, which included the DRR and CCA integration elements.

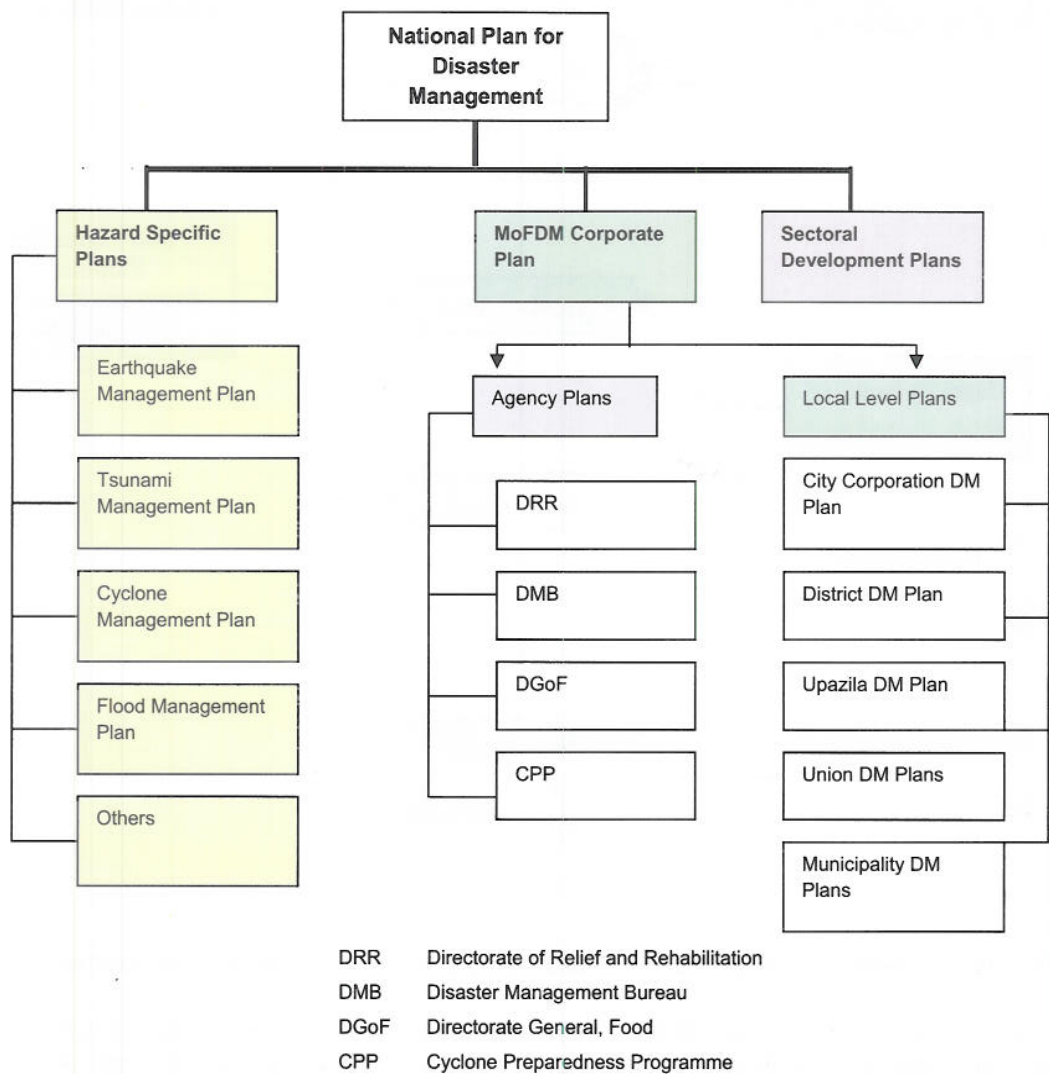
VI. Conceptual Framework for the Integration

Managing Climate Risks within a holistic Risk Reduction Framework

A holistic framework is needed to be developed to support the government in its efforts to mainstream DRR and CRM. It should incorporate all relevant government agencies and planning processes, and within established frameworks for overall disaster management. In this respect, **four frameworks** have been provided in **Section VI (Figures 5 to 8)** which are being practiced in the context of Bangladesh and suggest how risk analysis can be integrated at different stages of planning and implementing development activities:

The **first framework** is the Disaster Management Planning Framework (Figure 5). It shows the integration process of micro-level plans into meso-, national and sectoral plans for various hazards involving relevant agencies at different levels.

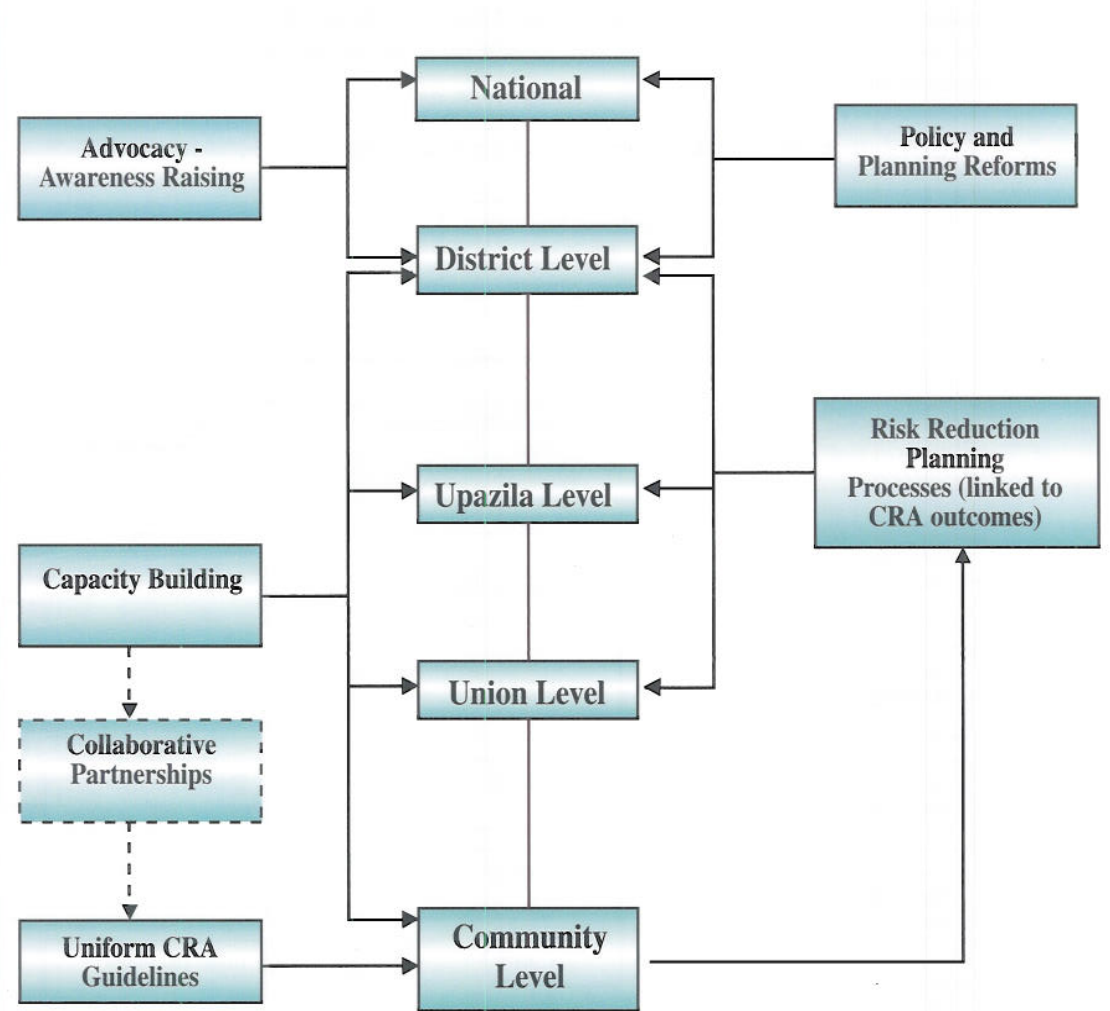
Figure 5: Bangladesh Disaster Management Planning Framework



The **second framework** is for mainstreaming DRR+CC in Bangladesh (Figure 6).

This Framework identifies the key top-down and bottom-up institutional, policy and capacity building elements for operationalizing the mainstreaming strategies/processes. It shows different decision-making levels in Bangladesh, from the national level down to the District, Upazila (bottom administrative structure) and Union level (bottom political representation with substantial responsibility for planning and implementation of all development activities in rural areas), and from the community level up to the Union and Upazila levels. It also indicates some entry points for Disaster Risk Reduction and Climate Risk Management.

Figure 6: Conceptual Framework for Mainstreaming DRR+CC in Bangladesh

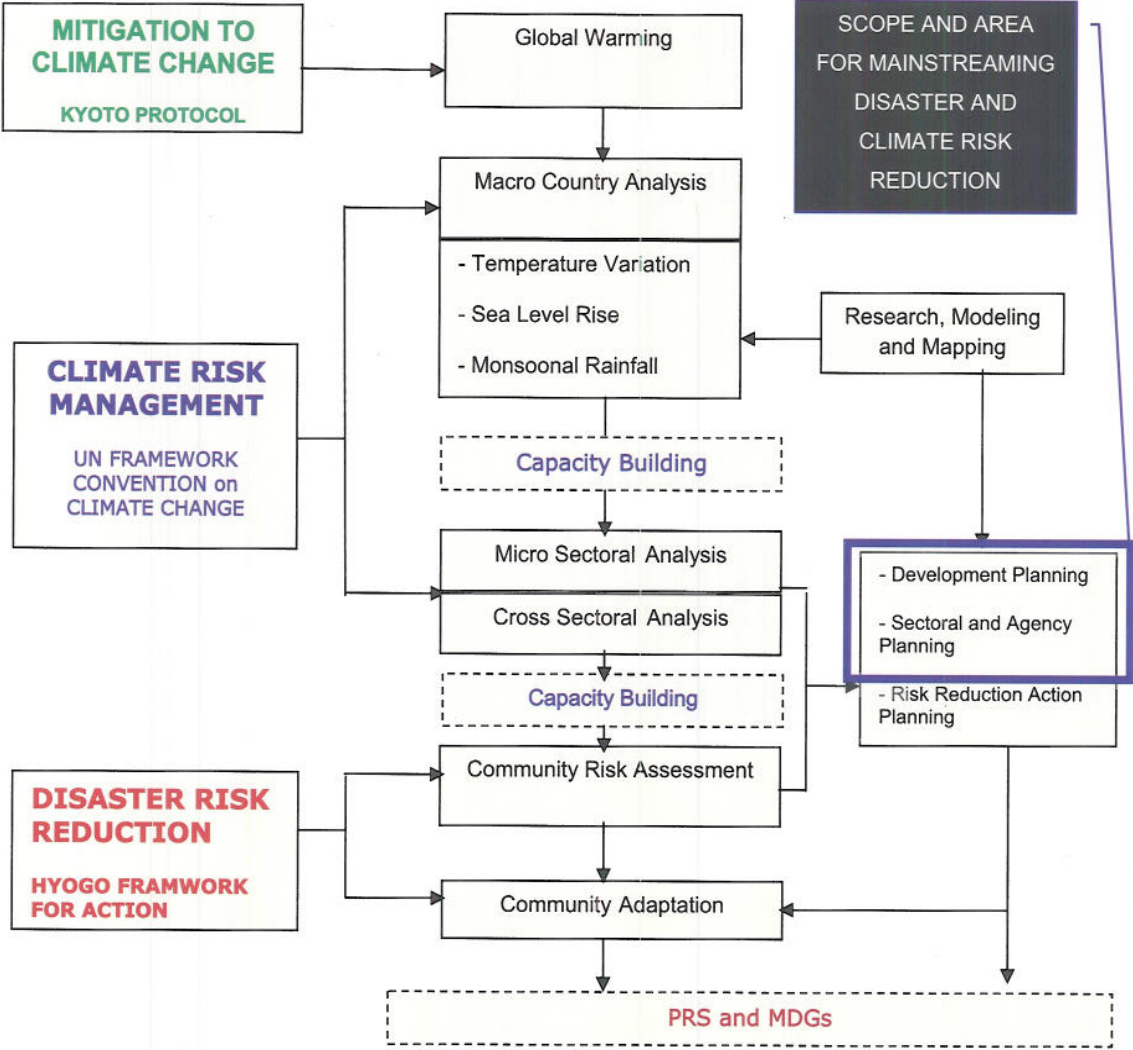


Source: GoB/MoFDM/CDMP

The **third framework** is to Integrate DRR and CRM - showing Mainstreaming Scope & Process (Figure 7).

Two schemes articulate the major elements of this FW: one provides the strategic links between CRM and DRR and their relationship with development planning, showing the mainstreaming scope and areas; and the other identifies the key top-down and bottom-up institutional, policy and capacity building elements to operationalize mainstreaming strategies

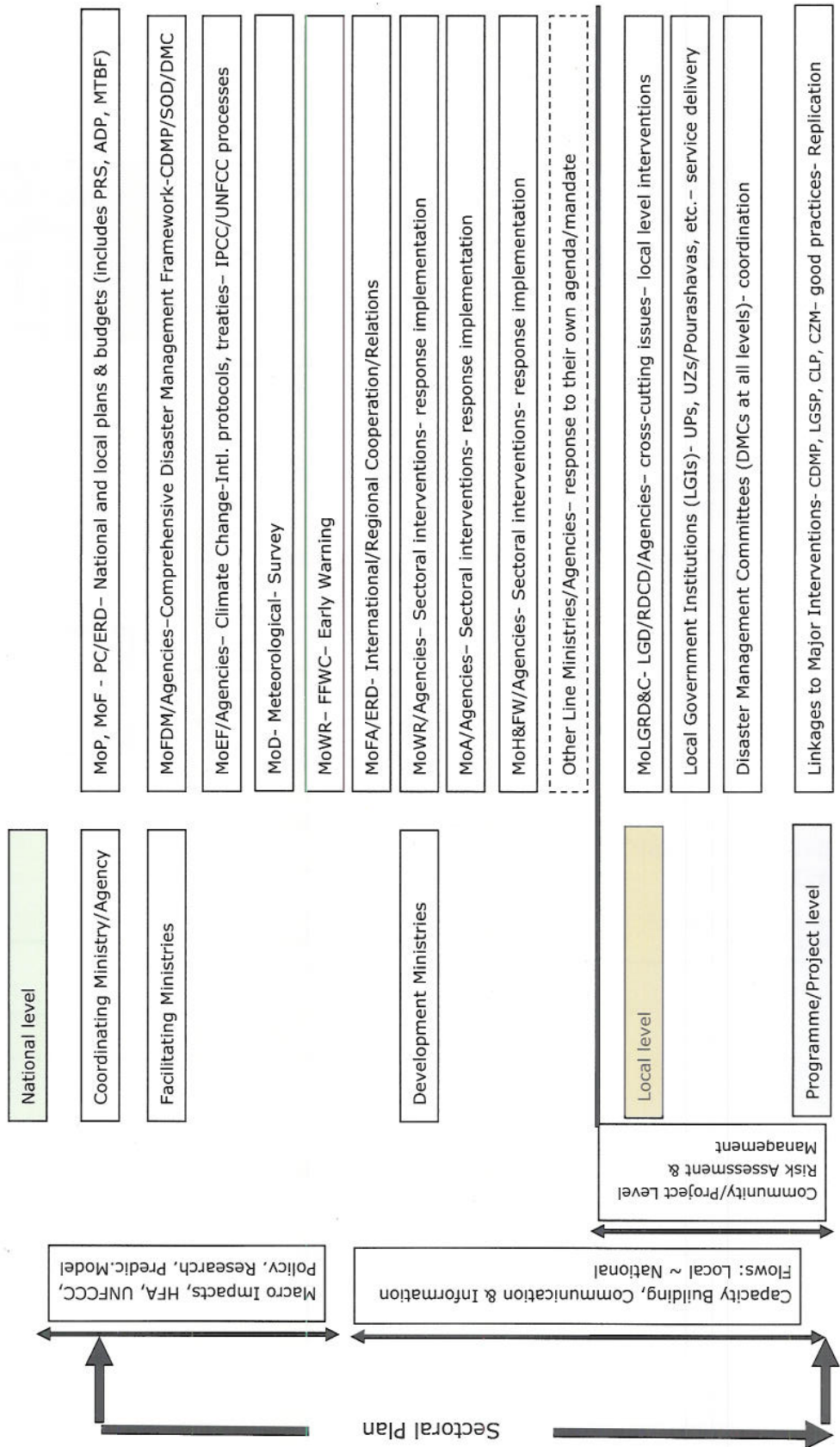
Figure 7: Framework to Integrate DRR+CRM - showing Mainstreaming Scope & Process



The *fourth framework* is to integrate risk reduction and adaptation measures through the Annual Development Programme (ADP) process (Figure 8).

The *Framework* describes in a simple linear way the integration of RR measures into the mainstream development initiatives from national to local and project/programme levels through the ADP processes, showing anticipated roles of key actors (global-national-global) at various levels.

Figure 8: Integrating Risk Reduction & Adaptation Measures into the Annual Development Planning Processes – Institutional Roles at Different Levels



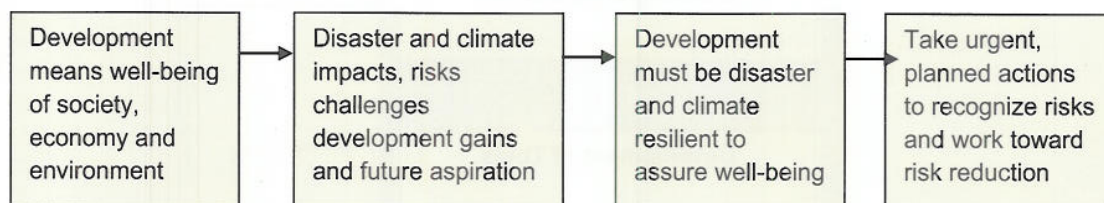
VII. Operationalizing the Integration Process

Integration is not a technical activity; it requires more than just developing appropriate approaches and tools. Integration of DRR and CRM is a long-term process of engaging with development actors at all levels and identifying suitable sustainable entry points for such engagements. A change in organizational culture may be needed to ensure integration of risk reduction concerns at all levels of development oriented activity. Political commitment and motivation, including financial support, can contribute to strengthening the required organizational culture.

Integration also requires effective partnerships among and within a wide range of actors and sectors. In addition to building internal organizational capacity, successful integration may require conducive relationships with groups and actors that influence the wider response. This includes local partner organizations, donors and other INGOs, and national and international constituencies supporting the organization. DRR and CRM integration is as much a question of inter-organizational capacity and coordination as it is one of internal organizational development.

An integration process must recognize that development (national, sectoral, local, organizational, or household) means well being of individuals and the society, the economy and the environment.

Figure 9: Development – Risk Reduction Planning Links



The '7-Strategies' for operationalizing integration

For Bangladesh, following seven strategies are recommended as relevant to integrate and mainstream DRR and CRM in the development processes:

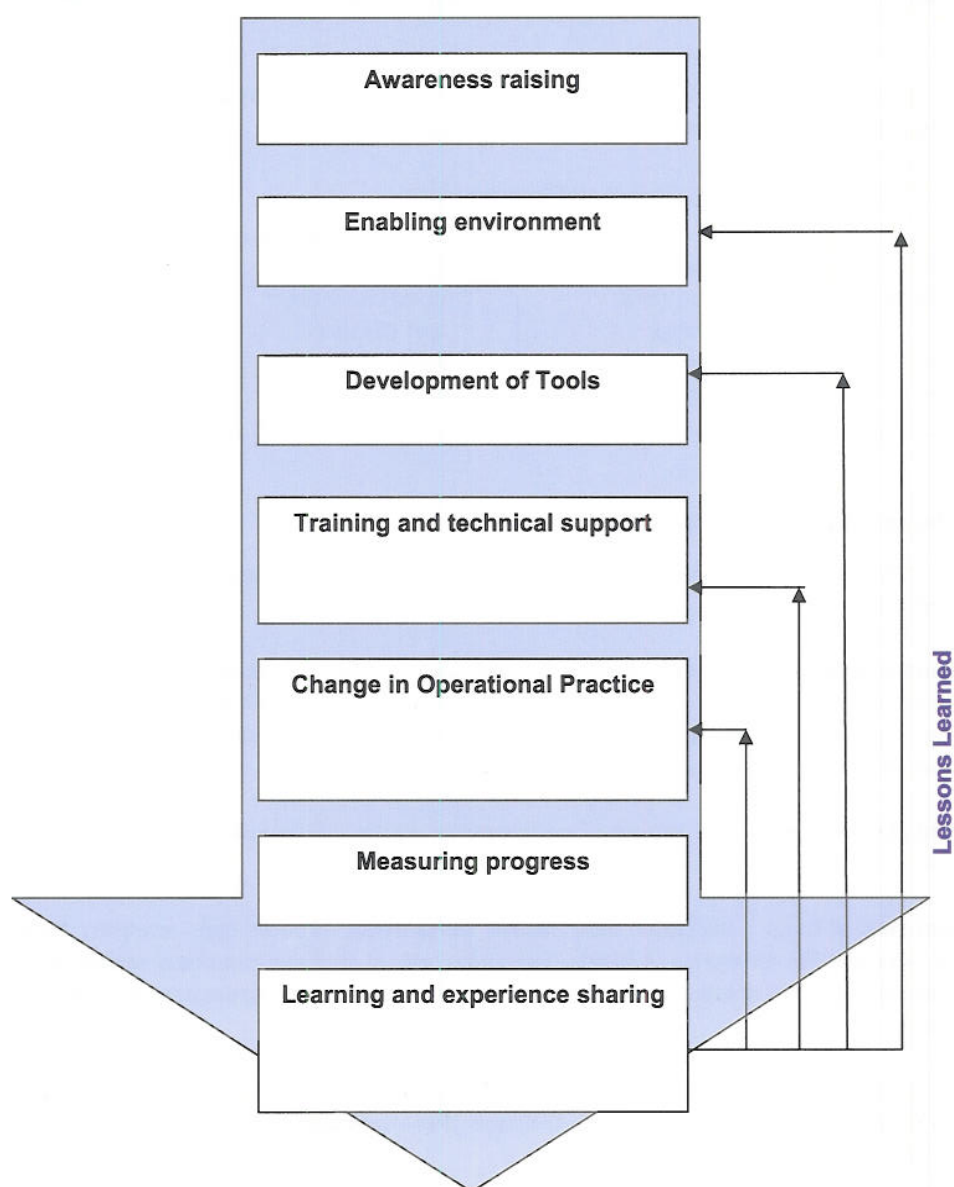
- 1. Awareness Raising** for example, Incorporates two concepts, both of which are relevant to this process: the need for an appreciation and understanding of the relevance of DRR and CRM for sustainable development; and, greater accountability (government need to *"assume greater responsibility for the country's and people's vulnerability and actively seek to reduce risk"*).
- 2. Enabling Environment** The success of any Integration process will depend to a large extent on the proactive organizational environment as well as policy and institutional set-up.
- 3. Development of Tools** Integration may require development of tools (e.g. screening tools for identification of risks and RR measures), methods, techniques, etc. to facilitate awareness raising, enabling environment, training and technical support, change in operational practice, measuring progress and learning and experience sharing.
- 4. Training and Technical Support** Organizations may require technical support and professionals may need training to address needs and gaps to integrate DRR and CRM in mainstream activities.

5. **Change in Operational Practice** Often, integration of DRR and CRM into mainstream activities will require changes in the way some activities and practices take place. This will require specific guidance on how to make the necessary changes in operational practice.

6. **Measuring Progress** To measure the progress that takes place following efforts to integrate DRR and CRM, there needs to be a systematic monitoring process/approach in place within the organization as well as outside. This will help identify areas where more effort is required.

7. **Learning and Experience Sharing** The effort, experience and lessons in implementing and operationalizing the integration process need to be shared within organizations as well as between different organizations and agencies participating in the integration process.

Figure 10: Strategies for DRR and CCA Integration into Development Planning and Processes



a. Implementation of the Integration Process: The ‘8-Steps’

How will the integration take place? Targeted Ministries and their Agencies/Departments will need to work within their respective scope of works as well as between their different counterpart and cooperating Ministries and their Agencies/Departments. The strategies described above can be used to evolve and establish the integration process. This can be done in **8-Steps**. It should be noted that the steps offer a simple iterative approach which is flexible in its design and use. Also, the duration of each of the steps may vary from Ministry to Ministry, and Agencies and Departments owing to different levels of organizational dynamics, culture and mandate.

The 8-Steps are briefly described below, with practical examples and activity:

1 Understanding disaster and climate risks

Through their DRR and Climate Change Focal Points (FPs), all staff and functionaries in each Ministry, their Department and Agencies, and particularly the staff in planning and project development, need to understand how natural and man made hazards impact on Bangladesh, what are the risks on different sectors, and aspects of well being and development, both in the near as well as long term, etc. Organizing awareness campaigns, events, orientation and learning sessions inside the Ministries as well as participating in those outside can be of immense help, if continued and updated periodically and systematically. Also, introducing sessions and modules in training and workshops addressing climate and disaster risks to development, environment and our future can be useful if well planned and if the experience and learning feedback into the performance of roles in DRR and CCA. Knowledge management and sharing from the start can facilitate better coordination required to understand climate and disaster risks.

2 Contextualizing risks in relation to sectors and concerned agencies/departments

Each concerned Ministry, Agency and Department, first need to be on-board, in rationale, spirit and commitment to understand how, and to what extent, disaster risks and climate change adverse impacts affect their respective sectoral mandates and responsibility, what are the key concerns, and what are their current roles in DRR (as described in the SODs to begin with) and adaptation to CC (as described in the BCCSAP) and in overall sectoral development planning (through PRSP, FYP, ADP, etc). Sectors and concerned Ministry and affiliates may also require screening tools for identification of problems and setting targets/objectives as well as specific techniques, trainings and other capacity enhancement support services to contextualize risks to their respective work areas.

3 Exploring range of risk reduction options in relation to mandated goals, targets

Once respective Ministries, their Department and affiliates have understood the impacts of disasters and climate change in general, and have contextualized the risks in relation to their sectors and concerned affiliates, the next step is to review and assess the range of disaster and climate risk reduction options in relation to the sectoral goals, targets, as well as to respective agency/department mandate. This could include a range of options which are locally proven, or applied/learnt from practices and technologies proven elsewhere.

A large number of these options may well require the cooperation, involvement or engagement of other Ministries, Affiliates, non-government actors and institutions. The range of options should also be sufficiently broad, covering the risk management and reduction needs of every section of society, and more particularly those who are poor and already vulnerable. The Options should be shared widely within the sector as well across to those who may be direct or indirect stakeholders in planning and implementing the DRR and CCA options. Sectors and concerned Ministry and affiliates may also require tools and techniques, training and other capacity enhancement support to explore risk reduction options in relation to mandated goals and targets.

4 Identify priorities, needs, gaps, cross- and inter-sectoral linkages

Each Ministry/Sector must then identify its priorities, needs and gaps in reducing climate and disaster risks, taking both cross- and inter-sectoral concerns. This may be guided by the macro policy and planning guidelines such as SODs, BCCSAP, PRSP, FYP, Annual and Sector Development Plans, etc. or any other

acts, policies or directives. The priorities, needs and gaps identified should be disseminated widely within respective sector stakeholders as well across to other relevant Ministries and organizations. Concerned authority can then undertake to address these gaps, needs and priorities systematically over time in the development planning, implementation and review processes.

5 Planning to address priorities, needs, gaps, cross- and inter-sectoral concerns

Planning requires sufficient understanding of development risks, which includes risks from climate change and disasters, contextualized to respective sectors as well across different sectors, identified range of risk reduction options, needs and gaps, the goals, targets, mandate of the concerned Ministry, and timescale considered. DRR and CCA planning to address priorities, needs and gaps can be inter-dependent and inter-linked on many occasions. For example, planning DRR in rural homes and settlement may consider reducing risks from flooding based on the likelihood of a 1998 level flood happening again, which would provide one option of raising the plinth level or elevating the homes and settlement above the 1998 flood level. However, climate impact predictions may forecast floods of higher intensities, duration and extent of coverage, which may result in inundation levels higher than the previous highest flood (1998). Adapting to CC may therefore inform the planning authorities to encourage and ensure raising of plinths of homes and settlement or elevating other infrastructures like markets, schools, clinics, etc. well above 1998 flood level and above the prediction levels for say, the years 2020 or 2030 or 2050. Also, integration in sectoral planning may require the coordination with other concerned Ministries, like LGRD&C, Land, Water, and Agencies like DPHE, LGED and BWDB may be relevant functionaries in elevating homesteads and infrastructure to reduce flood risks.

6 Mobilizing Resource: internal and external

Integrating disaster risk reduction and adaptation to climate change into development as well as sectoral plans will require budgeting and allocation of resources (both domestic and foreign) which consider the additional requirement to what would be required in a 'no risk' development scenario. For example, the MoWR may need to consider additional resources in embankment development and maintenance following prioritizing DRR and CCA for flood protection. The concerned authority should note how much losses and damages are reduced by investing in DRR and CCA and integrating them into development plans and implementation.

7 Implementing priority Risk Reduction activities as anticipatory interventions, address needs, filling gaps

Once the sector or development plan which has incorporated DRR and CCA considerations is implemented following resource mobilization, priority risk reduction activities will be implemented. These will address needs and fill gaps as earlier identified. The agencies, professionals and staff who will be responsible for implementation of sector plans, programmes and projects should understand the rationale for the additional investment and resources required for DRR and CCA integration. Additional capacity enhancement, including training and technical support, and changes in operational practice may be required in this respect.

8 Review & monitor disaster and climate proofing of activities and feedback

Respective Ministries, their affiliates and stakeholders should review and monitor progress made in DRR and CCA integration into their respective activities, programmes and projects, with a view to identify lessons learned and to share the experience with others. The feedback could facilitate enabling environment, or bring about necessary changes in operational practices.

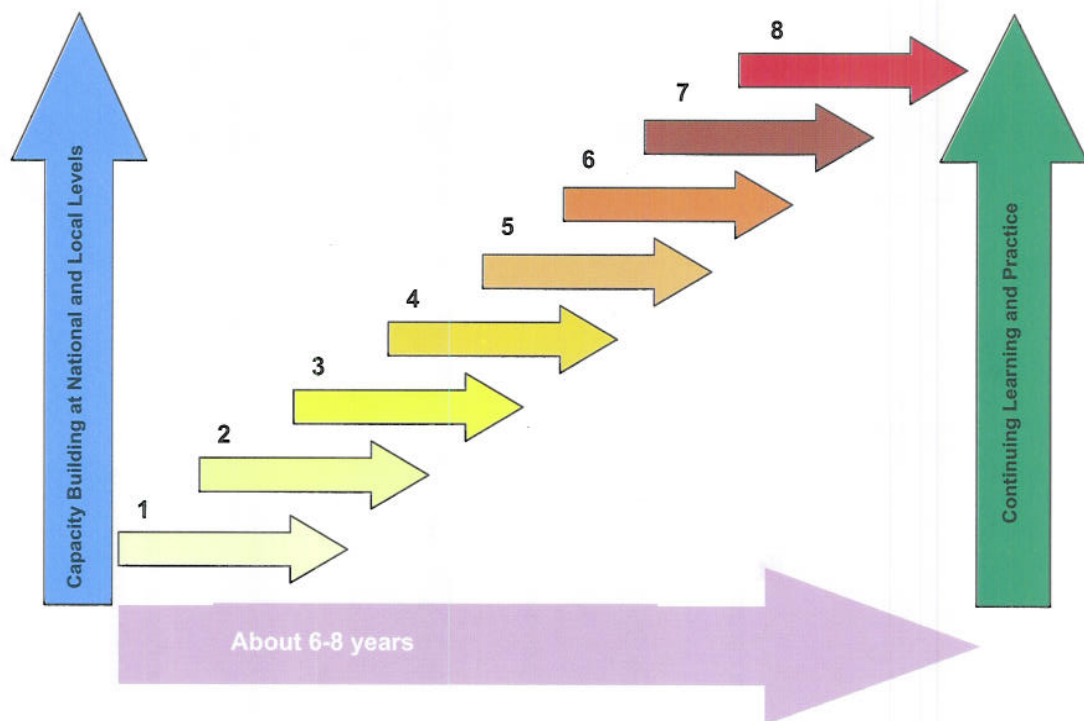
As an example, at the national level, review and measuring progress with regard to integration of DRR and CCA into sectoral plans and processes may be guided by a simple checklist, as a starting point, as presented in the following **Table 4:**

Table 4: Operationalizing Integration Process - A Checklist for Implementing the 'Integration in 8-Steps'

Steps		Sector/Ministry			
		Agriculture	Water	Health	Cross-cutting
1	Understanding disaster and climate risks				
2	Contextualizing risks in relation to sectors and concerned agencies/departments				
3	Exploring range of disaster and risk reduction options in relation to mandated goals, targets				
4	Identifying priorities, needs, gaps, cross- and inter-sectoral linkages				
5	Planning to address, priorities, needs, gaps, cross- and inter-sectoral concerns				
6	Mobilizing Resource- both internal and external				
7	Implementing priority risk reduction activities as anticipatory interventions, address needs, filling gaps				
8	Reviewing/monitoring disaster and climate proofing of activities, programmes and projects, and feedback to mainstream process				

Adaptation to climate impacts and disaster risk reduction must be seamlessly integrated into any development planning and policy. This step wise plan for integration of DRR and CCA aims to achieve the desired goal. A 'continuing learning by doing and practice' approach is required, focusing on national capacity as well as at different levels and across sectors, to ensure that development planning and implementation across sectors and all levels integrate disaster and climate change risks.

Figure 11: Steps toward Integration of Disaster and Climate Risk Reduction into Development Planning and Processes



Box 1:

8-STEPS for Integration

1. Understanding disaster and climate risks
2. Contextualizing risks in relation to sectors and concerned agencies/departments
3. Exploring range of disaster and climate risk reduction options in relation to mandated goals, targets
4. Identifying priorities, needs, gaps, cross- and inter-sectoral linkages
5. Planning to address, priorities, needs, gaps, cross- and inter-sectoral concerns
6. Mobilizing Resource: internal and external
7. Implementing priority risk reduction activities as anticipatory interventions, address needs, filling gaps
8. Reviewing/monitoring disaster and climate proofing of activities, programmes and projects and feedback to mainstream processes

b. Local Level Integration: CDMP Learning

In Bangladesh, CDMP provides the unique experience and opportunity for learning to guide local level integration of DRR and CCA activities.

Understanding DRR and CC risks to well-being and development

CDMP empowers communities to identify and analyze the hazards and risks they face through a Community Risk Assessment (CRA). This is a participatory and inclusive tool for risk reduction, poverty alleviation and sustainable development. To support the action plans developed from the CRA, the Local Disaster Risk Reduction Fund (LDRRF) provides financial and technical assistance to the most vulnerable groups in disaster prone communities to enable them to strengthen their capacity to address disasters locally, including using indigenous knowledge. LDRRF funded activities also contribute towards strengthening the institutional capacity of Disaster Management Committees (DMCs) at Union, Upazila and District levels. In addition, NGOs/CBOs are also supported in implementing risk reduction and capacity building initiatives.

Local Level Disaster and Climate Risk Reduction following Community Risk Assessment and Risk Reduction Action Planning

One of the main successes of CDMP has been to identify, design and implement community-level DRR interventions based on highly participatory approaches; these are based on '*community-level risk assessment*' (CRA) and '*risk reduction action plans*' (RRAP).

By the end of April 2009 CDMP had carried out 562 small-scale structural and non-structural risk reduction interventions based on individual CRA, benefiting over 500,000 people.

CRAs and RRAP have been the bedrock of CDMP and achievements represent a remarkable proof of concept at pilot scale. CRA guidelines were developed and pre-tested before disaster management committees were trained to carry out the CRAs. The processes through which CRAs were conducted and RRAPs developed "*significantly increased community-level awareness on disaster preparedness and risk reduction*"². Ample evidence exists from reviews that "*one of the most significant contributions of CDMP has been its involvement of the whole community in the CRA and RRAP through participatory processes*"³.

One key lesson identified in a review of CDMP activities is that in developing detailed RRAPs – many of which highlight the need for expensive infrastructure interventions – expectations have been raised amongst the community members and the local government. Such expectations are rarely met outside of the CDMP project unless they can be included in the annual development fund (*Block Grant*) at the local government level. Lessons from the World Bank-funded Local Government Support Programme (LGSP) indicate that the **Union Parishads** (UPs) represent the key building blocks for local level investment planning and prioritization under the current system of decentralization in Bangladesh⁴. Mainstreaming DRR into this mechanism would be an ideal way of influencing spending decisions at scale through the *BG Programme* of the GoB.

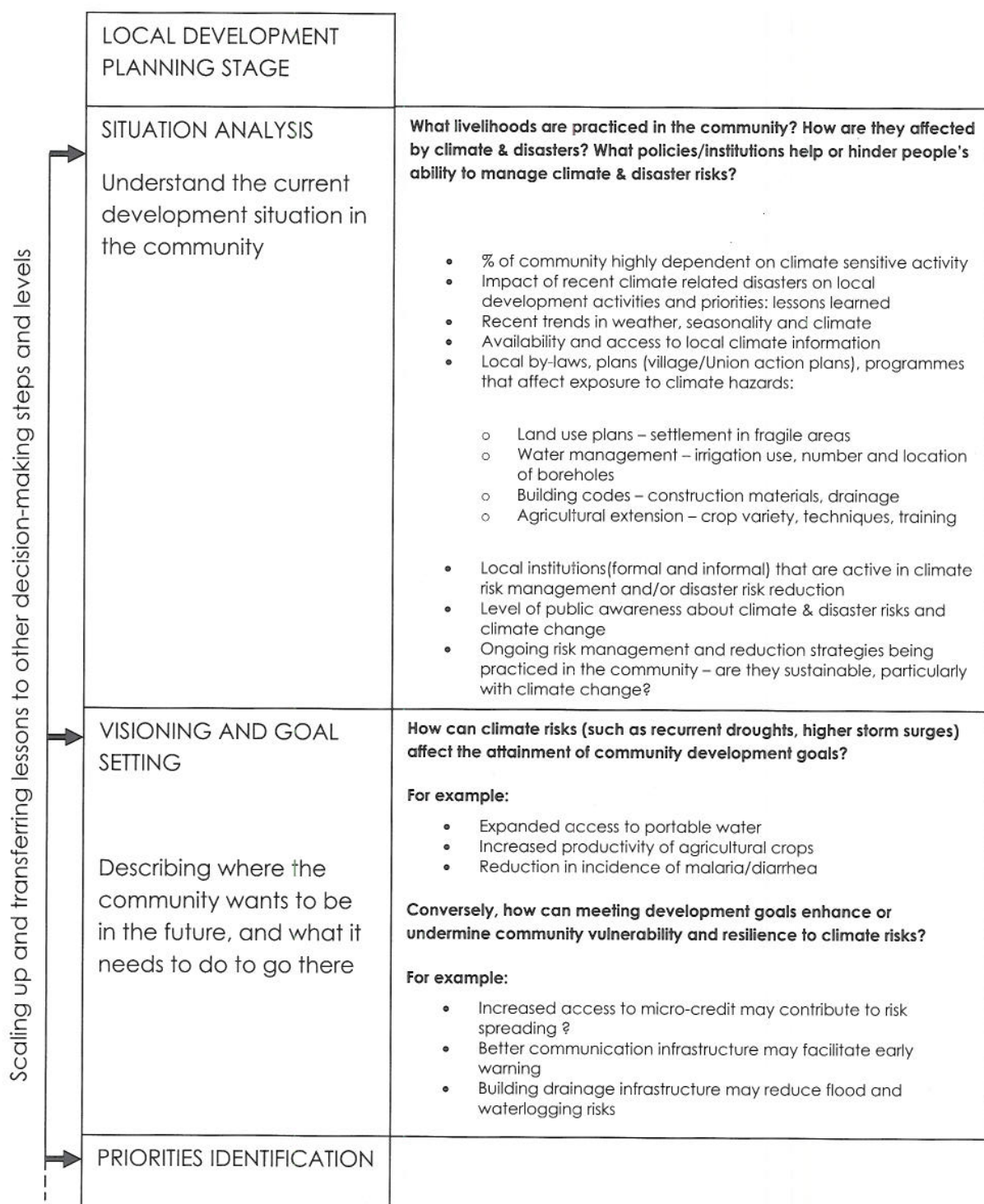
Box-2 presents a tool for planners and professionals to facilitate integration of DRR and CCA into local level development planning process, identifying key considerations and priorities at each stage of the cycle. This tool may be used to generate a better understanding through its application in practical situations, e.g. Upazila, Union, Pouroshava level development planning and implementation.

² *Comprehensive Disaster Management Programme (Draft), Annual Review 2008, Islam Faisal, Environment and Livelihood Adviser, DFID Bangladesh, April 2008, p: 6.*

³ *Bangladesh Comprehensive Disaster Management Programme: Mid-Term Review, July 2007, p: 22.*

⁴ *'Decentralised Disaster Management and Local Governance in Bangladesh, Linking Disaster Risk Reduction and the LGSP', September 2007 (draft).*

Box 2: A Tool for the Local Level Planning Process- Key Considerations and Priorities for Integrating Climate Change Adaptation and Disaster Risk Reduction



LOCAL DEVELOPMENT PLANNING STAGE (continued)	
PRIORITIES IDENTIFICATION Identifying what should be done in the short-, medium and longer term	Climate and disaster risk information can be used to prioritize and fine-tune development goals: <ul style="list-style-type: none"> • Hazard maps, vulnerability and capacity assessments may be used to identify vulnerable areas and people, and thus priority targets for intervention • Climate projections may alter (add urgency to) priority concerns, prompting medium term activities to be implemented in the short term • Climate forecasts and projections may reveal new or changing risks to community development priorities (such as infrastructure development, energy access, health care provision) • Local coping strategies proven to be effective and sustainable in managing climate & disaster risks may be allocated additional resources prompting adjustments in investments
POLICY/PROGRAMME/PROJECT FORMULATION Developing targeted actions to address priorities	Make sure climate and disaster risks are taken into account in the design of projects Identify interventions that build the capacities needed to implement priority development activities that reduce climate and disaster related vulnerabilities: <ul style="list-style-type: none"> • Public awareness-raising campaign • Improved collection and communication of climate/disaster risk information • Development and testing of new technologies for livelihoods • Promoting risk spreading mechanisms (e.g. micro-finance)? • Establishing or strengthening institutions for climate/disaster risk reduction
MONITORING AND EVALUATION Tracking progress and measuring development achievements	Establish indicators that help assess local vulnerability to climate change & disasters and capacities of communities to reduce them. For example: <ul style="list-style-type: none"> • Establishment of local meteorological stations and communication network • Changes in household food security • Access to risk spreading financial services?

c. Integration at the National, Sectoral and Project/Programme Levels

Integration of disaster and climate risks and responses into national, sectoral and project/programme levels can take place within mainstream flow of activities. **Figures 12-14** shows how these activities would be integrated in the prevailing systems and institutional arrangements in a simple diagrammatic way.

At the national level, consider various stages of the policy cycle while formulating policies, national long term visions and short to medium term policies and plans. In doing so, we must recognize climate and disaster risks. At the planning stage, while considering multi-year or annual development plans, consider the climate and disaster risks and include risk reduction and adaptation specific programmes and projects. In the resource allocation stage, while considering the national budget, reallocate funds to more vulnerable sectors and/or regions. Using the horizontal fund for DRR and CCA already in place (e.g. Bangladesh Climate Change Fund of Tk 700 crores in FY 2009-10), the decision makers can allocate funding for DRR/CCA specific activities. Finally, in the programming and implementation stage, while considering the development plans and budget allocations for each sector for a specific time period, funds will need to be allocated for specific DRR and CCA activities for the respective sectors. (see **Figure 12**)

The sector-level planning and implementation processes already in place can integrate DRR and CCA at each stage of its cycle. For example, at the policy formulation stage, sectoral strategies and policies require considering action on risk priorities established at the national level, include recognition of disaster and climate risks, and application of a climate screen/lens (**Figure 13**). At the planning stage, the sector plan should incorporate sector level (including cross-sectoral) adaptation activities identified at national level through the application of a climate screen/lens. In the resource allocation stage, make room in the budget for cross-sectoral adaptation activities, and claim resources from a horizontal fund for adaptation (such as the Bangladesh Climate Change Fund) as well. In sectoral programming, add climate considerations to criteria used for assessing project proposals, incorporate adaptation activities identified during sectoral planning stage.

The project cycle also offers the scope for integrating disaster risk reduction and climate change adaptation. At the project identification stage, potential climate and disaster risks, effects on vulnerability need to be identified. At the project appraisal stage, in-depth climate and disaster risk assessment need to be undertaken. In the project design stage, identify risk reduction and adaptation options, and also prioritize and select option(s). In the implementation stage, for new projects selected adaptation options will be implemented, while for ongoing projects left-out interventions of previous stages also need to be carried out. (see **Figure 14**)

In the final stage, implementation of adaptation measures and projects need to be monitored and evaluated, so that lessons learned from ongoing interventions could be utilized in future course of actions, as well as, good practices can be replicated and scaled-up.

Figure 12: National Level Planning and Implementation Processes with Key DRR and CCA Interventions

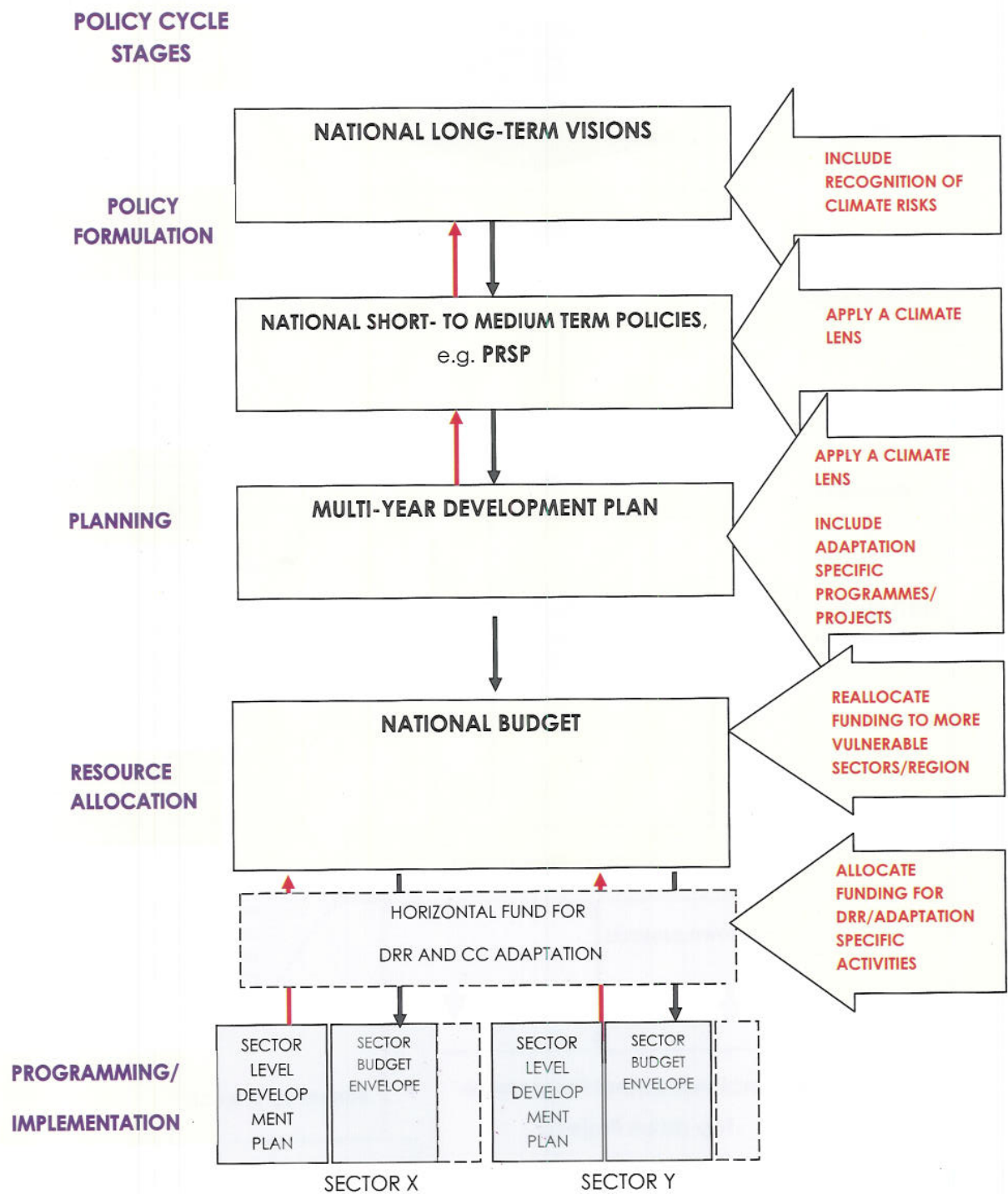


Figure 13: Sectoral Level Planning and Implementation Processes with Key DRR and CCA Interventions

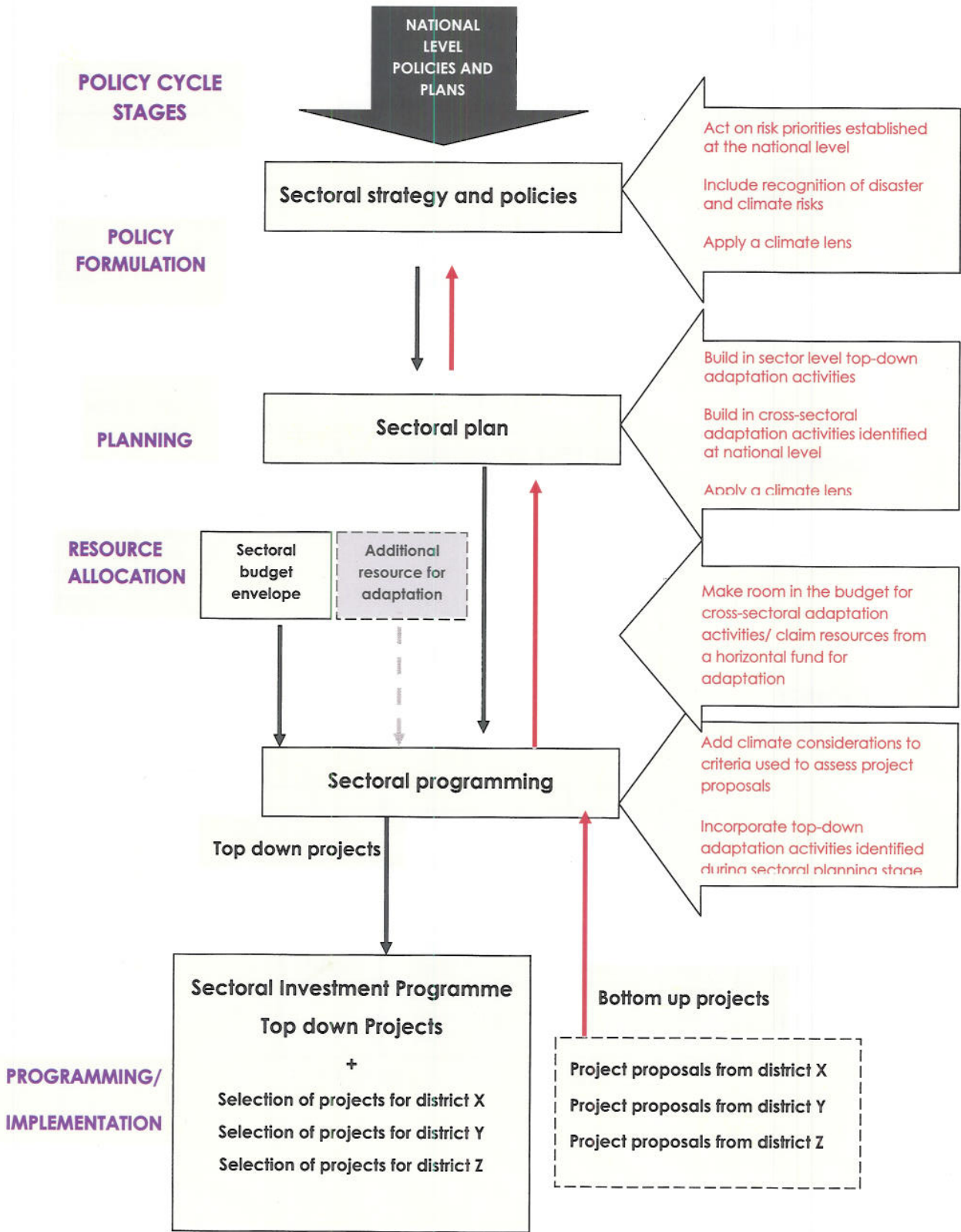
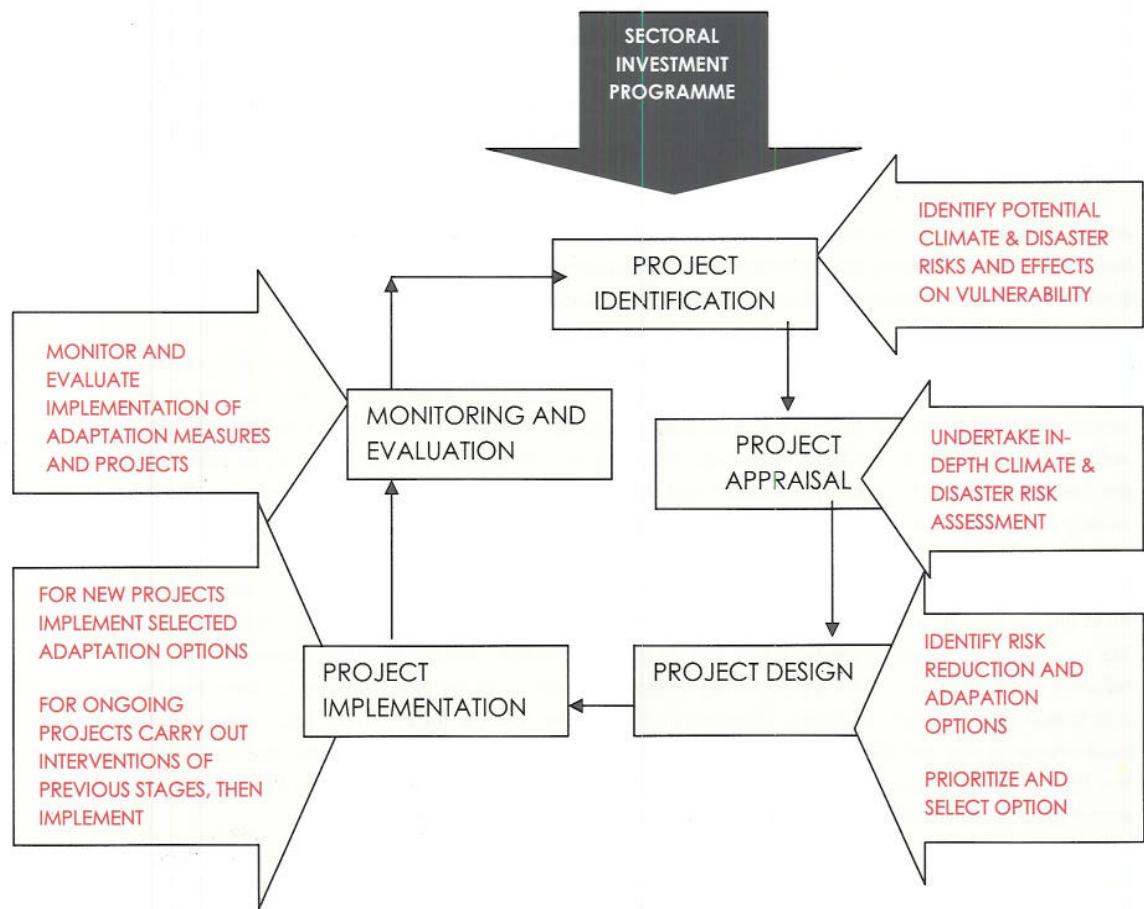


Figure 14: The 'Project Cycle' with Key Adaptation and DRR Interventions



VIII. Way Forward

The proposed design of CDMP II, building on the strengths of CDMP I, recognizes that the seeds of an inclusive, participatory and rights-based approach (RBA) to social development has been sown in Phase I. CDMP II is about pruning and shaping the approach and implementation of CRAs and RRAPs towards a more collaborative and empowering end. It is recommended that CDMP II builds bridges within different groups in communities, between the communities and the local government, and within the various players in the local government in order to support the mainstreaming of risk reduction measures at the local level in development activities and investments.

As the community risk reduction concept is now to be expanded in phase II of the project, it is recommended to revisit the CRA processes and methodologies, to improve the inclusion of marginalized groups and to strengthen links with local government planning processes in particular.

Existing implementing partners under CDMP I have proven experience of working on rights based approaches and it is strongly recommended that CDMP II adopts RBA as an overarching strategy as part of all its work at community level, ensuring other vulnerable groups such as children, female-headed households, the elderly and *adivasis* are included in the CRA guidelines. It is also recommended that gender analysis frameworks such as the Harvard Gender Analysis Framework⁵ and the Gender Analysis for Sustainable Livelihoods Framework be closely consulted for inclusion in the CRA guidelines in CDMP II.

In CDMP II it is proposed that different CRA groups choose their preferred risk reduction intervention, keeping in mind the community's inputs and contribution from the local government. This will necessitate the participation of the government Project Implementation Officer (PIO) in all the CRAs and where possible, the UP Chair and relevant ward member. CRAs would be an on-going process with periodic reviews to determine the validity of information and related activities. Information from CRAs will be incorporated into other activities, thereby mainstreaming risk reduction at the grass roots level. It is also strongly recommended that the CRA outcomes in the form of RRAPs are included in local level development planning at the Union and Upazila level, thereby ensuring its implementation and ownership by local government.

One of the drawbacks of CDMP I has been the limited analysis and interventions at the household level. It is therefore recommended that CDMP II consider existing frameworks such as IFAD's Household Food Security Framework and Household Vulnerability Assessment Framework⁶ as a starting point to think through how CRA and RRAP processes can bring benefit at the household level.

Experiences from NGOs in Bangladesh show that livelihood options lend sustainability to disaster preparedness and risk reduction initiatives. It is strongly recommended that the CRA and RRAP processes link in with the other existing programme component of CDMP, the Livelihood Adaptation to Climate Change (LACC), and consider options such as special credit facilities as in PRIME for '*monga*' affected areas, asset transfer under BRAC's Challenging the Frontiers of Poverty (CFPR) Programme and the Chars Livelihoods Programme (CLP).

It is also recommended that CDMP II should consider mainstreaming disaster management, risk reduction and adaptation to climate change at the macro level through on-going development programmes and projects under the ADP for both the rural and urban sectors. This would make it possible for CDMP II to scale-up and spread its concept of DRR nationwide in a cost effective manner.

⁵ <http://www.ilo.org/public/english/region/asro/mdtmanila/training/unit1/harvrdfw.htm>

⁶ Extensively used by Save the Children Fund-UK to analyse the impact of household vulnerability on children.

A ‘Road Map’ for achieving Integration Goals

The following “road map” is proposed (Table 5) for implementation in order to achieve DRR and CCA integration goals, as required and envisaged in this paper. The immediate activities are described, while the 6-8 year period is intuitively outlined, offering a direction for the GoB (including CDMP) to facilitate a wider, comprehensive, continuous process to integrate DRR and CCA into the national development planning processes.

Table 5: A ‘Road Map’ for Implementation and Integration of DRR and CCA into Development Plans and Processes

Steps	Activities	Timeline									
		2009								2010-2014	2015 +
		June	July	Aug	Sep	Oct	Nov	Dec			
1	Understanding disaster and climate risks	***	***	***	***	***	***	***	*****	*****	
2	Contextualizing risks in relation to sectors and concerned agencies/ departments			***	***	***	***	***	*****	*****	
3	Exploring range of disaster and climate risk reduction options in relation to mandated goals, targets					***	***	***	*****	*****	
4	Identifying priorities, needs, gaps, cross- and inter-sectoral linkages						***	***	*****	*****	
5	Planning to address, priorities, needs, gaps, cross- and inter-sectoral concerns							***	*****	*****	
6	Mobilizing Resource: internal and external								*****	*****	
7	Implementing priority risk reduction activities as anticipatory interventions, address needs, filling gaps								*****	*****	
8	Reviewing/monitoring disaster and climate proofing of activities, programmes and projects and feedback to mainstream processes								*****	*****	

IX. Conclusion

DRR is now lending its expertise and humanitarian experience to CCA programmes. For example, DRR's knowledge and expertise about building resilience to existing climate variability is a useful starting point for developing adaptation strategies/policies. In turn, the DRR community is paying more attention to longer term changes in the climate and the shifting hazard burden that the CC may cause.

Successful mainstreaming depends very much on addressing key aspects of organizational and institutional learning, as evidenced from practice. A common barrier cited is that housing climate change in environmental or meteorology departments of government lead to limited leverage on the issue/concern⁷. For Bangladesh, a systematic analysis is desirable to scope where housing climate risk and adaptation is appropriate, in line with the levels of urgency and priority towards managing disasters.

While Bangladesh can gradually become disaster and climate resilient, no adaptation measure can entirely eradicate the adverse impacts of climate change and climatic variability. A major challenge is to scale-up the country's investment capability to cope with the potential threat and prospective negative impacts on overall development due to natural extremes. It should be noted here that the adaptation cost is huge that can put enormous pressure on the public sector expenditure.

Hence, a well designed risk financing programme enables a disaster prone country, like Bangladesh, to avoid major economic disruptions following natural disasters by meeting its funding needs without resorting to large budget reallocations, additional taxation or external borrowing. In this respect, international awareness of climate change has led to increased interest in supporting Bangladesh, given its particularly vulnerable situation.

Already, there are good numbers of climate change and disaster management related activities under implementation by the donor community. This number is likely to rapidly increase over the next few years. Also, there is a golden opportunity today to create a multi-donor trust fund (MDTF), which can channel all the climate change and disaster related grants, loans (if any) and technical assistance to provide a more harmonized approach. This 'one stop shop' for DRR and CCA related donor funding in Bangladesh would significantly reduce transaction costs for global and bilateral funds. It will also pave the way for large fund flows in the future, while ensuring proper institutional structures, governance, and management targeting for a disaster resilient country.

⁷ Mainstreaming Climate Change Adaptation in Developing Countries, IDS In Focus, Issue 2, November 2007. www.ids.ac.uk

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Institutional Mechanism for Disaster Risk Reduction

Under the Standing Orders on Disasters (SOD) a series of inter-related committees, at both national and sub-national levels, have been created to ensure effective planning and coordination of disaster risk reduction and emergency response management at all levels; these are summarized below.

	Summary of Institutional Mechanisms and Committees for Disaster Risk Reduction
National level bodies	<ul style="list-style-type: none"> ▪ National Disaster Management Council (NDMC) headed by the Hon'ble Prime Minister to formulate and review the disaster management policies and issue directives to all concerns. ▪ Inter-Ministerial Disaster Management Co-ordination Committee (IMDMCC) headed by the Hon'ble Minister in charge of the Ministry of Food and Disaster Management (MoFDM) to implement disaster management policies and decisions of NDMC / Government. ▪ National Disaster Management Advisory Committee (NDMAC) headed by an experienced person nominated by the Hon'ble Prime Minister. ▪ Cyclone Preparedness Program Implementation Board (CPPIB) headed by the Secretary, Ministry of Food and Disaster Management to review the preparedness activities in the face of initial stage of an impending cyclone. ▪ Disaster Management Training and Public Awareness Building Task Force (DMTATF) headed by the Director General of Disaster Management Bureau (DMB) to co-ordinate the disaster related training and public awareness activities of the Government, NGOs and other organizations. ▪ Focal Point Operation Coordination Group of Disaster Management (FPOCG) headed by the Director General of DMB to review and co-ordinate the activities of various departments/ agencies related to disaster management and also to review the Contingency Plan prepared by concerned departments. ▪ NGO Coordination Committee on Disaster Management (NGOCC) headed by the Director General of DMB to review and co-ordinate the activities of concerned NGOs in the country. ▪ Committee for Speedy Dissemination of Disaster Related Warning/Signals (CSDDWS) headed by the Director General of DMB to examine, ensure and identify the ways and means for speedy dissemination of warnings/signals among the people.
Sub-national bodies	<ul style="list-style-type: none"> ▪ District Disaster Management Committee (DDMC) headed by the Deputy Commissioner (DC) to co-ordinate and review the disaster management activities at the district level. ▪ Upazilla Disaster Management Committee (UZDMC) headed by the Upazilla Nirbahi Officer (UNO) to co-ordinate and review the disaster management activities at the Upazilla level. ▪ Union Disaster Management Committee (UDMC) headed by the Chairman of the Union Parishad to co-ordinate, review and implement the disaster management activities of the concerned union. ▪ Pourashava Disaster Management Committee (PDMC) headed by the Chairman of Pourashava (municipality) to co-ordinate, review and implement the disaster management activities within its area of jurisdiction. ▪ City Corporation Disaster Management Committee (CCDMC) headed by the Mayor of City Corporations to co-ordinate, review and implement the disaster management activities within its area of jurisdiction.

Disaster Risk Reduction

General Roles and Responsibilities of All Ministries, Divisions, Departments and Autonomous Bodies

1. Ensure that disaster risk reduction approaches are well considered during planning and implementation of development programs
2. Mainstream disaster management principles and practices within national development planning process
3. Coordinate Ministry activities to consider DRR issues
4. Monitor Risk Reduction activities and programs and keep the National Disaster Management Council informed of their progress
5. Develop policy related to DRR within the Ministry
6. Develop Ministry programs for research and hazard analysis at national and sub-national levels
7. Nominate a person to act as liaison officer for all matters relating to disaster risk management
8. Undertake disaster risk analysis processes to identify and assess risks which may affect Ministry services
9. Prepare disaster risk management plans, to include business continuity and operational response relief and recovery
10. Undertake risk reduction activities, consistent with identified risks and treatment options developed from formal hazard and risk analysis processes
11. Develop and maintain an Emergency Operation Centre (EOC) suitable for managing the activities of the Ministry during activation, response, recovery and rehabilitation operations
12. Establish and maintain a system of liaison officers available for contact on a 24 hour/365 day basis
13. Ensure the Ministry is prepared and capable of activation for response, relief and recovery operations
14. Conduct training and awareness for staff on disaster management, and that staff have the appropriate skills and abilities to effectively participate in disaster risk management activities
15. Undertake preparation activities prior to flood/cyclone season to ensure Ministry preparedness systems and procedures are adequate and capable
16. Review Ministry contingency plans periodically but not less than once per year, to ensure adequacy and consistency with lessons learnt from previous response, relief and recovery operations
17. Establish and maintain inter-Ministry communications system for response, relief and recovery operations and to develop a system of information reporting and dissemination within the Ministry and to other key external stakeholders
18. Actively participate in committees at national and sub-national levels, including activities and programs related to DRR and Emergency Operations Planning (EOP)

Source: Standing Orders on Disasters, Revised 2008 edition.

Disaster Risk Reduction - Specific Roles and Responsibilities of Different Ministries, Departments, Agencies

In addition to the General roles and responsibilities of all Ministries, Divisions, Departments and Autonomous Bodies, there are specific roles and responsibilities listed separately for each Ministry. A summary of Risk Reduction roles and responsibilities specific to the Ministries are presented below:

<i>Ministry/Agency</i>	<i>Specific DRR roles and responsibilities</i>
Prime Minister's Office	
Armed Forces Division	<p>Develop a sectoral risk mitigation and preparedness strategy plan through conducting a detailed sectoral risk assessment of the Armed Forces Division.</p> <p>Ensure budgetary provision for the implementation of the plan</p> <p>Establish an effective monitoring and evaluation system to ensure effective utilization of resources</p> <p>Undertake staff education and awareness training.</p> <p>Establish a sectoral risk communication system for the Division.</p> <p>Develop a sectoral contingency plan of its risk reduction and management activities</p>
Bangladesh Army	<p>Develop a sectoral risk mitigation and preparedness plan through conducting a detailed sectoral risk assessment of Bangladesh Navy.</p> <p>Ensure budgetary provision for the implementation of the plan</p> <p>Establish an effective monitoring and evaluation system to ensure effective utilization of resources</p> <p>Undertake staff education and awareness training.</p> <p>Establish a sectoral risk communication system.</p> <p>Develop a sectoral contingency plan of its risk reduction and management activities.</p>
Bangladesh Navy	<p>Develop a sectoral risk mitigation and preparedness strategy plan through conducting a detailed sectoral risk assessment of Bangladesh Navy.</p> <p>Ensure budgetary provision for the implementation of the plan</p> <p>Establish an effective monitoring and evaluation system to ensure effective utilization of resources</p> <p>Undertake staff education and awareness training.</p> <p>Establish a sectoral risk communication system of the ministry.</p> <p>Develop a sectoral contingency plan of its risk reduction and management activities</p>
Bangladesh Air Force	<p>Develop a sectoral risk mitigation and preparedness strategy plan through conducting a detailed sectoral risk assessment of Bangladesh Air Force.</p> <p>Ensure budgetary provision for the implementation of the plan</p> <p>Establish an effective monitoring and evaluation system to ensure effective utilization of resources</p> <p>Undertake staff education and awareness training.</p> <p>Establish a sectoral risk communication system of the ministry.</p> <p>Develop a sectoral contingency plan of its risk reduction and management activities</p>
NGO Affairs Bureau	<p>Issue directives to include disaster risk reduction considerations in the FD-6 Format</p> <p>Instruct NGOs to include disaster management messages in different skill and awareness campaign of NGOs</p>

<i>Ministry/Agency</i>	<i>Specific DRR roles and responsibilities</i>
Ministry of Food and Disaster Management	<p>Designate a senior staff as the focal point of the Ministry.</p> <p>Create and establish national policy, planning and legislative frameworks for comprehensive disaster management in Bangladesh with the following strategic goals:</p> <ul style="list-style-type: none"> Professionalizing the disaster management system Mainstreaming risk reduction Strengthening institutional mechanisms Empowering at risk communities Expanding risk reduction programming across hazards, risks and sectors Strengthening emergency response systems Developing and strengthening networks <p>Prepare and periodically review and update the National Plan for Disaster Management</p> <p>Develop specific guidelines and templates facilitating mainstreaming disaster management principles and practices across hazards, sectors and within national development planning processes at all levels.</p> <p>Conduct national, district, upazila and union level hazard, risk and vulnerability assessments and mapping to identify the disaster prone Upazilas and special disaster prone areas under such Upazila and the population likely to be affected by the disaster.</p> <p>Coordinate inter-sectoral risk reduction efforts of the government</p>
Disaster Management Bureau	<p>Advise the government on all matters relating to disaster management.</p> <p>Maintain liaison with different government agencies, aid-giving agencies, NGOs and Voluntary Organizations and ensure their maximum cooperation and coordination in all matters of disaster management.</p> <p>Support the Ministry in the</p> <ul style="list-style-type: none"> Establishment of the national policy, planning and legislative frameworks for comprehensive disaster management in Bangladesh Preparation and implementation of framework for Action Plan on disaster management at District, Upazila and Union levels. Development of specific guidelines and templates facilitating mainstreaming disaster management principles and practices across hazards, sectors and within national development planning processes at all levels. coordinating the inter-sectoral risk reduction efforts of the government
Directorate of Relief and Rehabilitation	<p>Develop and establish guidelines and procedures to assess hazard risks and vulnerabilities at the community level</p> <p>Conduct national, district, upazila and union level hazard, risk and vulnerability assessments and mapping to identify the disaster prone Upazilas and special disaster prone areas under such Upazila and the population likely to be affected by the disaster.</p> <p>Design and implement the safety net programmes to contribute to the community level risk reduction efforts</p> <p>Duties of Relief and Rehabilitation Officers at District and Upazila Level</p> <p>Ensure formation of Upazila and Union Disaster Management Committees and arrange training.</p> <p>Establish a standard assessment procedure to identify community and household level risks and vulnerabilities</p>

*Cyclone
Preparedness
Programme*

Assist the preparation and implementation of the risk reduction action plans prepared by the union, Pourashava and Upazila and district disaster management committees with the coordination efforts of the government and non-government organizations.

Coordinate all risk reduction activities of the government and NGOs

Arrange training and workshops on disaster related issues regularly by keeping the Disaster Management Bureau informed

Ensure that the risk factors of disaster and the possibilities of reduction of risks have been fully considered while preparing and implementing the district and upazila development programmes.

Provide necessary support to district, upazila and union disaster management committees to create local level fund appropriate for the implementation of the risk reduction action plans.

Ensure speedy and effective publicity of forecasts and warnings relating to disasters (tornado, cyclone, tidal surge, earthquake, landslide, river erosion, tsunami, heavy rainfall, no rainfall, drought, flood, water logging, high tide, cold wave, etc.) among all officials of the district, relevant individuals/organizations and take measures to send the messages to the concerned individuals at the union, Pourashava and Upazila levels;

Establish a Focal Point to attend the meetings of the National Disaster Management Council and Inter-Ministerial Disaster Management Coordination Committee and other national level disaster management related committees

Incorporate disaster risk reduction considerations into the CPP policies, plans and programmes

Collaborate with national committees related to disaster risk reduction

Allocate resources and arrange training on risk reduction for its staff and the volunteers

Field Level

Establish a Focal Point to participate in all the disaster management committee meetings

Participate in the process of local level disaster risks and vulnerability mapping of the Directorate of relief and rehabilitation and preparation of the risk reduction action plans

Ministry of Food

Incorporate disaster risk reduction considerations into the national food security policy of the government

Consider current and future disaster risks in the estimation of food stock requirements

Consider current and future risks while designing new storage facilities

Ensure regular maintenance of the storage facilities to avoid damages

*DG, Directorate of
Food*

Issue necessary orders with the instruction to the relevant departments to ensure implementation of the risk reduction policies of the Directorate General of Food

Field Offices

Assess the food demand of the area considering the current and future disaster risks

Establish a network with food grain traders

Maintain the minimum food stocks through timely procurement of food grains from the local market

Ministry/Agency

Specific DRR roles and responsibilities

Ministry of Home Affairs

Develop a sectoral risk mitigation and preparedness strategy plan through conducting a detailed sectoral risk assessment of the ministry.

Ensure budgetary provision for the implementation of the plan of the Ministry

Establish an effective monitoring and evaluation system to ensure effective utilization of resources

Undertake staff education and awareness training.

Establish a sectoral risk communication system of the ministry.

Develop a sectoral contingency plan of its risk reduction and management activities

BDR

Develop the risk mitigation and preparedness strategy plan of the Bangladesh Rifles through the detailed sectoral risk assessment.

Develop and implement an action plan on the mitigation and preparedness strategy plan developed through a formal sectoral risk assessment

Design and implement a capacity building programme on risk reduction

Bangladesh Police

Conduct an inventory to identify vulnerable establishments

Strengthen the vulnerable buildings

Use the risk maps prepared through the formal risk assessments to establish new infrastructure

Strengthen the police radio network

Establish alternative communication channel to be used during emergencies

Keep the different government informed on the police radio networks

Assist the community in building community awareness on disaster risk reduction

Maintain the database on the equipments can be used in search, rescue and relief operations

Directorate of Ansar and Village Defense

Develop a sectoral risk mitigation and preparedness strategy plan through conducting a detailed sectoral risk assessment.

Ensure budgetary provision for the implementation of the plan

Establish an effective monitoring and evaluation system to ensure effective utilization of resources

Undertake staff education and awareness training.

Establish a sectoral risk communication system of the ministry.

Develop a sectoral contingency plan of its risk reduction and management activities

Bangladesh Fire Service and Civil Defense

Conduct a country assessment to identify the current and future needs of the services of Bangladesh Fire Service and Civil Defence

Identify the locations for the establishment of the unit offices

Prepare an action plan with indicative budget to establish adequate number of unit offices

Strengthen the unit offices manpower and equipment support

Design and implement an awareness programme to improve the understanding of mass people on fire safety

Ministry/Agency

Ministry of Defense

Specific DRR roles and responsibilities

Conduct a thorough risk assessment of defence issues associated with natural and man made hazards.

Develop a risk reduction / preparedness strategy of the ministry for risk reduction activities.

Undertake risk reduction activities to ensure the safety and security of personnel, infrastructure and resources in high risk areas.

Undertake planning in cooperation with the MoFDM for the use of the Armed Forces in aid to the civil authorities on the basis of requisition and requirement.

Ensure appropriate Planning for the security of the people, equipment, establishment infrastructure, transports etc. of the cyclone/flood prone areas before the start of the disaster seasons.

BMD

Develop sectoral risk mitigation and preparedness strategy of the department.

Ensure budgetary provision for risk reduction activities and programs.

Undertake continuous improvement of cyclone forecast and warning systems.

Ensure improvement of cyclone forecast processes / procedures/ methodologies, and continuous monitoring of the weather conditions, dissemination of all information in this regard on a regular basis.

Improve the equipment facilities for quickest dissemination of the information/warnings to all concerned, such as fax, E-mail arrangements must be established with all Print and electronic medias and Ministry of food and disaster management.

Ministry/Agency

Ministry of Water Resources

Specific DRR roles and responsibilities

Incorporate disaster risk reduction considerations into the water sector policies, plans and programmes

Develop sectoral risk mitigation and preparedness strategy of the Ministry of Water Resources.

Ensure budgetary provision for risk reduction activities and programs.

Ensure implementation of the risk reduction programmes and activities through establishing an effective monitoring and evaluation system

Establish a sectoral risk communication system.

BWDB

Support the ministry in incorporating disaster risk reduction considerations into the water sector policies, plans and programmes

Develop an action plan based on sectoral risk mitigation and preparedness strategy of the Ministry of Water Resources.

Implement the risk reduction programmes and activities

Improve the flood prediction system including technologies and modeling

Strengthen the Flood Forecasting and Warning centre with improved technology and expert manpower

Design the embankments considering the current and future risks of all hazards

Building the risk reduction capacity of the field level officials

	<p>Field Offices (Cyclone)</p> <p>Conduct local level assessment and prepare the local level risk reduction plan in the water sector</p> <p>Construct the embankments as per the design approved by the Water Development Board suitable to the local context</p> <p>Conduct the situation analysis and maintain a database on the existing infrastructure such as embankments, polders and sluice gates. Carry out regular maintenance work to strengthen the system</p> <p>Construct protecting embankments in time and maintaining satisfactory standard after receiving approval of the authority.</p>
BWDB (flood)	<p>Conduct sectoral risk assessment and develop a long term risk reduction action plan for the sector</p> <p>Consider all hazard risk and use the historical disaster data and information while designing the embankments, protection walls, sluice gates and other infrastructure</p> <p>Keep budget provision for building of protection walls, repairing of embankments, sluice gates and lock gates in disaster prone areas.</p> <p>Field Offices</p> <p>Conduct local level assessment and prepare the local level risk reduction plan in the water sector</p> <p>Construct the embankments as per the design approved by the Water Development Board suitable to the local context</p> <p>Conduct the situation analysis and maintain a database on the existing infrastructure such as embankments, polders and sluice gates. Carry out regular maintenance work to strengthen the system</p> <p>Construct protecting embankments in time and maintaining satisfactory standard after receiving approval of the authority.</p> <p>Strengthen the data collection system for flood forecast</p>
Ministry/Agency	Specific DRR roles and responsibilities
Ministry of Agriculture	<p>Designate a senior staff as disaster management Focal Point of the Ministry.</p> <p>Ensure participation of different levels relevant staff in the NDMC, MoFDM, IMDMCC, District, Upazila and Union level disaster management committee meetings.</p> <p>Ensure a sectoral risk assessment exercise and prepare risk reduction action plan involving all its departments.</p> <p>Ensure budgetary provision to support implementation of the sectoral risk reduction action plan.</p> <p>Develop program for research with regards to hazard analysis and its affect in agriculture.</p> <p>Allocate more resources in the agricultural research for disaster resilient technological innovations</p> <p>Direct all concerned bodies of the Ministry to consider and incorporate Disaster Risk Reduction Activities in the process of developing their development plans.</p> <p>Develop, approve and introduce methodologies for integrating Disaster Management Plan at local level offices within their development planning processes.</p> <p>Ensure partnerships with different stakeholders including Research based Institutions, NGOs and CBOs.</p> <p>Ensure a process of updating Agriculture Extension operational field manuals and guidelines.</p> <p>Support in institutionalizing training on Disaster Risk Reduction Approaches in Agri- sectors.</p> <p>Instruct DAE to undertake awareness initiatives among communities on the importance of disaster risk reduction in Agriculture.</p>

DG, DAE

Ensure incorporation of disaster risk reduction considerations in the programmes and policies and plans of the ministry and its agencies

Coordinate the ongoing disaster risk reduction activities by relevant offices

Strengthen collaboration with National and International research organizations.

Allocate funds as per the budgetary provision for undertaking various risk reduction activities, such as staff capacity building, repairing /re-construction, seed storage, various required analysis etc.

Establish and operate own control room to obtain report on crop damage.

Establish control room and alert all concerned for safe custody of Seed, fertilizers, insecticides, agri-implements upon receiving Cyclone / flood forecast.

Prepare a sectoral contingency plan for disaster management and risk reduction activities of the ministries.

Establish a Disaster Risk Reduction Focal Point

Support the ministry of Agriculture in developing methodologies for integrating Disaster Management Plan at local level offices within their development planning processes.

Establish partnerships with different stakeholders including Research based Institutions, NGOs and CBOs.

Updating the Agriculture Extension operational field manuals and guidelines.

Support in institutionalizing training on Disaster Risk Reduction Approaches in Agri- sectors.

Develop and implement strategies to improve the farmers' knowledge base on disaster risk reduction in Agriculture.

Undertake risk reduction activities to include managing stocks of seeds, seedling beds, fertilizers, insecticides and agri-implements.

Manage awareness and education activities within the agricultural sector, and with staff on disaster risk reduction, hazard and threat analysis.

Field Offices

Attend all the meetings of the Upazila Disaster Management Committee

Conduct risk assessment in the agricultural sector of the area and prepare risk reduction action plan

Ensure effective implementation of the plans and programmes to reduce the current and future risks in the agricultural sector

Establish partnerships with different stakeholders including Research based Institutions, NGOs and CBOs.

Organize field demonstrations to further explore for technological innovations to address current and future risks including climate change impacts

Undertake risk reduction activities to include managing stocks of seeds, seedling beds, fertilizers, insecticides and agri-implements.

Organize awareness and education activities within the agricultural sector, and with staff on disaster risk reduction, hazard and threat analysis.

Bangladesh
Agricultural
Development
Corporation

Explore for innovative technologies suitable for the current and future climatic conditions through farmers' field demonstrations

Establish strong linkages with all the agricultural research agencies and the extension departments to test and validate new technological options

Establish and maintain a database of all agencies involved in agricultural research and extension services

Arrange stocking of seeds according to necessity.

Ensure timely supply of agricultural inputs to the farmers at a reasonable price

Ministry/Agency

Specific DRR roles and responsibilities

**Ministry of
Fisheries and
Livestock**

Designate the Focal Point for Disaster in the Ministry.

Conduct sectoral risk assessment and prepare a sectoral risk reduction action plan.

Ensure budgetary provision of the ministry to ensure implementation of the plan.

Mainstream disaster management principles and practices within the national development plan of the Ministry of Fisheries and Livestock.

Develop program for research with regards to hazard analysis and its affect in fisheries and livestock.

Ensure budgetary provision of the ministry for its disaster management affairs.

Implement the policy of undertaking risk assessment and risk reduction activities which affect the services of the Ministry.

Implement the policy of undertaking training, awareness and education programs with livestock and fisheries industries concerning risk assessment and risk reduction activities.

Manage emergency preparedness including the identification of high lands for livestock shelter, and the stockpiling of animal and poultry emergency stocks of vaccines and medicines.

Prepare and manage an inventory of livestock and poultry numbers in high risk areas.

Develop schemes and systems for the management of livestock during emergencies, including the provision of emergency feeding, livestock evacuation, and for post event industry rehabilitation.

Manage risk to the trawler fleet by ensuring that all boats are registered with the Marine Fisheries Department, and that all boats have suitable safety equipment including radio and wireless and life jackets.

In consultation with the Bangladesh Water Development Board, undertake risk reduction activities in salt water ingestion, by ensuring government embankments and sluice gates are constructed to a proper height and sufficient strength

In coordination with the Bangladesh Agricultural Development Board, ensure the availability of power driven pumps for evacuating coastal ponds.

Implement awareness activities with fishermen regarding hazards, risks and risk reduction options, including individual preparedness for cyclone/flood season.

Develop a sectoral risk mitigation and preparedness strategy plan of the ministry.

Develop an emergency sectoral response plan of the ministry.

Establish a risk communication system of the ministry.

Prepare a sectoral contingency plan for disaster management and risk reduction activities of the ministries.

Ensure incorporation of disaster risk reduction considerations in the programmes and policies and plans of the ministry and its agencies

Coordinate the ongoing disaster risk reduction activities by relevant offices

*Directorate of
Livestock*

Designate a Disaster management Focal Point.

Consider disaster risks in the plan of action of the Directorate of Livestock

Implement the action plan

Undertake training, awareness and education programs with poultry and livestock industries concerning risk assessment and risk reduction activities.

Manage emergency preparedness including the identification of high lands for livestock shelter, and the stockpiling of animal and poultry emergency stocks of vaccines and medicines.

Prepare and manage an inventory of livestock and poultry numbers in high risk areas.

Develop schemes and systems for the management of livestock during emergencies, including the provision of emergency feeding, livestock evacuation, and for post event industry rehabilitation.

Support the Ministry of Fisheries and Livestock and Prepare a sectoral contingency plan for disaster management and risk reduction activities of the ministries.

Field Offices

Designate a Disaster management Focal Point to participate in all the Disaster Management Committee Meetings.

Identify the local level risks in the livestock sector and prepare a local level risk reduction action plan

Implement the action plan utilizing the allocation under Annual Development Programme budget

Prepare and manage an inventory of livestock and poultry numbers in high risk areas.

Undertake training, awareness and education programs with the small and medium poultry and livestock farmers concerning risk assessment and risk reduction activities.

Prepare the local level contingency plan for disaster management and risk reduction activities of the ministries.

Department of Fisheries

Designate one Focal Point for disaster management and inform all concerned authorities including the Disaster Management Bureau.

Consider disaster risks in the plan of action of the Directorate of Fisheries

Implement the action plan

Undertake training, awareness and education programs with fish farmers concerning risk assessment and risk reduction activities.

Support the Ministry of Fisheries and Livestock and prepare a sectoral contingency plan for disaster management and risk reduction activities of the ministries.

Field Offices

Designate a Disaster management Focal Point to participate in all the Disaster Management Committee Meetings.

Identify the local level risks in the livestock sector and prepare a local level risk reduction action plan

Implement the action plan utilizing the allocation under Annual Development Programme budget

Prepare and manage an inventory of livestock and poultry numbers in high risk areas.

Undertake training, awareness and education programs with the small and medium poultry and livestock farmers concerning risk assessment and risk reduction activities.

Prepare the local level contingency plan for disaster management and risk reduction activities of the ministries. Designate a Disaster management Focal Point to participate in all the Disaster Management Committee Meetings.

Identify the local level risks in the livestock sector and prepare a local level risk reduction action plan

Implement the action plan utilizing the allocation under Annual Development Programme budget

Prepare and manage an inventory of livestock and poultry numbers in high risk areas.

Undertake training, awareness and education programs with the small and medium poultry and livestock farmers concerning risk assessment and risk reduction activities.

Prepare the local level contingency plan for disaster management and risk reduction activities of the ministries.

<i>Ministry/Agency</i>	<i>Specific DRR roles and responsibilities</i>
Ministry of Health and Family Welfare	<p>Designate a senior staff in this Ministry as the focal point.</p> <p>Ensure participation in all Meetings of NDMC, IMDMCC and MoFDMC.</p> <p>Instruct all its divisions to follow up the decisions of the Meetings of NDMC, IMDMCC and MoFDM linked to its own Ministry's roles and responsibilities.</p> <p>Incorporate disaster risk reduction considerations into the policies, plans and programmes of the Ministry of Health and Family Welfare</p> <p>Ensure budgetary provisions for its risk reduction and management activities of the ministry.</p> <p>Establish a risk reduction communication system of the ministry.</p> <p>Ensuring implementation of the risk reduction programmes in the health sector through establishing an effective monitoring and evaluation system</p> <p>Develop a contingency plan of its risk reduction and management activities of the ministry.</p>
Directorate of Health	<p>Support the Ministry of health and Family Welfare in incorporating disaster risk considerations with the sectoral policies</p> <p>Conduct sectoral risk assessment, prepare and implement risk reduction action plan of the ministry.</p> <p>Undertake risk assessment and risk reduction activities, including vulnerability assessment of health care facilities and infrastructure.</p> <p>Undertake awareness and education campaigns about health care, including public health, hygiene, sanitation and safe drinking water.</p> <p><i>Field Offices</i></p> <p>Manage the preparedness of health facilities and services, including ambulance, medicine, vaccines, and surgical equipment at Upazila level.</p> <p>Train volunteers about oral saline, first aid and preventative medicine.</p> <p>Prepare lists of medical and para-medical personnel in high risk areas.</p> <p>Conduct planning for medical support in Health Sub-Centres and cyclone shelters.</p> <p>Ensure provision of electricity and telecommunications services in high risk areas, and establish alternate methods for the provision of these services.</p>

Ministry/Agency

Specific DRR roles and responsibilities

Ministry of Environment and Forests

Designate a senior staff in the Ministry as the focal point to establish contacts with NDMC, MOFDMC and IMDMCC

Establish a task force in the ministry to ensure framing of a working guideline and a risk reduction action plan for the ministry:

Ensure top most priority for forestation especially in the coastal areas, Chars and islands involving local people.

Ensure effective supports to various local and national NGOs for social forestation.

Ensure proper and effective protection of the existing forests of the country and formulate appropriate law from protecting environmental degradation for emission of polluting gases or liquid by the chemical industries.

Ensure budgetary provision for its risk reduction activities.

Ensure planning on climate change and research activities.

Undertake risk management and risk reduction programs (including the provision of funding) such as forest mangrove afforestation and the expansion of forestation in coastal areas and coastal islands.

Manage the environment, including environmental degradation and the impacts of hazards on such degradation.

Legislate for the protection of the environment against chemical and other pollutants.

Undertake forestation projects on roads and embankments in high risk areas.

Assist community risk reduction activities such as local forestation programs.

Manage community awareness programs on hazards and the environment.

Develop a sector wise Risk mitigation and preparedness strategy plan.

Develop a sectoral emergency response system.

Prepare a contingency plan for the ministry.

Department of Forests

Assist the ministry of Environment and Forest to develop policies and legislation to protect the protect the forest,

Prepare a guideline to ensure afforestation in the coastal areas, Chars and islands involving local people.

Ensure effective supports to various local and national NGOs for social forestation.

Ministry/Agency

Specific DRR roles and responsibilities

Ministry of Information

Designate a senior staff in this Ministry as the focal point.

Identify one liaison officer for each division of the Ministry.

Issue directives to the radio, television, news media, press information department, Mass communication department, films & publications department to promote dissemination of risk reduction information in the electronic and print media

Regulate and monitor the performance of Radio, Bangladesh Television, News Media, Press Information Department, Mass Communication Department and Films and Publications Department in their allocated roles and responsibilities.

Undertake mass education and awareness activities through television, radio and other media which should include actions for individual, family and community in pre-impact preparation, and post impact response, relief and recovery.

	<p>Establish a system in TV and Radio, which will ensure interpretation of technical aspects of warning terminology into a understandable message for common people at risk.</p> <p>Arrange wide publicity of cyclone and flood warnings and signals.</p> <p>Prepare a contingency plan of the ministry.</p> <p>Establish strong liaison with MOFDM.</p> <p>Ensure budgetary provision for managing risk reduction activities.</p>
<i>Bangladesh Betar</i>	<p>Establish and maintain communications (telephone, fax, email) with Meteorological Department, FFWC, MoFDM and T&T board</p> <p>Design and implement awareness and public education programmes in cooperation with the Met Dept and MoFDM, including individual, family and community prevention, preparedness and response actions, warning signals and their meaning.</p> <p>Publicise short talks on government disaster risk management policy and practice.</p> <p>Organize awareness campaigns on the revised signalling system of cyclonic storm for the river and sea port</p>
<i>Bangladesh Television</i>	<p>Establish contact with Meteorological Department and ensure proper functioning of telephone and tele-printer to prevent possible disconnection, arrange, if necessary, non-exchange Magneto telephone line of T&T Board. Arrange fax communication (email) with Meteorological Department, Flood Forecasting and Warning centre and Disaster Management Bureau at all times.</p> <p>Telecast special TV programmes in different channels such as talk shows, debate competitions, short films, tele- drama, on hazards, risk reduction, risk treatment strategies, response and recovery coordination, public safety and preparedness activities at individual, family and community level.</p> <p>Telecast special education and awareness programs in coordination with the Met Department and the MoFDM.</p> <p>Telecast short films and videos on disaster management.</p>
<i>Mass Communication Department</i>	<p>Support an increased public awareness including information on hazards, risk reduction, risk treatment strategies, response and recovery coordination, public safety and preparation activities at individual, family and community level, using videos, through cinema, films, booklets and other mass information methods.</p> <p>Publicise instructions regarding physical infrastructure to reduce loss and damage.</p>
<i>Bangladesh Telecommunication Regulatory Commission (BTRC)</i>	<p>Designate a senior staff as the Disaster Management focal point and establish contacts with NDMC, IMDMCC and NDMAC</p> <p>Issue directives to its all level offices to support NDMCC, IMDMCC and NDMAC down to Divisional Commissioner, DC, TNO and UP-Chairperson wherever necessary.</p> <p>Establish networks with all the mobile phone companies and use those for speedy dissemination of early warning information to the community</p> <p>Manage the risk assessment and risk reduction activities for preventing damage or loss to services and infrastructure such as mail and post, government records, cash and other valuables as planned.</p> <p>Instruct concerned authorities to Prioritize effective steps in keeping telephone services operational day and night before hand.</p> <p>Assist MOFDM and BMD in establishing an effective early warning system.</p> <p>Undertake sectoral risk assessment and prepare a sectoral risk mitigation and preparedness plan.</p>

	<p>Ensure budgetary provision for risk reduction activities.</p> <p>Establish strong communications and coordination with MOFDM.</p> <p>Instruct all telephone and internet service providers to follow the instructions and ensure supports required in disaster situations.</p> <p>Form a task force comprising of management and technical staff who will work in a disaster situation.</p> <p>Arrange effective training to increase the capacity of the task force members on how to deal with and respond in disaster situation.</p> <p>Prepare a contingency plan for risk reduction and management involving all its departments.</p> <p>Reallocate its resources including staff if necessary.</p>
<p>Bangladesh Telecommunication Company Ltd (BTCL)</p>	<p>Conduct sectoral risk and vulnerability assessment and prepare a risk reduction action plan</p> <p>Implement the plan</p>
<p>DG, Bangladesh Post Office</p>	<p>Conduct sectoral risk and vulnerability assessment and identify the vulnerable structure, design and implement a plan to strengthen the buildings</p> <p>Identify safe places for construction of new structure</p>
<p>Ministry/Agency</p>	<p><i>Specific DRR roles and responsibilities</i></p>
<p>Ministry of Local Government, Rural Development and Cooperatives</p>	<p>Develop a sectoral risk mitigation and preparedness strategy plan through conducting a detailed sectoral risk assessment.</p> <p>Ensure budgetary provision for the implementation of the plan</p> <p>Establish an effective monitoring and evaluation system to ensure effective utilization of resources</p> <p>Encourage local government to consider disaster risk when developing roads, bridges and culverts, and other local infrastructure.</p> <p>Encourage local government to construct hazard resilient helipads in off shore islands.</p> <p>Support education and awareness campaigns to ensure people undertake risk reduction activities, including preparedness activities prior to cyclone/storm season.</p> <p>Establish a sectoral risk communication system of the ministry.</p> <p>Develop a sectoral contingency plan of its risk reduction and management activities</p>
<p>Local Government Division</p>	<p>Designate one Liaison Officer in the Local Government Division as the Disaster Management Focal Point</p> <p>Ensure that design of all the structure considers local context and the current and future all hazard risks</p>
<p>Local Government Engineering Department (LGED)</p>	<p>Designate one Liaison Officer in the Local Government Engineering Department as the Disaster Management Focal Point</p> <p>Consider all hazard risks in preparing the Action Plan of the Local Govt. Engineering Department</p> <p>Draw up plans of feeder roads, bridges and culverts and complete their construction keeping provision for easy flow of waters and easy discharge of tide waters.</p> <p>Encourage and inspire people through Union Parishads for construction of two storied buildings if possible. Suggest that at least one room on the roof of cyclone/flood resisting brick built residential house for the purpose of using them as shelter place during cyclone/flood.</p> <p>Prepare maps identifying population centres, water holes (wells), protected ponds/water reservoir/tube-wells for drinking water and other water sources.</p>

<i>Rural Development and Cooperatives Division</i>	<p>Designate One Liaison Officer as the Disaster Management Focal Point</p> <p>Consider all hazard risks in preparing the Action Plan of the Rural Development and Cooperatives Division/Bangladesh Rural Development Board</p> <p>Undertake training, awareness and education programs for the beneficiaries of with the small and medium poultry and livestock farmers.</p> <p>Support education and awareness campaigns concerning risk assessment and risk reduction activities</p>
<i>Department of Public Health Engineering (DPHE)</i>	<p>Identify local level risks related to safe drinking water and hygiene practices through community consultation and prepare the risk reduction action</p> <p>Develop joint strategy to utilize the resources of the government, NGOs and other private sector actors in ensuring implementation of the risk reduction action plan developed</p> <p>Coordinate activities of NGOs and other private sector actors to ensure synergies and avoid duplication</p> <p>Provide technical support to maintain the standard</p> <p>Establish an effective monitoring and evaluation mechanism to ensure effective utilization of resources</p>
<i>Ministry/Agency</i>	<i>Specific DRR roles and responsibilities</i>
Ministry of Housing and Public Works	<p>Designate one responsible person in the Ministry as the focal point for Disaster Management affairs.</p> <p>Ensure participation in all Disaster Management Committee's Meetings starting from National to Upazila level for planning, rescue, evacuation and rehabilitation works.</p> <p>Undertake a sectoral risk assessment initiative with a view to develop a plan of action</p> <p>Issue directives to ensure proper execution of the Building Code</p> <p>Develop policies and procedures for funding repairs and reconstruction of Govt. infrastructure, facilities and structures in hazard impact areas.</p> <p>Ensure post hazard impact and risk assessment issues are considered in any reconstruction activities.</p> <p>Develop and implement a training programme for its staff at different levels on disaster risk reduction in the housing and public works sector.</p> <p>Establish a strong monitoring system to monitor the quality of construction works of the government and in the private sector</p> <p>Prepare a contingency plan for the ministry as a whole to handle any disastrous situation involving all its divisions and field offices.</p> <p>Ensure budgetary provision for all kinds of initiatives and responses.</p> <p>Establish a risk reduction communication system within and across the ministry.</p> <p>Develop a contingency plan of the ministry.</p>
<i>Public Works Directorate</i>	<p>Ensure proper execution of the Building Code</p> <p>Include current and future disaster risks in the policies, programmes and guidelines of all the development works of the Directorate</p>

<i>Ministry/Agency</i>	<i>Specific DRR roles and responsibilities</i>
Ministry of Establishment	<p>Issue directives to incorporate disaster management considerations in the human resource development policies and guidelines of all the ministries and departments</p> <p>Issue directives to include disaster management as a subject in all the training courses of public training institutes</p> <p>Establish a risk reduction communication system within and across the ministry.</p> <p>Develop risk mitigation / preparedness strategy/plan of the ministry.</p> <p>Develop an emergency sectoral response system.</p> <p>Develop a contingency plan of the ministry.</p>
Ministry of Finance	<p>A senior officer in the Ministry will act as the focal point of ensuring mobilization of all necessary financial resources for all the activities related to whole of Govt Disaster Risk Reduction Approaches and initiatives.</p> <p>Designate a senior staff as the liaison officer in the Ministry for disaster management activities.</p> <p>Identify one liaison officer in each of the divisions of finance ministry for disaster management activities.</p> <p>Develop funding policy and establish a disaster risk reduction fund as per the direction of the NDMC</p> <p>Mainstream disaster management principles and practices within national financial development processes and policies.</p> <p>Ensure necessary financial allocation with regards to the request made by concerned Ministries, Departments and Bodies.</p> <p>Establish close communication and contacts with concerned Ministries, Committees and Bodies for supporting their planned activities related to Risk Reduction initiatives with regards to financial supports.</p> <p>Ensure approval of necessary financial resources for Disaster Impact and Risk Assessment of concerned Ministries/ Departments/ Committees.</p> <p>Develop and implement a Disaster Management Training Policy for Finance Ministry staff.</p> <p>Develop, approve and introduce methodologies for integrating disaster management planning for resources mobilization at various levels within financial development planning processes.</p> <p>Ensure participation in National Disaster Management Council (NDMC), Inter-Ministry Disaster Management Coordination Committee (IMDMCC) and National Disaster Management Advisory Committee (IMDMAC) meetings.</p> <p>Issue necessary instructions and guidelines to all concerned regarding criteria for making financial requirements for Finance Ministry.</p> <p>Manage & maintain all accounts under the responsibility of the Chief Accounts Officer (Finance Division).</p>
Finance Division	<p>Designate one Liaison Officer in the Ministry as the Disaster Management Focal Point</p> <p>Ensure necessary financial allocation as per the request made by concerned Ministries, Departments and Bodies to implement their respective risk reduction plans and programmes</p> <p>Develop necessary instructions and guidelines for all concerned regarding criteria for making financial requirements for Finance Ministry.</p>

	Support the Ministry of Finance to develop, approve and introduce methodologies for integrating disaster management planning for resources mobilization at various levels within financial development planning processes.
<i>Economic Relations Division</i>	<p>Designate one Liaison Officer in the Division as the Disaster Management Focal Point</p> <p>Seek proposal from the concerned ministries and departments to contribute in the sectoral risk reduction</p> <p>Mobilize external funds for disaster risk reduction activities</p>
<i>Internal Resources Division (NBR)</i>	<p>Create a policy framework to promote risk reduction across sectors through tax exemption or other means</p> <p>Develop guideline for quick custom clearance of relief goods</p> <p>Develop guideline for custom duty on equipment to be used for disaster risk reduction and emergency response management</p> <p>Establish disaster management training programmes for NBR officials</p>
<i>Ministry/Agency</i>	<i>Specific DRR roles and responsibilities</i>
Ministry of Planning	<p>Designate one senior staff in the commission as the focal point to establish contacts with NDMC, MOFDMC and IMDMCC.</p> <p>Ensure participation of the Ministry of Planning in NDMC and IMDMCC meetings.</p> <p>Issue directives to incorporate disaster risk reduction and lessons learnt from the previous projects in the development project planning and appraisal process</p> <p>Ensure technical and budgetary provision to support its risk reduction and management activities in whole of Govt. Strategies.</p> <p>Make priority of mitigation projects, based on formal hazard and risk analysis, which could include but not limited to embankments, forestation, jetties at coastal islands, coastal roads, tele-communications and shelter places.</p>
<i>Planning Commission</i>	<p>Establish a policy guideline</p> <p>to ensure incorporation of disaster risk reduction considerations in the development programme design and appraisal process</p> <p>to ensure that all the investment projects and programmes will not create new risks and vulnerabilities</p> <p>Allocate more funds for the projects which would not create new risks and vulnerabilities to hazards</p> <p>Establish a strong monitoring and supervision system to ensure compliance with the Govt. procedure with regard to disaster risk reduction issues</p>
<i>Ministry/Agency</i>	<i>Specific DRR roles and responsibilities</i>
Ministry of Women and Children Affairs	<p>Designate a senior staff in the Ministry as the focal point to deal with Disaster management affairs.</p> <p>Establish close contact with the IMDMCC and MOFDM.</p> <p>Arrange capacity building program for the staff on risk management and risk reduction.</p> <p>Develop a sectoral risk mitigation and preparedness strategy plan.</p> <p>Incorporate risk mitigation and risk reduction elements in all the development programmes and plans of the Ministry of Women and Children Affairs (MWCA).</p>

Prepare a guideline to ensure that all the development projects and plans do not create any future risks for the women, children and elderly people

Undertake risk management and risk reduction program for women and children with respect to disaster.

Ensure a budgetary provision of the ministry for the risk reduction programme.

Ministry/Agency

Specific DRR roles and responsibilities

**Ministry of Law,
Justice and
Parliamentary Affairs**

Designate a senior staff in the Ministry to act as a liaison officer for all matters related to disaster Risk Management.

Advise the Ministry of Food and Disaster Management and the Disaster Management Bureau on drafting of legal documents

Expedite the process of approval of the policies and guidelines outlined in the National Disaster Risk Management Policy Framework by the NDMC through establishing close contact with PM office.

Assist the PM office to expedite the process of approval/endorsement of the Disaster Management Act, Standing Orders for Disaster Management and any other legal documents on disaster risk reduction and emergency response

Identify the sectoral risk and develop a sectoral risk reduction action plan of the Ministry.

Ensure budgetary provision of the Ministry for its risk reduction and management activities.

Ministry/Agency

Specific DRR roles and responsibilities

**Ministry of Social
Welfare**

Designate one person in the Ministry as the focal point for Disaster Management affairs.

Ensure risk reduction assessment of the ministry.

Prepare sectoral risk reduction action plan.

Ensure budgetary provision of the ministry.

Develop own risk mitigation/preparedness strategy plan.

Ensure own contingency disaster preparedness plan for all the offices of this Ministry jointly.

Develop an emergency sectoral response plan.

Establish a sectoral risk communication system.

Ministry/Agency

Specific DRR roles and responsibilities

Ministry of Shipping

Designate one senior staff in the Ministry as the focal point for disaster Management affairs.

Develop a risk mitigation and preparedness strategy plan.

Implement the plan of undertaking risk reduction activities including managing navigability of waterways (dredging, channel clearing), jetty construction and response and relief planning (maintain list of suitable shipping).

	<p>Ensure budgetary provision of the ministry for its disaster management activities.</p> <p>Ensure a sectoral risk assessment of the ministry.</p> <p>Prepare a sectoral risk reduction action plan.</p>
BIWTC	<p>Develop and maintain a database of all the water transport to be used for evacuation, carrying relief goods and manage relief operations</p> <p>Made budgetary provision for the repair and maintenance of the water transport</p> <p>Undertake a risk assessment and identify vulnerable jetties, ships and ferries</p> <p>Keep budgetary provisions for risk mitigation and preparedness activities of the ministry</p> <p>Organize educational and awareness programmes for the ministry and its agency staff on how to keep the asset and infrastructure safe from any disaster risk</p>
BIWTA	<p>Identify one Liaison Officer in BIWTA as the Disaster Management Focal Point for disaster related issues.</p> <p>Participate in the meeting of Disaster Management Committee and assist in project preparation for rescue, relief and rehabilitation operations.</p> <p>Take security steps for protection of own ships, shore facilities, signals, waterway marks, lighthouse and buoys.</p>
<i>Ministry/Agency</i>	<i>Specific DRR roles and responsibilities</i>
Ministry of Communication	<p>Designate one senior staff in the Ministry as a focal point for their disaster management affairs.</p> <p>Issue directives to develop a disaster risk management guideline of communication for all divisions.</p> <p>Establish close contact with MOFDM and NDMC.</p> <p>Develop risk mitigation and preparedness strategy plan of the ministry.</p> <p>Ensure preparation and implementation of sectoral risk reduction action plan.</p> <p>Ensure sufficient budget provisions for repair and maintenance to infrastructure.</p> <p>Coordinate risk reduction measures with Bangladesh Water Development and all divisions of the Ministry.</p> <p>Conduct risk reduction activities including repair and maintenance, improvement and strengthening infrastructure such as raising railway lines, roads, strengthening culverts and bridges and ensuring risk to infrastructure is reduced.</p> <p>Develop a risk communication system within the ministry.</p> <p>Develop an emergency sectoral response system.</p> <p>Develop a sectoral contingency plan.</p>
<i>Jamuna Bridge Division</i>	
<i>Bangladesh Railway Authority</i>	<p>Designate one Liaison Officer of the authority as the Focal Point and inform all concerned.</p> <p>Issue disaster management guidelines to all railway authorities.</p> <p>Consider current and future risks in the design of any new infrastructure</p>
BRTA	<p>Designate one Liaison Officer in the office as the Focal Point.</p> <p>Consider current and future risks in the design of any new infrastructure</p>

Directorate of Roads and Highways

Consider current and future disaster risks in the design of any infrastructure
Strengthen the roads and embankments, light bridges and culverts, so that they can withstand the tidal bore/high floods whipped up by cyclone.

BRTC

Ministry/Agency

Specific DRR roles and responsibilities

Ministry of Industries

Designate a senior staff as the focal point of the ministry.
Ensure participation in IMDMCC and DMC meetings.
Examine hazard impact at national and sub-national industry level, based on formal hazard and risk analysis.
Mainstream disaster management principles and practices in development planning processes of the ministry.
Develop research programs with regards to Hazards analysis and of the ministry.
Monitor sectoral risk reduction activities and programs and keep NDMC informed of the progress.
Ensure disaster risk management issues are considered when constructing new factories or industries.
Develop business continuity policy and procedures at industry and higher levels.
Prepare sectoral risk reduction action plan.
Ensure budgetary provisions of the ministry for disaster management activities.
Establish a risk communication system of the ministry.
Develop an emergency sectoral response system.

Ministry/Agency

Specific DRR roles and responsibilities

Ministry of Education

Designate one senior staff in the Ministry as the focal point for the affairs of disaster Management.
In consultation with Disaster Management Bureau, include disaster related subjects in the curricula of all schools at all levels.
Use hazard and risk maps in the design of new school buildings and other educational facilities to avoid current and future risks
Make provisions of separate facilities for male and female in the school buildings to be used as shelter during disaster
Construct all educational facilities as two storied buildings in high risk cyclone and flood areas.
Prepare a sectoral risk reduction action plan for its risk reduction and management activities.
Ensure sectoral risk assessment of the ministry.
Ensure budgetary provision for risk reduction activities of the ministry.

Ministry/Agency

Specific DRR roles and responsibilities

Ministry of Primary and Mass Education

Designate one responsible person in the Ministry as the focal point for the affairs of disaster Management.

Designate one liaison officer in each division.

Establish linkages with NDMC.

Use hazard and risk maps in the design of new school buildings and other educational facilities to avoid current and future risks

Issue instruction to all Primary School management to undertake necessary measures to protect School buildings / ensure less damage from any disaster.

Construct all primary educational facilities as two storied buildings in high risk cyclone and flood areas.

Include disaster related subjects in the curricula of all primary and mass education programmes and schools

Conduct awareness and education training for teachers and students in high risk areas on action to be taken during response and recovery operations, and conduct response and recovery exercises in conjunction with CPP every April and September.

Ensure the proper maintenance and repair of buildings in flood/cyclone areas.

Develop risk mitigation and preparedness strategy plan of the ministry.

Develop an emergency sectoral response system for the risk reduction activities of the ministry.

Establish a risk communication system within the ministry.

Prepare a contingency plan of its disaster management activities.

Directorate of Primary Education

Designate one Liaison Officer as the Disaster Management Focal Point

In consultation with the Disaster Management Bureau include disaster related subjects in the curricula of all primary schools and mass education programmes.

Ensure as far as possible construction of all primary educational institutions as multi-purpose disaster shelters.

Ministry/Agency

Specific DRR roles and responsibilities

Ministry of CHT Affairs

Designate a senior staff in the Ministry as the focal point for disaster management affair.

Instruct its all divisions to support to all concerned Ministries and departments.

Maintain close liaison with Prime Minister office, IMDMCC and MoFDM.

Undertake a sectoral risk assessment and prepare a risk reduction action plan of the ministry

Implement the risk reduction action plan of the ministry.

Ensure budgetary provision of the ministry for risk reduction activities.

Ministry/Agency

**Ministry of Science and
Information and
Communication
Technology**

Specific DRR roles and responsibilities

- Designate a senior staff in the Ministry as the focal point for its disaster management affairs.
- Ensure participation in IMDMCC meeting.
- Instruct to plan for reviewing the existing warning technological facilities.
- Undertake initiative to identify updated technological warning system.
- Ensure availability of modern technology needs to be replacing the existing warning technology.
- Develop a plan and extend required assistance to DMIC for development of modern warning system.
- Develop business continuity policy and procedures at industry and higher levels.
- Mainstream disaster management principles and practices in development planning processes of the ministry.
- Ensure disaster risk management issues are considered when constructing new factories or industries.
- Develop research programs with regards to Hazards analysis and of the ministry.
- Monitor sectoral risk reduction activities and programs and keep NDMC informed of the progress.
- Develop a sectoral risk mitigation and preparedness system.
- Establish a risk communication system of the ministry.
- Develop an emergency sectoral response system of the ministry.
- Establish a sectoral risk communication system of the ministry.
- Ensure budgetary provisions for its risk reduction and management activities of the ministry.

Ministry/Agency

**Ministry of Youth and
Sports**

Specific DRR roles and responsibilities

- Designate a senior staff in the ministry to act as Disaster Management focal point.
- Ensure participation in the IMDMCC meetings.
- Identify volunteers and ensure training on disaster management activities.
- Establish effective communication with MOFDM and DMIC.
- Ensure a sectoral risk assessment of the ministry.
- Ensure developing sectoral risk reduction plan.
- Ensure budgetary provision and allocation of resources.
- Arrange awareness and education activities within the Sectors.
- Allocate funds for undertaking various staff capacity building, training, establishing effective communication, hazards & threat analysis activities as per budgetary provision.
- Develop a sector wise Risk mitigation and preparedness strategy plan.
- Develop a sectoral risk mitigation and preparedness plan. Develop an emergency sectoral response system of the ministry.

Establish a risk communication system of the ministry.
Develop a contingency plan for its risk reduction and management activities of the ministry.

Ministry/Agency

Specific DRR roles and responsibilities

Ministry of Religious Affairs

Designate a senior staff in the ministry as the Disaster Management focal point.
Ensure participation in the IMDMCC meetings.
Establish effective communication with MOFDM and DMIC.
Ensure developing sectoral risk reduction action plan.
Keep budgetary provision for risk reduction activities.
Develop a sector wise Risk mitigation and preparedness strategy plan.
Ensure participation of religious leaders while preparing risk reduction plan.
Ensure budgetary provision and allocation of resources.

Ministry/Agency

Specific DRR roles and responsibilities

Ministry of Cultural Affairs

Designate a senior staff in the ministry as the disaster management focal point.
Ensure participation in the IMDMCC meetings.
Establish effective communication with MOFDM and DMIC
Undertake sectoral risk assessment and develop risk mitigation and preparedness strategy plan involving NGO, CBO and UP in view of developing cultural activities as awareness building and education purposes.
Involve civil society organizations while preparing risk mitigation and preparedness plan.
Mainstream disaster management principles and practices within the ministry's development programmes.
Ensure budgetary provision and allocation of resources for risk reduction activities

Ministry/Agency

Specific DRR roles and responsibilities

Ministry of Civil Aviation and Tourism

Designate a senior staff in the ministry as a focal point for all disaster management affairs.
Issue directives to all the divisions /directorates to develop a disaster risk reduction plan.
Establish close contact with the Ministry of Food and Disaster Management and ensure development of own plan of action.
Undertake risk assessment of different essential services, depots, aircrafts, tourist establishments.
Undertake risk reduction initiatives to ensure the resilience of existing infrastructure to hazards and to reduce possible vulnerability of services and systems.

Prepare and implement a sectoral risk reduction action plan.

Ensure budgetary provision for its risk reduction activities.

Undertake risk reduction measures to ensure safety of the passengers and tourists

Instruct all divisions and directorates to establish coordination among them and develop an effective plan for risk reduction.

Conduct staff awareness and education on disaster risk reduction and effectiveness in the disaster situation.

Ensure a post impact hazard and risk analysis is undertaken and that risk treatment strategies are included in repair and rehabilitation activities.

Ministry/Agency

Specific DRR roles and responsibilities

Ministry of Land

Designate a senior staff in the ministry as the disaster management focal point.

Attend all the IMDMCC meetings.

Use hazard maps and develop a sector wise risk mitigation and preparedness strategy plan.

Ensure participation of water resources ministry while preparing risk reduction plan.

Consider disaster risks in land use planning

Develop and establish the policy for settlements in char and khas lands

Establish a sectoral risk communication system of the ministry.

Develop a contingency plan for its risk reduction and management activities of the ministry.

Mainstream disaster management principles and practices within the ministry's development activities.

Keep budgetary provision for risk reduction activities.

Allocate budgetary provision for undertaking various staff capacity building, training, establishing effective communication, hazards & threat analysis activities.

Ministry/Agency

Specific DRR roles and responsibilities

Ministry of Foreign Affairs

Designate a senior staff as the focal point to maintain necessary liaison with NDMAC, MoFDM, IMDMCC and NDMC.

Support and represent GoB disaster risk reduction activities and achievements at international forums as directed.

Establish and maintain contact with Donors / INGOs and foreign governments through Bangladesh Missions abroad.

Provide technical advice and support to NDMC/MoFDM/IMDMCC on the procedure for the provision of foreign government/agency relief and recovery support.

Assist other Ministries in the development of systems and procedures for the provision of foreign government/NGO support to disaster affected areas.

Create systems and procedures within Bangladesh Missions abroad to ensure timely provision of relief and recovery support from foreign government/NGO.

Ministry/Agency

Specific DRR roles and responsibilities

Ministry of Jute and Textiles

Designate a senior staff in the ministry as the disaster management focal point.

Ensure participation in the IMDMCC meetings.

Establish effective communication with MOFDM and DMIC

Undertake sectoral risk assessment and develop risk mitigation and preparedness strategy plan

Ensure participation of both the divisions of the ministry while preparing risk reduction plan.

Mainstream disaster management principles and practices within the ministry's development programmes.

Ensure budgetary provision and allocation of resources for risk reduction activities

Implement the risk mitigation and preparedness plan of the ministry

Ministry/Agency

Specific DRR roles and responsibilities

Ministry of Commerce

The Ministry will closely monitor on the supply and price of the essentials and commodities and collect reports from the local offices.

Develop a sectoral risk mitigation and preparedness strategy plan of the ministry.

Establish a risk communication system within and across ministries.

Develop an emergency sectoral response plan.

Ensure budgetary provision of the ministry.

Ministry/Agency

Specific DRR roles and responsibilities

Ministry of Power, Energy and Mineral Resources

Designate one responsible person in the Ministry as the Disaster Management focal point.

Issue necessary detail directives to the respective staff on their duties and responsibilities as a precautionary for disaster and post disaster situation.

Prepare a sectoral risk reduction action plan of the ministry.

Ensure sectoral risk assessment of the ministry for disaster management activities.

Ensure budgetary provision of the ministry for its risk reduction and management activities.

Undertake and manage risk reduction programs to ensure the resilience of infrastructure to hazards, and to reduce the vulnerability of services and systems.

<i>Petroleum and Mineral Resources Division</i>	Undertake planning to ensure uninterrupted services during hazard impact.
	Conduct staff awareness and education.
	Undertake risk assessment of powerhouses.
	Manage stocking levels of spare parts and other items in all central stores of Power Development Board/Rural Electrification Board located at Chittagong, Comilla, Barisal, Khulna, Iswardi, Bogra and Rangpur.
	Develop risk mitigation and preparedness strategy plan of the ministry.
	Develop an emergency sectoral response system.
	Establish a risk reduction communication system within and across the ministries.
	Prepare a contingency plan of the ministry for its risk reduction activities.
	Designate one responsible person in the Division as the Disaster Management focal point.
	Undertake risk assessment and prepare a risk reduction action plan of the Bangladesh Petroleum Corporation (BPC)
	Undertake and manage risk reduction programs to ensure the resilience of infrastructure to hazards, and to reduce the vulnerability of services and systems.
	Undertake planning to ensure uninterrupted services during hazard impact.
	Conduct staff awareness and education.
	Develop an emergency sectoral response system.
	Establish a risk reduction communication system within and across the ministries.
	Prepare a contingency plan of the Bangladesh Petroleum Corporation (BPC) for its risk reduction activities.

Ministry/Agency

Specific DRR roles and responsibilities

Ministry of Labour and Employment

- Designate a senior staff in the ministry as the disaster management focal point.
- Ensure participation in the IMDMCC meetings.
- Establish effective communication with MOFDM and DMIC
- Undertake assessment of industrial labour risk and prepare a risk reduction strategy
- Establish a guideline to ensure labour safety and improve the working condition
- Introduce a policy to compensate workers working in hazardous condition as well as to insure them from any unforeseen disaster
- Make budgetary provision for undertaking various staff capacity building, training, establishing effective communication, hazards & threat analysis activities.

Ministry/Agency

Specific DRR roles and responsibilities

Ministry of Liberation War Affairs

- Designate a senior staff in the ministry as the disaster management focal point.
- Ensure participation in the IMDMCC meetings.
- Establish effective communication with MOFDM and DMIC.
- Undertake assessment of risk and prepare a risk reduction and preparedness strategy plan for the ministry
- Keep budgetary provision for risk reduction activities.

Ministry/Agency

Specific DRR roles and responsibilities

**Ministry of Expatriates
Welfare and Overseas
Employment**

Designate a senior staff in the ministry as the disaster management focal point.

Ensure participation in the IMDMCC meetings.

Establish effective communication with MOFDM and DMIC.

Undertake assessment of risk with regard to overseas job market and the country hazard and disaster threat and prepare a risk reduction and preparedness strategy plan for the ministry

Keep budgetary provision for risk reduction activities.

Ministry/Agency

Specific DRR roles and responsibilities

**Divisional
Commissioner**

Ensure the constitution of District Disaster Management Committees and City Corporation Disaster Management Committees with its activation, ensure receipt of directives and information and draw benefits from available training facilities.

Arrange training and workshops on disaster related issues regularly by keeping the Disaster Management Bureau informed.

Prepare a comprehensive report on the list of vulnerable community and location map based on the compilation of 'Hazard, vulnerability and risk assessment report' prepared by the district disaster management committees and submit the same to the Disaster Management Bureau.

Prepare comprehensive short, medium and long-term risk reduction action plans at divisional level based on the compilation of short, medium and long-term risk reduction action plans prepared by district disaster management committees and submit the same to the Disaster Management Bureau.

Ensure that the risk reduction action plans are fully aligned with the development plan's priority areas

Provide necessary support to district and city corporation disaster management committees to create local level funds appropriate for the implementation of the risk reduction action plans.

Establish direct linkage with DMIC and ensure speedy dissemination of early warning messages to the district and city corporation levels

Support the district and city corporation disaster management committees to organize drills on the dissemination of warnings/forecasts, evacuation, rescue and primary relief operations with assistance.

Ministry/Agency

Specific DRR roles and responsibilities

**Deputy
Commissioner**

Ensure the constitution of District and Upazila Disaster Management Committees with its activation, ensure receipt of directives and information and draw benefits from available training facilities.

Arrange training and workshops on disaster related issues regularly by keeping the Disaster Management Bureau informed.

Prepare a comprehensive report on the list of vulnerable community and location map based on the compilation of 'Hazard, vulnerability and risk assessment report' prepared by the upazila disaster management committees and submit the same to the Disaster Management Bureau.

Prepare comprehensive short, medium and long-term risk reduction action plans at divisional level based on the compilation of short, medium and long-term risk reduction action plans prepared by upazila disaster management committees and submit the same to the Disaster Management Bureau.

Ensure that the risk reduction action plans are fully aligned with the development plan's priority areas

Provide necessary support to upazila disaster management committees to create local level funds appropriate for the implementation of the risk reduction action plans.

Establish direct linkage with DMIC and ensure speedy dissemination of early warning messages to the district and upazila levels

Support the upazila disaster management committees to organize drills on the dissemination of warnings/forecasts, evacuation, rescue and primary relief operations with assistance.

Ministry/Agency

Specific DRR roles and responsibilities

**Upazila
Nirbahi Officer**

Ensure the constitution of Upazila and union Disaster Management Committees with its activation, ensure receipt of directives and information and draw benefits from available training facilities.

Arrange training and workshops on disaster related issues regularly by keeping the Disaster Management Bureau informed.

Prepare a comprehensive report on the list of vulnerable community and location map based on the compilation of 'Hazard, vulnerability and risk assessment report' prepared by the union disaster management committees and submit the same to the Disaster Management Bureau.

Prepare comprehensive short, medium and long-term risk reduction action plans at divisional level based on the compilation of short, medium and long-term risk reduction action plans prepared by union disaster management committees and submit the same to the district disaster management committee.

Ensure that the risk reduction action plans are fully aligned with the development plan's priority areas

Provide necessary support to union disaster management committees to create local level funds appropriate for the implementation of the risk reduction action plans.

Establish direct linkage with DMIC and ensure speedy dissemination of early warning messages to the upazila and union levels

Support the upazila and union disaster management committees to organize drills on the dissemination of warnings/forecasts, evacuation, rescue and primary relief operations with assistance.

Ministry/Agency

Specific DRR roles and responsibilities

**Chairman,
Union
Parishad**

Ensure the constitution of union Disaster Management Committees with its activation, ensure receipt of directives and information and draw benefits from available training facilities.

Arrange training and workshops on disaster related issues regularly by keeping the upazila disaster management committee informed.

Prepare a comprehensive report on the list of vulnerable community and location map based on the compilation of 'Hazard, vulnerability and risk assessment report' and submit the same to the upazila disaster management committee.

Prepare comprehensive short, medium and long-term risk reduction action plans at divisional level based on the compilation of short, medium and long-term risk reduction action plans for the union and submit the same to the upazila disaster management committee.

	<p>Ensure that the risk reduction action plans are fully aligned with the development plan's priority areas</p> <p>Facilitate work of NGOs to ensure coordination and synergies among different programmes and activities undertaken locally.</p> <p>Facilitate coordination among different actors Provide necessary support to union disaster management committees to create local level funds appropriate for the implementation of the risk reduction action plans.</p> <p>Establish direct linkage with DMIC and ensure speedy dissemination of early warning messages to the district and upazila levels</p> <p>Support the upazila disaster management committees to organize drills on the dissemination of warnings/forecasts, evacuation, rescue and primary relief operations with assistance.</p>
<i>Members, UP</i>	<p>Attend regularly in the union Disaster Management Committee meetings and workshops</p> <p>Participate in the community vulnerability and risk assessment process, prioritize the risks and prepare the risk reduction action plans of their respective union</p> <p>Ensure participation of different vulnerable groups in the vulnerability and risk assessment process</p> <p>Assist the union chairman to mobilize resources for the implementation of risk reduction action plan prepared through community risk assessment</p> <p>Facilitate work of NGOs to ensure coordination and synergies among different programmes and activities undertaken locally.</p>
<i>Ministry/Agency</i>	<i>Specific DRR roles and responsibilities</i>
BDRCS	<p>Establish a Focal Point to attend the meetings of the National Disaster Management Council and Inter-Ministerial Disaster Management Coordination Committee and other national level disaster management related committees</p> <p>Incorporate disaster risk reduction considerations into the BDRCS policies, plans and programmes</p> <p>Collaborate with national committees related to disaster risk reduction</p> <p>Allocate resources and arrange training on risk reduction for its staff and the volunteers</p>
<i>Ministry/Agency</i>	<i>Specific DRR roles and responsibilities</i>
Other NGOs	<p>Establish a Focal Point to attend the meetings of the relevant disaster management committees both at national and local levels.</p> <p>Incorporate disaster risk reduction considerations into NGO policies, plans and programmes</p> <p>Collaborate with national committees related to disaster risk reduction</p> <p>Allocate resources and arrange training on risk reduction for its staff and the volunteers</p>

Bangladesh Climate Change Strategy and Action Plan (BCCSAP 2008) Programmes

Theme: T1: Food Security, Social Protection and Health

- Programme:**
- P1. Institutional capacity for research towards climate resilient cultivars and their dissemination
 - P2. Development of climate resilient cropping systems
 - P3. Adaptation against drought
 - P4. Adaptation in fisheries sector
 - P5. Adaptation in livestock sector
 - P6. Adaptation in health sector
 - P7. Water and sanitation programme in climate vulnerable areas
 - P8. Livelihood protection in ecologically fragile areas
 - P9. Livelihood protection of vulnerable socio-economic groups (including women)

Theme: T2: Comprehensive Disaster Management

- Programme:**
- P1. Improvement of flood forecasting and early warning
 - P2. Improvement of cyclone and storm surge warning
 - P3. Awareness raising and public education towards climate resilience
 - P4. Risk management against loss on income and property

Theme: T3 : Infrastructure

- Programme:**
- P1. Repair and maintenance of existing flood embankments
 - P2. Repair and maintenance of cyclone shelters
 - P3. Repair and maintenance of existing coastal polders
 - P4. Improvement of urban drainage
 - P5. Adaptation against Floods
 - P6. Adaptation against tropical cyclones and storm surges
 - P7. Planning and design of river training works

Theme: T4: Research and Knowledge Management

- Programme:**
- P1. Establishment of a centre for knowledge management and training on climate change
 - P2. Climate change modeling at national and sub-national levels
 - P3. Preparatory studies for adaptation against sea level rise
 - P4. Monitoring of ecosystem and biodiversity changes and their impacts
 - P5. Macroeconomic and sectoral economic impacts of climate change

Theme: T5: Mitigation and Low Carbon Development

- Programme:**
- P1. Improved energy efficiency in production and consumption of energy
 - P2. Gas exploration and reservoir management
 - P3. Development of coal mines and coal fired power stations
 - P4. Renewable energy development
 - P5. Lower emission from agricultural land
 - P6. Management of urban waste
 - P7. Afforestation and reforestation programme

Theme: T6: Capacity Building and Institutional Strengthening

- Programme:**
- P1. Revision of sectoral policies for climate resilience
 - P2. Main-streaming climate change in national, sectoral and spatial development programmes
 - P3. Strengthening human resource capacity
 - P4. Strengthening institutional capacity for climate change management
 - P5. Main-streaming Climate Change in the Media

