

Towards a Safer Sri Lanka

Road Map for Disaster Risk Management

Volume 2: Project Proposals



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A Road Map for Disaster Risk Management

Volume 2: Project Proposals

April 2006



**Ministry of Disaster Management and
Human Rights
Government of Sri Lanka**

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Towards a Safer Sri Lanka: A Road Map for Disaster Risk Management

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Message from Honourable Minister

In the immediate aftermath of the Tsunami of 26 December 2004, it was my privilege to chair the Parliamentary Select Committee established by the Sri Lankan Parliament to investigate whether there was a lack of preparedness to meet an emergency of the nature of the Tsunami, and to recommend what steps should be taken to minimize the damage caused by similar natural disasters. The Parliamentary Select Committee was successful in reaching to all parties concerned in order to recommend very important initiatives to be undertaken towards a safer Sri Lanka in the context of natural disasters, which the present Road Map on DRM has incorporated.

It is a great satisfaction therefore, as the Minister in charge of the subject of disaster risk management, to be able to launch the second volume of the Road Map for Sri Lanka. Since the catastrophic Tsunami, the Government of Sri Lanka has taken great steps to create an enabling and conducive environment for disaster risk reduction towards ensuring sustainable development in the country.

With an institutional base and supporting legal, policy framework in place, and a better understanding of what the key priorities for action are, how they should be accomplished, by whom, and when, we are set to embark on a challenging journey towards building a safer Sri Lanka. The end benefit would be to have in place the best possible capability in terms of institutions, structures, systems, mechanisms and human resources, to ensure that risks are mitigated and lives, assets and environment are safeguarded in the event of a disaster, and to recover to a level better than before.

The Road Map Volume II contains over 100 detailed proposals that aim to provide development partners with more information on each activity listed under the seven thematic areas in Volume I. The Road Map also contains proposals on human rights and conflict resolution, thereby also proposing creative approaches and solutions towards a strategy of confidence building. I have no doubt that the proposals if implemented will contribute significantly towards achieving sustainable development in the country and towards peace building.

I take this opportunity to thank Dr. P B Jayasundera for his personal involvement in this exercise. We face a great challenge ahead of us, together, however, with a bipartisan approach, strong political will and support from our development partners I am convinced that our vision will ultimately be translated into reality for the benefit of people of Sri Lanka.

Mahinda Samarasinghe

Minister of Disaster Management & Human Rights

Message from Secretary

It gives me immense pleasure to have contributed to the Second Volume of the Road Map for a Safer Sri Lanka. The Ministry of Disaster Management and Human Rights has been entrusted the subject of human rights in addition to the responsibility for natural and human disasters. Hence the proposals in this document adequately reflect the priority projects in the areas of natural, human disasters and human rights.

The formulation of the Road Map represents a very significant achievement for the Ministry since this clearly identifies the priority initiatives that need to be undertaken by various stakeholders- both public, private sectors and civil society to lead to a Sri Lanka that can pro-actively manage disasters.

The process of formulation of this document has been very consultative- the contributions to this initiative from various stakeholders has been immense and I express my sincere appreciation to all those who have contributed to this pioneering effort.

I also wish to particularly acknowledge the lead role played by the Disaster Management Centre, in coordinating and in drawing upon the participation of all the relevant agencies and institutions. The guidance provided by the Hon.Minister Mahinda Samarasinghe and his personal interest in developing this Road Map has been invaluable.

I also wish to acknowledge the support received from United Nations Development Programme in compiling this document. I have no doubt that this publication will pave the way for a safer Sri Lanka.

P. Dias Amarasinghe

Secretary

Ministry of Disaster Management & Human Right

Foreword

The 2004 Tsunami has wrought great damage and taken away almost 35,000 lives in Sri Lanka alone; but as a result, disaster risk management has been placed on the list of national priorities for Sri Lanka.

The various initiatives that have been successfully completed after the Tsunami, such as the Select Committee on Natural Disasters, enactment of the legislation on disaster management, establishment of the Ministry of Disaster Management and Human Rights, creation of the Disaster Management Centre and establishment of the National Council for Disaster Management are highly commendable.

The Department of Meteorology has also been gazetted under the Ministry of Disaster Management and Human Rights, which is the locus of heightened activity, towards a safer Sri Lanka. The Department of Meteorology has also been designated as the lead agency for Tsunami Early Warning.

One of the important developments through the Ministry of Disaster Management and Human Rights is the formulation of the Road Map for a Safer Sri Lanka, which has been evolved in a very participatory and consultative manner with collaboration of all relevant stakeholders. This exercise has been very well coordinated by the Disaster Management Centre with the support of lead agencies for different components; e.g: the thematic area of Early Warning was coordinated by the Department of Meteorology.

The Road Map is a document that captures the priority activities to be embarked on by various agencies that have to play a role in different areas of disaster risk management, over the short, medium and long term. As such, it is a very valuable document that will help coordinate efforts of various institutions, agencies, departments, private sector and civil society, in the area of disaster risk management.

It has been a pleasure to have contributed to this exercise and to have assisted in formulating a very practical strategy towards reducing the disaster risks in Sri Lanka. I am confident that this document will be of great value to Sri Lanka.

GHP Dharmaratne

Director General

Department of Meteorology

Ministry of Disaster Management and Human Rights

Preface

In the aftermath of the 26 December 2004 Tsunami, some significant steps have been taken by the Government of Sri Lanka towards putting in place a disaster risk management framework:

- *Creation of the Ministry of Disaster Management and Human Rights*
- *Enactment of Sri Lanka Disaster Management (DM) Act, No. 13 of 2005;*
- *Establishment of the National Council for Disaster Management (NCDM) chaired by H.E the President; and*
- *Creation of the Disaster Management Centre as per the DM Act;*

More recently the formulation and launch of the Road Map for Disaster Risk Management in Sri Lanka has been a big step forward.

This Road Map is a ten year framework to be addressed in a systematic and prioritized manner with the involvement of all relevant stakeholders. These priorities for action are consistent with the Sri Lanka Disaster Management Act No. 13 of 2005, and also in line with the Hyogo Framework for Action 2005-2015, which this Road Map will work towards implementing in the next decade. The Road Map covers the areas of *Policy, Institutional Mandates & Institutional Development; Hazard, Vulnerability & Risk Assessment; Tsunami & Multi-hazard Early Warning Systems; Disaster Preparedness Planning and Response; Disaster Mitigation and Integration into Development Planning; Integration of Disaster Risk Reduction into Development Planning; Community-based Disaster Management; Public Awareness, Education and Training.*

The present document, the Road Map Volume II, consists of project proposals for each of the proposed outputs under the seven components of the Road Map. These project proposals incorporate all necessary details viz. agencies involved, objectives, outputs, activities, time frame and geographical area of implementation, along with the budget required, funding status and the lead agency. The hard work and commitment shown by the various stakeholders in putting together these details for more than 100 projects is highly commendable and I am grateful to every working group member for their involvement throughout.

I sincerely hope that this document will lead to greater support from Sri Lanka's development partners.

I also take this opportunity to thank everyone involved in the production of this document and appreciate the support extended by the United Nations Development Programme for this activity and especially the guidance received from the Ministry of Disaster Management and Human Rights.

Major General Gamini Hettiarachchi

Director General

Disaster Management Centre

Ministry of Disaster Management & Human Rights

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Acronyms

ADPC	Asian Disaster Preparedness Center
ADRC	Asian Disaster Reduction Centre
AEA	Atomic Energy Authority
APELL	Awareness and Preparedness for Emergencies at Local Levels
ARTI	Agrarian Research Training Institute
BOI	Board of Investment
CBDM	Community based Disaster Management
CBDRM	Community based Disaster Risk Management
CBOs	Community Based Organizations
CCD	Coast Conservation Department
CDPA	Central Data Processing and Archiving Unit
CEA	Central Environmental Authority
CEB	Ceylon Electricity Board
CECB	Central Engineering Consultancy Bureau
CHPB	Centre for Housing Planning and Building
CPC	Ceylon Petroleum Corporation
DEM	Digital Elevation Model
DIA	Disaster Impact Assessment
DM	Disaster Management
DMC	Disaster Management Centre
DoA	Department of Agriculture
DoM	Department of Meteorology
DRM	Disaster Risk Management
DRR	Disaster Risk Reduction
DSs	Divisional Secretariats
EOC	Emergency Operation Centre
ERD	External Resources Department
ESNs	Emergency Service Networks
EW	Early Warning
EWS	Early Warning System
FEMA	Federal Emergency Management Agency
GCE (AL)	General Certificate of Education (Advanced Level)
GIS	Geographic Information System
GN	Grama Niladhari
GO	Government Organization
GSMB	Geological Survey and Mines Bureau

GTS	Global Telecommunications System
IAEA	International Atomic Energy Agency
ICTAD	Institute for Construction, Training and Development
ID	Irrigation Department
IDB	Industrial Development Board
IESL	Institution of Engineers Sri Lanka
IOC	Intergovernmental Oceanographic Commission
ISDR	International Strategy for Disaster Reduction
ITI	Industrial Technology Institute
LA	Local Authority
LG	Local Government
LGAs	Local Government Authorities
LIDAR	Light Detection and Ranging
LHZ	Landslide Hazard Zoning
LSSD	Landslide Studies and Services Division
M&E	Monitoring and Evaluation
MASL	Mahaweli Authority of Sri Lanka
MC	Municipal Council
MDTC	Management Development & Training Centres
MDTU	Material Development & Training Unit
M/FAR	Ministry of Fisheries and Aquatic Resources
M/DM&HR	Ministry of Disaster Management and Human Rights
MoDM	Ministry of Disaster Management
MRI	Medical Research Institute
MoE	Ministry of Education
MoH	Ministry of Health
NARA	National Aquatic Resources Research and Development Agency
NBRO	National Building Research Organization
NDMC	National Disaster Management Centre
NEOC	National Emergency Operation Centre
NGOs	Non Government Organizations
NHDA	National Housing Development Authority
NIE	National Institute of Education
NISD	National Institute of Social Development
NPPD	National Physical Planning Department
NSF	National Science Foundation
NWS&DB	National Water Supply & Drainage Board
PCs	Provincial Councils

PCLG	Provincial Council Local Government
PRDA	Provincial Road Development Authority
PS	Pradeshiya Sabha
RDA	Road Development Authority
RER	Radiological Emergency Response
RS	Remote Sensing
S&M	Surveillance & Monitoring
SAR	Search and Rescue
SCADA	Supervisory Control and Data Acquisition
SLIA	Sri Lanka Institute of Architects
SLIDA	Sri Lanka Institute of Development Administration
SLILG	Sri Lanka Institute of Local Governance
SLLRDC	Sri Lanka Land Reclamation and Development Corporation
SLRCS	Sri Lanka Red Cross Society
SLUMDMP	Sri Lanka Urban Multi-hazards Disaster Mitigation Project
SoPs	Standard Operating Procedures
ToR	Terms of Reference
TOT	Training of Trainers
TRC	Telecommunications Regulatory Commission
UC	Urban Council
UDA	Urban Development Authority
UGC	University Grants Commission
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
USAID	United States Agency for International Development
USGS	United States Geological Survey
WMO	World Meteorological Organisation
WRB	Water Resources Board

Executive Summary

Over the past few decades, disaster losses in Sri Lanka have increased substantially. The country is prone to natural disasters caused by floods, cyclones, landslides, drought and coastal erosion with increasing instances of environmental pollution related hazards. The devastation caused by the Indian Ocean tsunami of 2004 has highlighted that Sri Lanka is also vulnerable to low-frequency, high impact events which cause extensive damage and reverse years of development gains.

Over the last year, the Government of Sri Lanka has taken significant steps towards strengthening legislative and institutional arrangements for disaster risk management. The Sri Lankan *Parliament Select Committee on Natural Disaster*, a bi-partisan committee, was constituted to deliberate on issues relating to the status of disaster management in Sri Lanka. The Committee's recommendations towards achieving a safer Sri Lanka have subsequently guided legislative and policy efforts in this regard.

In May 2005, the *Sri Lanka Disaster Management Act No.13 of 2005* was enacted, which provides the legal basis for instituting a Disaster Risk Management (DRM) system in the country. The Act establishes the *National Council for Disaster Management (NCDM)* and the *Disaster Management Centre (DMC)*. The NCDM chaired by H.E. the President, vice-chaired by the Hon. Prime Minister with participation of the Leader of Opposition, Ministers, Provincial Council Chief Ministers and five members of the Opposition, provided direction to DRM in the country. In November 2005, the *Ministry of Disaster Management (MoDM)* was established under the Hon. Prime Minister. In January 2006, the *Ministry of Disaster Management and Human Rights (M/DM&HR)* was created as a separate Ministry with NCDM and DMC gazetted under its purview. It has been accorded the lead role in directing the strategic planning process for disaster prevention, mitigation, response and recovery.

After the tsunami, the need to coordinate efforts of various government agencies and the offers of support by international agencies in the area of DRM both for natural and human-made disasters has been recognised. A comprehensive DRM framework for Sri Lanka will unify the efforts of all agencies working in various sectors across all regions and levels of development activity. The DMC has prepared such a framework to identify and coordinate multi stakeholder efforts in the next 10 years through a holistic strategy or 'Road Map' towards building a safer Sri Lanka. Consultations with provincial and district administrations of Hambantota, Ampara and Kandy have gone towards enriching the various proposals presented. This Road Map is focused on seven thematic components which are consistent with ongoing and past efforts in the field of disaster risk management and development planning, and as in the Hyogo Framework of Action 2005-2015:

Policy, Institutional Mandates, and Institutional Development

Hazard, Vulnerability and Risk Assessment

Tsunami & Multi-hazard Early Warning Systems

Preparedness and Response Plans

Mitigation and Integration of Disaster Risk Reduction (DRR) into Development Planning

Community-based Disaster Risk Management

Public Awareness, Education and Training

Proposals for projects under each of the seven components, with details of agencies involved, time frame, budget requirements, and outputs, are presented in Chapters 2 through 8. Implementation arrangements for the Road Map are discussed in Chapter 9.

These components have been developed through a consultative process which has helped in the identification of gaps, needs, priorities and strategies for further action. These consultations included the district level meetings of the Minister and other consultations with civil society. Priority areas for immediate action have been identified by working groups to address them in a systematic and prioritized manner with the requisite collaboration of relevant stakeholder agencies, departments and ministries in Sri Lanka. These priorities for action are consistent with the Sri Lanka Disaster Management Act No.13 of 2005, and also in line with the Hyogo Framework for Action 2005-2015, which this Road Map will work towards implementing over the next decade.

Chapter 1

Introduction to the Road Map for a 'Safer Sri Lanka'

1.1 Key Objectives

In the aftermath of the tsunami there has been a renewed attempt to institutionalize a Disaster Risk Management (DRM) framework in Sri Lanka. The need has been felt to complement the ongoing policy and legislative efforts with risk identification and reduction strategies. National and local level institutions must be strengthened while paying due attention to Community-based Disaster Risk Management (CBDRM). While formulating national and provincial level action plans for poverty alleviation and infrastructure development, there is also a need to consider the different kinds of hazard risks and vulnerabilities across the country. This will enable the strengthening of local and national governance structures as well as emphasize national and community-based environmental resource management for long-term risk reduction.

In acknowledging these present needs, the Ministry of Disaster Management and Human Rights (M/DM&HR) proposes a comprehensive framework which will identify and coordinate multiple stakeholder efforts in the next 10 years through a holistic strategy or 'Road Map' towards building a 'Safer Sri Lanka'. The plan will be implemented by identifying 'priority projects' across different areas for action.

1.2 The Consultative Process

The Road Map is broadly focused on seven thematic components which are consistent with ongoing and past efforts in the field of DRM and development planning in Sri Lanka. The strategy proposed by the DRM framework seeks to cover the following areas:

- Policy, Institutional Mandates and Institutional Development
- Hazard, Vulnerability and Risk Assessment

Tsunami and Multi-hazard Early Warning System
Planning for Disaster Preparedness and Response
Disaster Mitigation and Integration into Development Planning
Community-based Disaster Risk Management (CBDRM), and
Public Awareness, Education and Training

These components have been developed through a consultative process for the identification of gaps, needs, priorities and strategies for implementation. The strategies and priorities for particular projects have been developed by Working Groups comprising of multiple stakeholders representing relevant agencies from all sectors involved in DRM. The resulting conclusions and priorities for action have been made consistent with the DM Act. The framework will work towards implementing the provisions of this Act, in collaboration with all relevant stakeholder agencies over the next 10 years. Detailed consultations with various stakeholders have been engaged in, facilitated by the Ministry of Disaster Management and Human Rights in the districts of Hambantota, Ampara and Kandy, in addition to discussions with other national level stakeholders, including the Police and Armed Forces.

1.3 Components of the Road Map

The Road Map is focused on seven thematic components which are consistent with ongoing and past efforts in the field of DRM and development planning. The strategy proposed by the DRM framework for Sri Lanka will cover the following areas:

- 1.3.1 Policy, Institutional Mandates and Institutional Development* including components like preparation of a national disaster management plan ,a national policy for DM, a national emergency response plan, reviewing, formalising mandates and identifying capacity development needs of agencies to perform their DM functions as well as steps to implement policies already in place.
- 1.3.2 Hazard, Vulnerability and Risk Assessment* comprising activities ranging from flood simulation modelling in key river basins to the development of a vulnerability atlas for Sri Lanka. This will enable development planning which is sensitive to multiple hazards and different kinds of vulnerabilities.
- 1.3.3 Tsunami and Multi-hazard Early Warning System* incorporating elements to generate advance warnings for floods, cyclones, abnormal rainfall, droughts, landslides, thus enabling decision-makers to take necessary measures well before the occurrence of a disaster.

- 1.3.4 *Preparedness and Response Plans* to minimise the adverse impacts of a hazard through effective precautionary actions and timely, adequate responses. Prioritised activities include development of a national emergency preparedness and response plan, and establishment of emergency operation centres at national, provincial, district and local authority levels..
- 1.3.5 *Mitigation and Integration of Disaster Risk Reduction (DRR) into Development Planning* encompassing activities relating to reducing impacts of droughts, preventing floods and landslides, and providing protection against storm surges, sea and coastal flooding by incorporating disaster risk considerations in development plans, thus ensuring sustainable development.
- 1.3.6 *Community-based Disaster Risk Management (CBDRM)*, involving activities that recognize the fact that communities, even when affected, are still the first line of defence against disasters if they are well prepared. Interventions proposed include mobilization of community teams, creation of a local network of trained volunteers and establishment of resource centres and small grants to fund priority projects by community teams.
- 1.3.7 *Public Awareness, Education and Training* focusing on empowering the public with ways and means to reduce disaster losses, and includes a national awareness campaign, designating a 'National Disaster Safety Day', promoting disaster awareness among professionals through integration in university curricula and training, and among children through integration in school curriculum and school awareness programmes.

These components are elaborated in the next few chapters along with the project proposals for various activities under each of these components.

Chapter 2

Policy, Institutional Mandates and Institutional Development

2.1 Key Issues

The objective of this component is to establish a culture of safety against disasters through policy support and strengthening of institutional mandates and capacities. To ensure a coordinated approach to risk reduction and disaster preparedness, individual institutions have to perform in accordance with their current mandates while also taking on additional responsibilities. This might require formulating legislations and developing institutional capacities in priority areas across various levels.

To achieve this, the projects under this component will broadly focus on:

- Development of a national policy on DM
- Enhancing capabilities through policy support and institutional development of Disaster Management Centre (DMC), the focal point for DM in Sri Lanka
- Enhancing capabilities through policy support and institutional development of all relevant agencies for DM in Sri Lanka
- Promote durable solutions for peace and greater involvement of public in shaping national policies and legislation
- Strengthening human rights, particularly of women, migrant workers, children and other disadvantaged groups

2.2 Strategy

i. Implementing Provisions of the Sri Lanka DM Act:

Sri Lanka has enacted a number of policies, ordinances and legislations that have had a bearing on DRM and associated issues. The recent Sri Lanka DM Act provides a strong footing for

coordinating all such ordinances and legislations with the relevant ministries and agencies. The strategy involves developing a National Policy on Disaster Management, a National Disaster Management Plan and a National Emergency Response Plan through a consultative process and establishing a National Disaster Management Advisory Committee.

ii. Reviewing and Formalising Institutional Mandates:

In the current set up, line agencies perform various functions under their respective mandates, and DRM is just one of their many responsibilities. National Building Research Organization (NBRO), Geological Survey and Mines Bureau (GSMB), the Department of Agriculture (DoA), are some examples of agencies which do not have mandates for the scope of activities they presently handle. As a result, there are gaps and many DRM-related activities do not receive attention. The DMC has to strengthen the mandates of these institutions and bring them together to work in a coordinated manner. DM plans of these different agencies should conform to the National DM Plan and the Emergency Operation Plan of the DMC. In addition, the DMC will support provincial and local government (LG) set-up to develop similar plans and increase their disaster response capability.

iii. Institutional Mandates, Capacities Developed:

There is also an urgent need to develop the mandates and capacities of some institutions involved in DRM. A case in point is the Landslide Studies and Services Division (LSSD). It was established under the NBRO to provide services for human settlements planning and the construction sector. However in the last 10-15 years the functional requirement of the LSSD has changed considerably. It is necessary to review it under the present DM framework in order to meet the current and future challenges of landslide risk mitigation in Sri Lanka. It should be granted wider responsibility and mandate, exceeding the simple functional responsibilities of a research organization to help it efficiently undertake mitigation, preparedness, identification of disasters, recovery and rehabilitation of landslide prone areas. If deemed necessary, LSSD could be restructured as a separate agency under the M/DM&HR, so as to take on the functional responsibilities of design and control of mountain development activities (similar to the Sri Lanka Land Reclamation and Development Corporation or SLLRDC).

In addition to formalising new mandates, capacities to implement these mandates need to be developed on a priority basis. Developing capacities will include support to the DMC's role as the lead agency for DRM and emergency operations in the country. The DMC will require resources and infrastructure support to execute its newly established mandate. Furthermore the disaster response capacities, especially those concerning search and rescue/ fire fighting are limited to only certain pockets in Sri Lanka, and are dependent on the limited resources available with local authorities. In response, the M/DM&HR would need to enhance these resources to strengthen the present capacities.

One of the key priorities of the Ministry is the establishment under one roof of the Disaster Management Centre, the National Tsunami Early Warning Centre; the National Multi-Hazard Early Warning Centre; the 24x7 Emergency Operations Centre; and the Risk Assessment, Data Collection, Analysis and Research Centre. This is being treated as a national priority.

Iv. CBDRM Policy:

Well-prepared communities are the first line of defence against disasters and a key to reducing vulnerability and increasing disaster resilience. Having a well-resourced and sustainable programme to advance CBDRM is therefore a key strategy to achieve a safer Sri Lanka. This can be facilitated by institutionalizing the CBDRM process at the grass-roots level, in activities of the different line agencies. This can be supplemented by the involvement of NGOs.

v. Incorporation in National Planning Policies:

Disaster Risk Assessment is not always considered in project formulation stages at present, hence posing a challenge to mainstreaming DRR efforts. Integrating DRM in National Planning Policies will make Disaster Risk Assessment mandatory for agencies in formulating and approving projects.

vii. Promote Durable Solutions for Peace

A mechanism for truth and reconciliation could contribute towards a durable political solution to the conflict in Sri Lanka. There is a need to carry out research on the applicability of such a mechanism in the Sri Lankan context. Furthermore, fostering better understanding between religious and ethnic communities by celebrating and respecting diversity can also help to promote peace.

viii. Promoting Greater Involvement of the Public in Shaping National Policies, Legislation and Enhancing Accountability

There is a need for greater involvement of the public in policy making to ensure that citizens are well informed and can contribute constructively to public debate, allowing them to influence and shape decision that will affect their lives. The creation of a freedom of information regime would also contribute significantly to enhancing public debate and fostering accountability.

xi. Strengthening Human Rights, Particularly of Women, Migrant Workers, Children and Other Disadvantaged Groups

There is a need for greater constitutional guarantees for human rights and this can be achieved by strengthening the chapter on fundamental rights in the Constitution, promoting the implementation of the Women's Charter and studying the possibility and implications of enfranchising migrant workers in the country.

2.3 Project Proposals

The following projects are being prioritised in the short to medium term due to their relevance to the policy and institutional context in Sri Lanka:

- P-1 Implementation of Provisions of DM Act

- P-2 Reviewing Institutional Mandates
 - P-2.1 Reviewing Institutional Mandates for Provincial Councils & Local Government Agencies to Perform Disaster Related Activities
 - P-2.2 Reviewing Institutional Mandates for Line Agencies to Perform Disaster Related Activities
- P-3 Developing Institutional Mandates and Capacities
- P-4 Formulation of CBDRM Policy
- P-5 Enforcement of Policies
- P-6 Establishment of the National Centre Building housing the DMC, Risk Assessment, Data Collection, Research and Analysis Centre, Tsunami Warning Centre, Multi-Hazard Warning Centre and National Emergency Operations Centre
- P-7 Facilitating the Reconciliation Process
- P-8 Good Governance and the Law-making Process
- P-9 Strengthening Human Rights: Constitutional Reform
- P-10 Strengthening Human Rights: Making Laws More Effective
- P-11 Strengthening Women's Rights
- P-12 Voting Rights of Migrant Workers
- P-13 Issues Pertaining to a Durable Peace in Sri Lanka
- P-14 Encouraging Good Governance within the Ministry

P-1**Implementation of Provisions of DM Act****Agencies involved:**

DMC and NCDM with guidance from Ministry of Disaster Management and Human Rights, and other relevant agencies; UNDP

Background and Rationale:

In May 2005, the Government of Sri Lanka passed the Sri Lanka DM Act No 13 of 2005 in the Parliament. It provides a strong footing for bringing together provisions of all existing Acts which have a bearing on DM and related issues. This Act provides a framework for DRM in Sri Lanka, addresses DM holistically, leading to a policy shift from response based mechanisms to a proactive approach and provides for the establishment of an institutional and legislative framework for DRM.

DMC will be the lead agency on DRM in the country. In November 2005, the Ministry of Disaster Management was established, which has from January 2006 been renamed as Ministry of Disaster Management and Human Rights, with Hon. Mahinda Samarasinghe, as Minister. DMC functions under this Ministry. DM needs a multi-disciplinary, multi-sectoral and multi-level approach for effective implementation. With this in view the NCDM under M/DM&HR includes ministers in charge of 20 subject areas, namely, Social Services, Rehabilitation & Reconstruction, Home Affairs, Health, Science & Technology, Housing, Coast Conservation, Irrigation, Power, Defence, Police, Finance, Land, Fisheries & Aquatic Resources, Foreign Affairs, Water Supply, Highways, Urban Development, Education and Environment. The multi-disciplinary and multi-sectoral approach is all the more justifiable owing to the broad range of hazards covered in the Act, namely, Floods, Landslides, Industrial Hazards, Tsunami (Seismic Wave), Earthquakes, Air Hazards, Fire, Epidemics, Explosions, Air Raids, Civil or Internal Strife, Chemical Accidents, Radiological Emergency, Oil Spills, Nuclear Disaster, Urban and Forest Fire, Coastal Erosion, Tornadoes, Lightning Strikes and Severe Thunder Storms.

Many of the provisions of the DM Act are not yet properly understood by the various institutions involved in different phases of the DRM cycle. Hence there is a need for the DMC to explain these provisions to involved agencies and plan out its activities properly and by formulating a national policy on DRM and preparing the National DM Plan for Sri Lanka.

Objective

To implement the provisions of the Sri Lanka DM Act, No.13, 2005

Time frame of implementation:

Year 1-5 (2006-2010) - Short and Medium term

Geographical area of implementation:

The entire country

Activities:

- a. Develop a national policy on DM through a consultative process
- b. Develop a national disaster management plan, national emergency response plan through a consultative process
- c. Constitute technical committees as appropriate representing various DM practitioners, professionals, academics, NGOs, development agencies etc.
- d. Study the recommendations given in the Report of the Parliamentary Select Committee and other relevant documents and reports
- e. Initiate necessary preliminaries such as circulars with guidelines regarding preparation of DM plans at national, ministry and agency level as required

Outputs:

National policy on DM prepared
National DM Plan, National Emergency Response Plan for Sri Lanka prepared
Technical Committees Established
Expert Group established
Preliminaries such as circulars with guidelines regarding preparation of DM plans at national, ministry and agency level as required initiated

Budget:

Year 1-2 (2006-2007) - SLR 75 mi (USD 0.75 mi)

Total Budget - SLR 75 mi (USD 0.75 mi)

Funding status:

New Funding Required - Local / International Funding

Contact persons in lead and participating agencies:

Secretary, M/DM&HR

Director General, Disaster Management Centre

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Participating Agencies - Respective DM line ministries and agencies

P-2.1**Reviewing Institutional Mandates for Line Agencies to Perform Disaster Related Activities****Agencies involved:**

DMC, Respective DM line ministries and agencies

Background and Rationale:

Currently line agencies perform various functions under their mandates, and DRM is just one of their many responsibilities. NBRO, GSMB and DoA are some examples of the agencies which do not have mandates for the scope of activities they handle.

Initially Landslide Studies and Services Division (LSSD) was established under NBRO to provide services for human settlements planning and the construction sector. During the last 10-15 years the functional requirement of the LSSD has increased considerably. It is necessary to review it under the present DM framework to meet the present and future challenges of landslide risk mitigation in Sri Lanka.

The agricultural sector is often affected by hazards, especially drought, but agriculture is not included in the list of subjects in Clause 3 (1) (d) of the DM Act. Furthermore, there is no lead agency responsible for mitigation of drought hazard in Sri Lanka.

As a result of the above there are gaps and many activities relating to DRM do not necessarily receive adequate attention in these line agencies.

Objectives:

To review, strengthen and provide hazard-specific institutional mandates for line agencies to perform or support relevant disaster related activities

Time frame of implementation:

Year 1-2 (2006-2007) Short term

Geographical area of implementation:

The entire country

Activities:

- a. Appoint a sub committee to study and review institutional mandates of line agencies
- b. Identify relevant functions which are not assigned to any institutions
- c. Identify institutions without appropriate mandates to function in various capacities
- d. Address the gaps in institutional functions through provision of mandate by issue of appropriate gazette notifications or legislative steps
- e. Introduce responsibility and accountability for assigned function

Outputs:

Institutional mandates for relevant line agencies established or clarified
New regulations enacted as needed

Budget:

Year 1-2 (2006-2007) - SLR 1 mi (USD 0.01 mi)
Total Budget - SLR 1 mi (USD 0.01 mi)

Funding status:

New Funding Required - Local / International Funding

Contact persons in lead and participating agencies:

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Participating agencies : Respective DM line ministries and agencies

P-2.2**Reviewing Institutional Mandates for Provincial Councils and Local Government Agencies to Perform Disaster Related Activities****Agencies involved:**

DMC, Guidance from NCDM

Background and Rationale:

There is a concern that disaster response capacities, especially those concerning search and rescue/ fire fighting, emergency health facilities are limited to only certain pockets in Sri Lanka, and also have to depend on the limited resources available with local authorities. In response, the DMC would need to enhance these resources to strengthen the present capacities.

Currently Provincial Councils (PCs), various Provincial Agencies and local authorities (LAs) perform various functions related to DRM. However they do not have mandates for carrying out some of the activities they handle during and after a disaster. As a result there are gaps and many activities relating to DRM do not necessarily receive adequate attention. There is a need for the DMC to strengthen the mandates of these PCs and LAs and to bring them together to work in a coordinated manner. DM plans of these different agencies should conform to the National DM Plan and the Emergency Operation Plan of the DMC.

Various DM activities must encompass the Provincial and LG set-up, with support extended by the DMC and other national level institutions. Their capacities on disaster response are limited and hence it is necessary to strengthen their capacities.

Objectives:

To review, strengthen and provide hazard-specific institutional mandates for PCs and LG agencies to perform or support relevant disaster related activities

Time frame of implementation:

Year 1-2 (2006-2007) Short term

Geographical area of implementation:

The entire country

Activities:

- a. Engage suitable consultant to study this aspect
- b. Identify and address the gaps in institutional functions of PCs and LG agencies through provision of mandate
- c. Legislative steps or regulations as appropriate
- d. Introduce responsibility and accountability for assigned function

Outputs:

Institutional Mandates for PCs and LG agencies established or clarified to perform or support relevant disaster related activities established

Budget:

Year 1-2 (2006-2007) - SLR 10 mi (USD 0.10 mi)
Total Budget - SLR 10 mi (USD 0.10 mi)

Funding status:

New Funding Required - Local / International Funding

Contact persons in lead and participating agencies:

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P-3**Developing Institutional Mandates and Capacities****Agencies involved:**

DMC, Respective DM line ministries and agencies

Background and Rationale:

There is a concern that disaster management capacities of various institutions are not adequate and have to depend on the limited resources available. In response, the DMC needs to enhance these resources to strengthen the present capacities.

There are gaps in the mandates of LSSD of the NBRO to handle present DM activities meeting the present and future challenges of landslide risk mitigation in Sri Lanka. If deemed necessary, through a gazette notification, LSSD should be restructured as a separate agency under the M/DM&HR with a wider responsibility and mandate, exceeding mere functional responsibilities of a research organisation to undertake mitigation, preparedness, EW, recovery and rehabilitation of landslide prone areas. The services have to be expanded to cover additional areas of vulnerability reduction and recovery of landslide affected areas amongst others.

A policy recommendation is to include agriculture in the list of subjects in Clause 3 (1) (d) of the Act by gazette notification, and designate drought risk mitigation as a functional responsibility of the Ministry of Agriculture / Department of Agriculture/ Department of Agrarian Services, as in Section 21(1) of the Act, followed by a gazette notification as given in clause 21(4) of the Act.

There is a need for DMC to strengthen the mandates of these institutions and to bring them together to work in a coordinated manner. This is also a requirement for the national policy to be developed under the Sri Lanka DM Act. DM plans of these different agencies should conform to the National DM Plan and the Emergency Operation Plan of the DMC. In addition, these plans have to encompass the Provincial and LG set-up, with support extended by the DMC and other national level institutions. Their capacities on disaster response are limited and require strengthening. DMC needs capacity enhancement in the form of trained personnel and other facilities.

Objectives:

Institutional capacities corresponding to new mandates developed
Roles and responsibilities of various agencies clarified

Time frame of implementation:

Year 1-2 (2006-2007) - Short term

Year 3-5 (2008-2010) - Medium term

Year 6-10 (2011-2015) - Long term

Geographical area of implementation:

The entire country

Activities:

- a. Development of institutional framework for ministries, departments, agencies and national & International NGOs to function corresponding to new mandates provided to PCs, LG agencies, DM line agencies
- b. Identification of needs and gaps in manpower, equipment and offices
- c. Training and capacity building of sections/divisions in the respective organizations dedicated to function as DM line agencies
- d. Institutionalised cooperation and coordination structures facilitated as needed
- e. Enhancing the capacity of DMC having trained personnel, a Head Office Building with an Emergency Operation Centre (EOC), communication and other necessary facilities

Outputs:

Institutional capacities corresponding to new mandates developed

Roles and responsibilities of various agencies clarified

Capacity of DMC developed for emergency operations and as lead agency for DRM

Budget:

Year 1-2 (2006-2007) - SLR 50 mi (USD 0.5 mi)

Year 3-5 (2008-2010) - SLR 50 mi (USD 0.5 mi)

Year 6-10 (2011-2015) - SLR 50 mi (USD 0.5 mi)

Total Budget - SLR 150 mi (USD 1.5 mi)

Funding status:

New Funding Required - Local / International Funding

Contact persons in lead and participating agencies:

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P-4**Formulation of CBDRM Policy****Agencies involved:**

DMC, Respective DM line agencies, SLRCS, NGOs and CBOs

Background and Rationale:

Well prepared and protected communities are the first line of defence against disasters and a key to reducing vulnerability and increasing disaster resilience. Having a well resourced and sustainable programme to advance CBDRM is therefore a key strategy to achieve a safer Sri Lanka. It will be necessary to involve the communities at risk in processes of DRM, as they have to cope and live with risks on a daily/continual basis. This can be facilitated by institutionalising the CBDRM process at the grass-roots level activities of line agencies and by involving NGOs.

Objectives:

Recognising CBDRM as a tool for risk reduction at local levels, especially for line agencies and ministries

Enhancing the capacity of the community to play an active role in DRR

Time frame of implementation:

Year 1-2 (2006-2007) - Short term

Geographical area of implementation:

The entire country

Activities:

- a. Recognise and provide legal basis for CBDRM groups at the village level
- b. Clear linkage established and roles identified for Community DRM groups and NGOs in DM plans at the Grama Niladhari (GN) Division, local authority, divisional and district levels
- c. Create National mechanism for coordination between DMC and NGOs in promoting CBDRM
- d. Development of common approaches and methodologies to CBDRM
- e. Creation of registration system for disaster response volunteers

Outputs:

CBDRM recognised as a tool for risk reduction at local levels, especially for line agencies and ministries and the capacity of the community to play an active role in DRR enhanced.

Budget:

Year 1-2 (2006-2007) - SLR 15 million (USD 0.15 mi)

Total Budget - SLR 15 million (USD 0.15 mi)

Funding status:

New Funding Required - Local / International Funding

Contact persons in lead and participating agencies:

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P-5**Enforcement of Policies****Agencies involved:**

DMC, Respective DM line ministries and agencies

Background and Rationale:

Disaster Risk Assessment is not always considered in project formulation stages at present hence posing a challenge to mainstreaming DRR efforts. Especially considering the present rapid development this is essential to ensure that the development does not create new hazardous conditions and environmental degradation, and also that prevailing disasters do not adversely affect the new development. Integrating DRM in National Planning Policies will make it mandatory for agencies formulating and approving projects avoiding such practices. Some examples are integration of DRR in the EIA process, in donor funded development projects and infrastructure development projects of different sectors.

Objectives:

- Optimise implementation of existing policies towards risk reduction
- Enhance enforcement of relevant existing ordinances, acts, regulations

Time frame of implementation:

Year 3-5 (2008-2010) - Medium term

Geographical area of implementation:

The entire country

Activities:

- a. Review of existing ordinances, acts and regulations
- b. Identify gaps and causes for inadequate enforcement
- c. Clarify and resolve areas of overlap or contradiction
- d. Develop capacities or resources needed as identified for effective enforcement

Outputs:

- Implementation of existing policies towards risk reduction optimised
- Enforcement of relevant existing ordinances, acts and regulations enhanced

Budget:

Year 3-5 (2008-2010) - SLR 15 million (USD 0.15 mi)

Total Budget - SLR 15 million (USD 0.15 mi)

Funding status:

New Funding Required - Local / International Funding

Contact persons in lead and participating agencies:

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P-6

Establishment of the National Centre housing DMC, Risk Assessment, Data Collection, Research and Analysis Centre, Tsunami Warning Centre, Multi-Hazard Warning Centre and 24 x 7 National Emergency Operations Centre

Agencies involved:

DMC, Department of Meteorology (DoM), Irrigation Department, MASL, CEB, GSMB, NBRO, NWS&DB, others

Background and Rationale:

One of the key priorities of the Ministry under this Road Map is the establishment under one roof the Disaster Management Centre, the National Tsunami Early Warning Centre; the National Multi-Hazard Early Warning Centre; the 24x7 Emergency Operations Centre; and the Risk Assessment, Data Collection, Analysis and Research Centre. This is being treated as a national priority. A building in the Department of Meteorology Compound is proposed of approximately 4000 m² of floor area.

This multi-purpose building will provide Sri Lanka with the wherewithal to link not just the national level agencies involved in various phases of disaster management from warning to response, but also linked to the Provinces, Districts, Divisions and local authorities. This National Centre Building will be operational 24x7 and will also incorporate an emergency number (e.g. 911) which any citizen can call for any type of assistance, round the clock. The Centre will be able to not just provide appropriate advice through the personnel available, but also link up additional resources, as necessary.

Construction of this National Centre Building will ensure that there is optimal utilization of resources, since most of the communication and networking requirements would be used more effectively. Further it will ensure that there is greater coordination and concerted efforts of all levels of administrative and political strata to handle all aspects of the disaster management cycle from warning generation to dissemination to response and recovery.

1. Disaster Management Centre

The Disaster Management Centre, as the key focal point for managing and coordination of all disaster management activities under the Ministry will coordinate with,

- Risk Assessment, Data Collection, Research and Analysis Centre
- Tsunami and Multi-hazard Early Warning Centres
- 24/7 Emergency Operation Centre

2. Risk Assessment, Data Collection, Research and Analysis Centre

In Sri Lanka, while a lot of information is available on natural hazards, relatively little is available on disaster risks except for work done by NBRO on landslide hazard risks. A system needs to be developed that systematically captures the existing and emerging patterns of disaster risk. The National Risk Assessment, Data Collection, Research and Analysis Centre would comprise:

- Systematic data collection both nationally and internationally
- Hazard mapping and Multi-hazard risk assessments
- Risk information system
- Inventory of past disaster impacts

3. National Tsunami Early Warning Centre

Sri Lanka as part of the Regional Tsunami Early Warning System is required to maintain a National Tsunami Early Warning Centre.

This National Tsunami Early Warning Centre will be linked to all relevant international agencies such as the Japan Meteorological Centre, Pacific Tsunami Warning Centre (Hawaii) and other national EWCs of in particular regional countries as well as the Regional Tsunami Watch Providers.

The National Tsunami Warning Centre thus needs to have up-to-date communication and networking equipment, to be effective. Once an earthquake of sizeable magnitude has occurred, the NTWC will be involved in real-time monitoring through available networks and pro-actively engage with the international and regional systems to confirm the presence of tsunami waves in the ocean prior to issuing of warnings.

The warning dissemination mechanisms of the National Tsunami Warning Centre will be shared with the Multi-hazard Warning Centre. Hence, it will ensure that in addition to the 3 commonly used modes of dissemination, the wireless radio network maintained by the Sri Lankan police is also brought into play to pass the early warning onto the nearly 120 police stations along the coast. The local police stations then will help the community to evacuate safely. Additional fail-safe communication modes (radios, satellite phones etc) proposed in the future to link up different administrative divisions of the country will also be incorporated into the TWC. The Communication System also envisages coastal tsunami early warning towers like in Thailand to be located.

4. Multi-Hazard Warning Centre

In Sri Lanka, issues with regard to weather related disasters are handled by the DoM while issues related to seismological activities and ocean wave related activities are handled by GSMB and NARA respectively. Similarly river flood activities are within the purview of Irrigation

Department. Early warning for hazards associated with major dams will be handled by Irrigation Department, Mahaweli Authority of Sri Lanka, Ceylon Electricity Board and National Water Supply and Drainage Board. Early warning related to other natural and man-made hazards will be by different institutions. A good networking facility connecting all the relevant institutions is vital for proper coordination during disasters, and the government has identified the need to establish a multi hazard EW centre as a matter of urgency. This centre has to communicate directly with international as well as related national agencies during emergencies. Therefore, equipping this centre with state-of-the-art communication and other facilities is important.

It is suggested that a state-of-the-art Natural Disaster EW Centre be established at the premises of the DoM at Bauddhaloka Mawatha, Colombo.

5. Emergency Operations Centre

An Emergency operation Centre at the national level is an important pre-requisite for effective and coordinated response to any emergency.

The Emergency Operation Centre will operate 24x7 and will coordinate all incident information and resources for management. It will receive, analyze, and display information about the incident to enable decision-making. The EOC will also find, prioritize, deploy, and track critical resources. It will enhance decision making, communication, collaboration, and coordination. The EOC will be manned by the relevant stakeholders and coordinated by the DMC.

This state-of-the-art Emergency Operation Center (EOC) will have all necessary equipment with conference facilities and display systems. The EOC will comprise one full-fledged Operations Room, one Control Room that is 24X7 operational and one Communication Room to manage all communication equipments (servers, switches, routers, GIS server, FAX and SMS server etc) and will function as one composite unit.

This EOC will be linked to the Provinces, Districts, DS Divisions and local authorities with fail-safe communication modes. This EOC will also incorporate an emergency number (ex: 911) which any citizen can call for any type of assistance, round the clock. The Centre will be able to not just provide appropriate advice through the personnel available, but also link up additional resources, as necessary.

The proposed site of the building is in the premises of Department of Meteorology, where not only is sufficient land available, but the site is centrally located and easily accessible to the senior administration of the Government.

Objectives:

To facilitate timely and end-to-end actions from EW of potential disaster events to adequate dissemination and communication, and response.

Time frame of implementation:

2006-2007: Short-term: Two years

Geographical area of implementation:

The Entire Country

Activities:

Year 1-2 (2006-2007)

- a. Establishment of the National Centre building at DoM premises
- b. Study undertaken to cost the establishment of these centres
- c. Improvement of communication and dissemination capacity
- d. Institutionalising of inter agency arrangements for national EW
- e. Establishment of coordinating mechanism with agencies within/ outside Sri Lanka

Output:

A 4/5-storeyed building of approximately 4000 m² (40,000 ft²) of floor area, housing the DMC and all above mentioned centres and adequate parking space in the premises of Department of Meteorology. Essential facilities to include air conditioning, generators for alternative power supply etc; Along with a fully functional and efficient multi-hazard EWS

Budget:

Year 1-2 (2006-2007)	- SLR 158 million (USD 1.58 mi)
Total Budget	- SLR 158 million (USD 1.58 mi)

Funding status:

Local funding/International Funding; New Funding Required

Contact persons in lead and participating agencies:

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P-7

Facilitating the Reconciliation Process

Agencies involved:

M/DM&HR, and other relevant ministries, Political and Civil Society Actors

Background and Rationale:

The Truth and Reconciliation Commission process in South Africa has aroused considerable interest in Sri Lanka, and also generated a debate as to the merits and demerits of adopting a similar process in Sri Lanka. An option would be to adopt a different mechanism but with a similar objective. In Sri Lanka there are powerful constituencies who prefer the option of a blanket amnesty for excesses committed by all parties involved in the conflict. This option may have serious human rights implications, which need to be studied carefully.

The Ministry would facilitate a study and discussion on the issue, taking into consideration other state facilitated reconciliation activities including the 1983 Presidential Truth Commission and the National Action Framework for Reconciliation formulated by the Office of the Commissioner General for Relief, Rehabilitation and Reconciliation with civil society participation. The study would examine the cultural and religious appropriateness of such a truth and reconciliation process, the impact it will have on a durable political solution and international human rights norms and standards on the issue.

Another preliminary step would be to conduct a study to ascertain the potential for reconciliation processes in the Sri Lankan conflict. The study could serve as a basis for and inform the design and planning process of a reconciliation mechanism.

Objectives:

To assist the process of finding a durable solution to the conflict through a process of reconciliation which will better ensure a sustainable peace and peaceful coexistence.

Time frame for implementation:

Year 1-2 (2006-2007) – Short term

Activities:

The study would involve a nationwide survey in order to ascertain the general public opinion on reconciliation. In addition to the general public, significant focus will be paid to interviewing

individuals who have been victims of direct violence, including those who have suffered the loss of family and friends, violence to person, forced displacement or attacks on property etc. as a result of the conflict. Careful attention needs to be paid to issues such as ethnic, gender and youth representation etc.

The public opinion survey will be supplemented by interviews with key informants including political, religious and other individuals, which will provide a perspective on the willingness and interests of influential actors towards reconciliation. A critical decision that will have to be made will be the parameters of the study as to whether the focus of reconciliation will be to the civil war only or include riots and violence preceding it.

Key themes, which could be examined, include:

- Popular understanding of what reconciliation means
- The need for a structured reconciliation process
- Mechanisms for reconciliation: a South African-style Truth and Reconciliation Commission, a Circle Process like in East Timor etc the need for public hearings etc.
- Justice and prosecution and willingness to grant amnesty
- Reparations and compensation

Geographical areas of implementation:

The Entire Country

Output:

- A study examining the appropriateness of, and potential for, a process of reconciliation
- A potential design plan for a future reconciliation process

Budget:

Year 1-2 (2006-2007)	- SLR 30 mi (USD 0.30 mi)
Total Budget	- SLR 30 mi (USD 0.30 mi)

Funding status:

New Funding Required - Local / International Funding

Contact persons in local and participating agencies

M/DM&HR -Secretary
Political and Civil Society Actors

Agencies involved:

M/DM&HR, Ministries of Constitutional Affairs, Justice, Media (for FOI Bill), Public Administration; Secretariat of Parliament, Civil Society Groups, Advisors

Background and Rationale:

The Ministry proposes to work to initiate a series of reforms that will introduce viable mechanisms and practices to promote principles of good governance. These include public consultation and engagement, stakeholder consultation, and greater accountability and transparency in the law and policy making process. Recently a report commissioned by the World Bank strongly supported the adoption of a Freedom of Information Act as a means to promote accountability and responsiveness in governance in the country. Some specific proposals to facilitate these principles are suggested below-

- a) Procedures to ensure adequate public notice of, and information about, proposed legislation.
- b) The need for stakeholder consultation when laws and policies are designed/ developed. A study of the stakeholder consultation process in Sweden will be useful in this regard.
- c) The promotion of White/ Green Papers on important areas of law reform.
- d) The introduction of a Freedom of Information Bill and a programme for the training of public officials and the institutional reforms necessary for the changes in mindset and process that such legislation will require. A draft Freedom of Information Bill was approved by the Cabinet of Ministers in February 2004 after consultation with civil society. Political developments thereafter may have prevented the enactment of the Bill.

A study should be commissioned to ascertain to what extent these practices formed part of Sri Lanka's democratic tradition since independence, a critical assessment of the present law and policy making processes and options for reform to promote principles of good governance.

Objectives:

Greater public and stakeholder involvement in law and policy-making will ensure better quality legislation and also promote public discussion and debate, which will help develop better informed citizens.

Time frame of implementation:

Year 1-2 (2006-2007) Short Term

Geographical area of implementation:

The Entire Country

Activities:

- Critically review the present lawmaking process
- Study international best practice with respect to stakeholder consultation and Freedom of Information Bills
- Study the changes that will be required in the Establishments Code, other governmental procedures and practices in order to facilitate the introduction of a Freedom of Information regime
- Train public servants on the implications of a Freedom of Information regime
- Equip governmental departments and agencies for adequate responses to a Freedom of Information regime

Outputs:

- Standard setting for law/policy making
- Promotion of principles of good governance
- Strengthening of Parliament and democratic institutions

Budget:

Year 1-2 (2006-2007)	- SLR 30mi (USD 0.30mi)
Total Budget	- SLR 30 mi (USD 0.30mi)

Funding status:

New Funding Required - Local / International Funding

Contact persons in lead and participating agencies:

M/DM&HR -Secretary
Ministries of Constitutional Affairs, Justice, Media (for FOI Bill), Public Administration;
Secretariat of Parliament, Civil Society Groups, Advisors

Agencies involved:

M/DM&HR, Ministries of Constitutional Affairs and Justice; Faculty of Law, University of Colombo, Civil Society groups

Background and Rationale:

A rights-based approach to development, disaster management and conflict resolution ensures that individuals and groups are the focus of initiatives and responses, policies and laws. Respect and concern for human rights should therefore permeate the programmes and projects of the Ministry. In recent years, civil society and academia have highlighted several deficiencies in the national human rights regime. These need to be addressed. The 1994-2000 debate on a new constitution provided an opportunity for serious debate and reflection on issues of effective enforcement, access to justice, the need to affirm domestically the indivisibility of human rights and the need to widen the reach of human rights to the increasing non-state sector.

The ministry would look at strengthening the chapter on fundamental rights and the enforcement mechanisms and procedures spelled out in the Constitution on the lines proposed in the Draft Constitution Bill, 2000, as multi-party consensus was reached on most of these issues.

Incorporating economic, social and cultural rights in the Bill of Rights as per international best practice, will help empower people in areas such as disaster management and responses, and access to basic needs such as health, education and access to housing and land.

Finally there is the need for strengthening of human rights dimensions in the conflict transformation process paying special attention to human right violations in the context of the armed conflict, Sri Lanka's obligations under international law, example the Geneva Conventions, and the rights of conflict affected women and children.

It has been pointed out that the Constitution refers to Sinhala as 'THE official language while Tamil is referred to as 'ALSO an official language'. All legislation includes a ritual like final provision declaring that in the event of inconsistency between the Sinhalese and Tamil versions of the legislation, the Sinhalese version shall prevail. Similar blanket provisions have been declared unconstitutional in countries such as Canada where there are two, equal official languages. These constitutional and legal provisions that may undermine the equality of status have to be looked at with a view towards rectifying anomalies. Since the Ministry of Constitutional Affairs is also addressing these issues it is important that the two ministries work together on these reforms. A

joint committee consisting of senior officials from the two ministries and a civil society membership will help to facilitate the process.

Objectives:

- To strengthen the constitutional recognition and protection of human rights.
- To ensure parity of status of the Sinhala and Tamil languages.

Time frame of implementation:

Year 1-2 (2006-2007) – Short Term

Geographical area of implementation:

The Entire Country

Activities:

- A series of seminars on the various aspects of constitutional reform with key stakeholders;
- Awareness-raising activities
- The drafting process

Outputs:

Greater constitutional guarantees for human rights, language rights and access to justice

Budget:

Year 1-2 (2006-2007)	- SLR 15 mi (USD 0.15 mi)
Total Budget	- SLR 15 mi (USD 0.15 mi)

Funding status:

New Funding Required - Local / International Funding

Contact person in lead and other participating agency:

M/DM&HR -Secretary
Ministries of Constitutional Affairs and Justice, Faculty of Law, University of Colombo, Civil Society groups

P-10

Strengthening Human Rights: Making Laws More Effective

Agencies involved:

M/DM&HR, Ministries of Constitutional Affairs, Justice, Higher Education, Universities, the relevant human rights institutions, civil society

Background and Rationale:

In Sri Lanka legislation and mechanisms for the protection of human rights exist. Often however, the legislation and institutions are not effective due to defects in implementation. This project seeks to empower institutions to perform more effectively. Law reform will be necessary in some situations:

Law Reform:

- i) A review of the Human Rights Commission Act to promote regional/provincial divisions of the Commission and access to the Commission, greater respect for its recommendations and directives, broaden its mandate to cover international human rights norms and commitments and where necessary have special sub-committees - e.g. on unethical religious conversions, economic, social and cultural rights; look at extending the mandate of the HRC and cover private sector.
- ii) Legislation on the Ombudsman, Official Languages Act should be reviewed.
- iii) Post Legislative Judicial Review- this Parliamentary Select Committee on human rights reached agreement in principle on this vital area in 2004 but due to dissolution of Parliament, it was not proceeded with.

Effective implementation of laws

There is a gap between the theory and practice of the law in the area of language rights. There is a paucity of competent public servants who are trilingual. Given the need for an international language it is vital that the longer term objective with respect to language proficiency be public servants, police officers and more youth who are fluent in the two official languages and English.

The education system needs to be reformed to reflect the priority for learning three languages not merely two. An incentive scheme should be designed for new recruits to the police and public service to encourage such persons to be trilingual. Effective audio-visual language training packages should be designed to facilitate such language learning.

Since the university system produces a large number of Arts graduates who find it difficult to secure employment, Arts and Language departments in universities should be encouraged to offer courses in Translation which not only include instruction in language skills but also techniques of translation etc. Most Arts Faculties in the university system have departments of Sinhala and several also have departments of English and Tamil. The language departments will with the assistance of other relevant departments develop curricula for an interdepartmental module in translation that will be promoted as a course that will make students employable but also equip them with skills that promote national unity and inter-ethnic harmony. Since universities will not have the resources to initiate a process described above the Ministry should facilitate the same by providing technical and other resources.

The 13th Amendment to the Constitution provides for an incentive scheme for the Police to learn another national language, but these provisions lack adequate implementation. Since the Ministry of Disaster Management and Human Rights will necessarily have to work closely with persons affected by disasters, affected communities and other groups in often the most isolated and vulnerable regions of the country, the Ministry could take the lead in developing a pool of skilled public servants and officials who will be able to provide leadership in such outreach activities.

Objectives:

- To strengthen institutions responsible for the protection of human rights
- To ensure effective implementation of existing laws with particular reference to language

Time frame for implementation:

Year 3-5 (2008-2010) – Medium Term

Geographical areas of implementation:

The Entire Country

Activities:

- A critical assessment of the performance of the Human Rights Commission, Ombudsman, Official Languages Commission with particular reference to law reform
- The drafting of law reform proposals for the relevant legislation
- Discussions with stakeholders and civil society groups
- Discussions with Universities on the translation course curriculum development
- Development of an Action Plan for translation courses

Outputs:

- Greater human rights and language rights protection on the ground.
- Making university graduates, in Arts faculties for example, more employable.

Budget:

Year 3-5 (2008-2010)	- SLR 30 mi (USD 0.30 mi)
Total Budget	- SLR 30 mi (USD 0.30 mi)

Funding status:

New Funding Required - Local / International Funding

Contact person in lead and participating agencies:

M/DM&HR – Secretary
Ministries of Constitutional Affairs, Justice, Higher Education, Universities, the relevant human rights institutions, civil society

P-11

Strengthening Women's Rights

Agencies involved:

M/DM&HR, Ministries of Women's Affairs and Constitutional Affairs, and civil society and labour organisations focusing on women's issues.

Background and Rationale:

This is a cross cutting issue which has significant impact on governance, human rights, and peace in Sri Lanka. The Ministry of DM and HR will work closely with the other relevant Ministries including Women's Affairs to provide legal teeth to the Women's Charter, encourage greater women participation in politics and other key democratic institutions such as the public service and the judiciary.

The Women's Charter is merely aspirational. It should be made legally binding. Election laws could be reviewed to require political parties to nominate a certain percentage of women for elections. Steps to promote greater women participation in democratic institutions without resorting to quotas would also be studied and explored.

At a more particular level the Ministry should consider immediate short-term measures to ensure the expression of views of women in tsunami and conflict affected areas. As stated above, in the various committees and task forces set up within the Ministry, the Ministry should serve as a model with respect to women's participation and representation.

A vital area to explore is with respect to protecting the human rights of migrant women workers. The Ministry should facilitate links between human rights and women's groups in the host countries and Sri Lanka. These groups can then support women who have serious problems through legal and other means. Several civil society groups in Sri Lanka have discussed such an initiative but have not proceeded beyond that point. Governmental support and facilitation could help progress on the issue. Such initiatives will supplement efforts to address such concerns through intergovernmental cooperation.

Objectives:

- To strengthen women participation in governance and public affairs.
- To empower marginalised women

Time frame for implementation:

Year 3-5 (2008-2010) – Medium Term

Geographical area of implementation:

The Entire Country

Activities:

- A review of developments since the adoption of the Women's Charter.
- A series of seminars/dialogues on women's empowerment, the Women's Charter and women's involvement and representation in politics and public life, with a view to the introducing law reform.
- A study on the viability of linkages between women's groups and human rights groups in Sri Lanka and in countries with women migrant workers, with a view to providing support to such workers.

Outputs:

The empowerment of an important, yet vulnerable, sector of Sri Lankan society

Budget:

Year 3-5 (2008-2010)	- SLR 20 mi (USD 0.20 mi)
Total Budget	- SLR 20 mi (USD 0.20 mi)

Funding status:

New Funding Required - Local / International Funding

Contact person in lead and participating agencies:

M/DM&HR - Secretary
Ministries of Women's Affairs and Constitutional Affairs, and civil society and labour organisations focusing on women's issues.

P -12

Voting Rights of Migrant Workers

Agencies involved:

M/DM&HR, Ministry of Labour, Elections Commission, ILO and Civil Society groups.

Background and Rationale:

Migrant workers contribute greatly to the national economy. Many of them undergo risks, leave family and friends, experience loneliness and isolation as they pursue employment abroad. They have no way of participating in the very basic and minimum citizen's right- the right to vote at democratic elections in their own country. Political parties and civil society groups have highlighted the need for migrant workers to be able to exercise their franchise, but little has been done to realize this aspiration. The European Union Election Observation Mission in its report released in February 2006 has urged the Government to take steps to facilitate the exercise of the right to vote of his important group of citizens and at a seminar following the release of the report some of the challenges involved in extending the franchise to this group were discussed. It became evident that there are various options that international best practice offers to achieve this objective.

While such facilitation of the franchise is desirable purely in terms of the human rights of the workers involved, at a policy level, it also amounts to recognition of their valuable contribution to the well being of the country.

Objectives:

To ensure that migrant workers exercise their right to vote at Sri Lankan elections in a manner that guarantees the integrity of the democratic process.

Time Frame for Implementation:

Year 1-2 (2006-2007) – Short term

Geographical Areas of Implementation:

The Entire Country

Activities:

- A comparative study on international best practice on the matter.
- A discussion on the practical consequences of extending the franchise in this matter and the

most appropriate method for doing so in Sri Lanka.

- A review of election laws to facilitate the change.

Outputs:

Greater citizen participation in governance

Budget:

Year 1 (2006-2007)	- SLR 20 mi (USD 0.20 mi)
Total Budget	- SLR 20 mi (USD 0.20 mi)

Funding status:

New Funding Required - Local / International Funding

Contact persons in lead and other collaborating agencies:

M/DM&HR - Secretary
Ministry of Labour, Elections Commission, ILO and Civil Society groups.

P-13

Issues Pertaining to a Durable Peace in Sri Lanka**Agencies involved:**

M/DM&HR, Ministry of Education, civil society actors, religious leaders

Background and Rationale:

The foremost challenge facing Sri Lanka today is that of developing a political solution to the country's protracted ethnic conflict. It is clear that any viable solution will have to include power sharing. Understandably, in recent years the focus of attention has been power sharing. However if a negotiated settlement based on a power sharing is to preserve the unity of the country and sustain a durable peace, it will also have to deal adequately with issues of national integration, power sharing at the Centre, creating a new inclusive Sri Lankan identity and establishing mechanisms and processes to facilitate national unity. Sri Lanka must begin the process of study and reflection on whether the Rainbow Nation concept popularized by President Mandela in South Africa, with its celebration of diversity and distinctiveness with unity and commonality could be adapted to facilitate the evolution of a new plural national identity and ethos here.

The Ministry would take the lead in commencing the process of deliberation on this important but often-neglected issue. The Ministry would encourage critical and new thinking in areas which often cause prejudice, sectarianism and conflict.

The possibility of introducing courses or modules in comparative religion in schools to encourage "understanding the other", so important in plural societies should also be explored. Recent tensions due to allegations of unethical conduct by various religious groups have highlighted the need for greater inter-religious dialogue and interaction. Many groups who have opposed legislation to restrict "unethical conversions" have supported the idea of an Inter-Religious Council of religious leaders to deal with allegations of unethical or improper conduct, through collaborative investigation, dialogue and mediation.

Objectives:

- To foster the development of a new inclusive national identity
- To facilitate a long-term peace in the country based on equality, dignity and mutual respect.

Time frame for implementation:

Year 3-5 (2008-2010) – Medium term

Organizational Area of Implementation:

The Entire Country

Activities:

- An in-depth study of the laws, practices and symbols of different religious and ethnic groups.
- Designing courses/modules on comparative religion, to be introduced as part of the school curriculum.
- A study of the appropriateness and viability of establishing an inter-religious council of religious leaders.

Outputs:

Promoting a durable solution to the ethnic conflict in Sri Lanka by fostering better understanding between religious and ethnic communities.

Budget:

Year 3-5 (2008-2010)	- SLR 40 mi (USD 0.40 mi)
Total Budget	- SLR 40 mi (USD 0.40 mi)

Funding status:

New Funding Required

Contact persons in lead and participating agencies:

M/DM&HR – Secretary
Ministry of Education, civil society actors, religious leaders

P-14**Encouraging Good Governance within the Ministry****Agencies involved:**

M/DM&HR, Ministry of Justice and civil society actors

Background and Rationale:

The Ministry of Disaster Management and Human Rights should not only declare its commitment to good governance, but it should also be seen to be practicing it. Good governance requires and encourages constructive criticism, checks and balances, institutional review mechanisms and debate and deliberation at the policy making level. The Ministry should establish within its purview an institutionalized ‘Critique Council’, consisting of relevant civil society organizations, although civil society groups are often wary of being co-opted by government and even healthy interaction between government and civil society suffers as a result. The composition of the council should take gender and ethnic balance and representation into account.

Objectives:

- Provide a useful forum for informed discussion and deliberation
- Ensure the engagement of civil society in a manner that is mutually beneficial
- Demonstrate openness, commitment to good governance and respect for diversity of views that is more than mere lip service, but rather, is concrete and tangible
- Be innovative and establish a best practice that could be emulated by others

Time frame of implementation:

Year 1-2 (2006-2007) – Short Term

Geographical area of implementation:

Within the Ministry. Civil society groups involved should be representative of the different regions of the country

Activities:

- Identifying individuals/groups to serve on the ‘Critique Council’
- Identifying mechanisms to provide for ‘Opposition’ deliberation and input
- Quarterly, structured meetings chaired by the Minister
- Provision of information to Members of the ‘Opposition’

Outputs:

A widely-representative, institutionalized ‘Critique Council’ within the Ministry, consisting of civil society actors

Budget:

Years 1-2 (2007-2008)	- SLR 10 mi (USD 0.10 mi)
Total Budget	- SLR 10 mi (USD 0.10 mi)

Funding status:

New Funding Required - Local / International Funding

Contact person in lead and participating agency:

M/DM&HR - Secretary
Ministry of Justice and civil society actors

Chapter 3

Hazard, Vulnerability and Risk Assessment

3.1 Key Issues

The objective of a hazard assessment is to *identify the probability of particular hazards* occurring in a specified future time period, as well as *gauging the intensity and area of impact*. Risk assessments include collecting detailed quantitative and qualitative information and understanding risk, its physical, social, economic, and environmental factors and consequences. It is a necessary first step for any disaster reduction measure or strategy for Sri Lanka.

Though many institutions have begun mapping hazard risks in Sri Lanka, there is no unified methodology or agreement in producing information. The practical problems of data exchange and scale of mapping have to be resolved. There is also a need for technical assistance from specialised training agencies to support such institutions to develop their own cadre of specialists. Training is required for all related agencies in systems such as GIS and remote sensing capabilities. Further, there is a need for all maps and other databases to be made available on digitised formats to agencies involved in DRM efforts.

Multi-hazard risk and vulnerability assessments are extremely important in the design and setting of engineering facilities and in zoning for land use planning. Such multi-hazard, vulnerability and risk assessments should be taken into account in planning the development of hazard prone areas.

In the case of conflict analysing the root, proximate and catalytic causes of conflicts is very important for the design of effective conflict transformation programs. There is also a need ensure that vulnerability reduction is factored into the design of reintegration programs for ex-combatants.

3.2 Strategy

The suggested programme of activities under the hazards, vulnerability and risk assessment theme, encompasses the systematic use of available information to determine the likelihood of certain events occurring and the magnitude of their possible consequences. As a systematic approach, it includes the following activities:

- Identifying the nature, location, intensity and probability of risk
- Determining the exposure and degree of vulnerabilities to the threat
- Identifying the capacities and resources available
- Determining acceptable levels of risk

In order to formulate a comprehensive strategy to carry out the assessments in the short, medium and long term, a three pronged approach has been suggested on a priority basis for the proposed activities over the next 10 years:

- i. The DMC will coordinate with all lead agencies for DM to work on arrangements by which resources can be shared and common agendas/ programmes drafted. DMC will take steps to re-establish the map users committee at Survey department to ascertain the needs of map producing agencies to have a better response and coordinating mechanism. DMC will also help decide the map scales and boundaries of administrative areas for uniform adaptation by map producing agencies
- ii. Data from satellites (high resolution images, remote sensing data etc) should be made available as a priority in the short term to all institutions engaged in risk management activities. DMC will facilitate interaction with International and UN agencies to obtain such data which can be exchanged between agencies working on different aspects of risk assessment in Sri Lanka. DMC will also assist in establishment of a committee for RS/GIS users in DM data production to identify and develop standards, facilitate data sharing and coordination among all GIS and RS users.
- iii. The hazard information should be freely available. Maps and other documents should be loaded onto the DMC website and be put together in a vulnerability atlas as well. The maps should also be revised regularly and detailed maps can be made available in a virtual database with restricted access.

The programme components under the theme of hazard, vulnerability and risk assessment include the following:

- Flood simulation models for all major river basins; development of flood inundation maps for urban areas frequently affected by flooding, as well as for downstream areas of main dams;
- Development of tsunami hazard zonation maps;

- Landslide hazard zonation mapping for landslide prone districts of Sri Lanka;
- Seismic zoning for areas vulnerable to seismic/ micro-seismic activities;
- Development of drought prone area maps;
- Development of wind zoning maps for cyclone prone areas;
- Development of Vulnerability Atlas for Sri Lanka and the establishment of Disaster Risk Management Information Systems;
- Factoring vulnerability reduction into reintegration programs for ex-combatants.

In the short term, several projects have been identified as 'high' priority for Sri Lankan agencies involved in risk mapping and assessments:

- i. *Landslide Hazard Zonation Mapping for Landslide Prone Areas:*
Since 10 districts of Sri Lanka are increasingly prone to landslides, there is an urgent need to support the landslide hazard zonation activities of the NBRO. This will enable identification of the most vulnerable areas as a first step to put in place a decision making tool that guides future physical planning in those areas.
- ii. *Flood Simulation Models for Major River Basins:*
It is necessary to develop flood simulation models for the major river basins in Sri Lanka (Kelani, Gin, Nilwala, Mahaveli in the short term and in Walawe, Bentara, Kalu and other river basins in the mediumlong term). This exercise will generate flood simulation tools as a decision-making aid for development plans. It will also feed into the development of flood inundation maps for urban areas frequently affected by floods.
- iii. *Flood Inundation Maps for Downstream Areas of Reservoirs to Assess the Flood Situation due to Sudden Release of Water or Dam Breaches:*
Large reservoirs located in the central and north-central regions also contribute to flood vulnerability due to the potential for sudden releases from spillways and possible dam breaches. A 'high' priority in this sector is to identify highly vulnerable areas in the downstream areas for 10 pre-identified high risk dams in the short term and for all other dams through medium term plans. This will also help improve the capacity for surveillance and monitoring of about 210 medium and large dams in the country.
- iv. *Supporting Interventions in the Short Term:*
To enable efficient flood inundation and dam break flood inundation mapping of the country as a priority in the short-medium term, specific interventions will be required from concerned agencies, ministries and the government:

- An airborne survey (LIDAR) of river basins is a basic requirement in the identification of physically vulnerable basin areas
- Need to make post tsunami studies by United States Geological Survey (USGS), Universities, Coast Conservation Department (CCD) and others available in a common format for involved agencies
- Share information across all other risk areas amongst partners included in Sri Lanka's risk management framework.

3.3 Project Proposals

The following projects have been identified to be of high priority with regard to the Hazards, Risk and Vulnerability Assessments for Sri Lanka:

HVR-1	Landslide Hazard Zonation Mapping
HVR-2	Establishment of DRM Information System at DMC
HVR-3	Flood Risk Assessment
HVR-4	Coastal Vulnerability Assessment & Risk Analysis
HVR-5	Development of Drought-prone Area Maps of LGA
HVR-6	Dam Safety & Risk Assessment
HVR-7	Vulnerability & Risk Assessment for LGA
HVR-8	Vulnerability Atlas
HVR-9	Development of Wind Zoning & Storm Surge Maps
HVR-10	Seismic Zonation Maps
HVR-11	Integrated Epidemic Risk Assessment
HVR-12	Major Transportation Accidents
HVR-13	Major Industrial Accidents
HVR-14	Terrorism & Human made Disasters
HVR-15	Reintegration of Ex-combatants

HVR-1**Landslide Hazard Zonation Mapping****Agencies involved:**

National Building Research Organization (NBRO)

Background and Rationale:

Nearly 23% of the land area of Sri Lanka spread over the central hills is highly prone to landslides. Scientific studies at NBRO have shown that the frequency of landslides is increasing in particular, because of improper human intervention such as unplanned intensive cultivation, nonengineered constructions, deforestation, and neglect of land.

NBRO, under its Landslide Hazard Zonation Mapping Project (LHMP), has so far generated landslide hazard zonation maps at 1: 50,000 scale covering Kandy, Kegalle, Ratnapura, Nuwara Eliya, and Matale districts, and at 1: 10,000 scale covering selected areas of the above districts. In addition, the Landslide Studies and Services Division (LSSD) of NBRO provides consultancy services to the government (for EIA & IEE) and the private sector regarding landslide hazard, vulnerability and risk assessments (instrumentation and monitoring), slope stability analysis, geotechnical testing and design of preventive and corrective measures.

Objectives:

- a. To update the already prepared landslide hazard zonation maps (both 1:10,000 and 1:50,000 scale maps) considering the changes in land use patterns within that area.
- b. To map the districts of Matara, Hambantota, Galle, Kalutara and Badulla at 1:50,000 scale, and selected vulnerable areas, at scales 1:10,000 or larger.
- c. To research on improving the reliability in predicted hazards.

Time frame for implementation:

Year 1-2 (2006-2007) - Short term:

Mapping in Matara, Galle, Kalutara and Hambantota Districts

Year 3-5 (2008 - 2010) - Medium term:

Updating already prepared maps, detailed mapping of selected vulnerable areas, and research on improvements to the methodology

Year 8-10 (2011 - 2015) - Long term:

Updating maps prepared during Phase I, detailed mapping of additional vulnerable areas, and continuing research on improvements to the methodology

Geographical Area of Implementation:

Landslide prone areas of Badulla, Nuwara Eliya, Ratnapura, Kegalle, Kandy, Matale, Galle, Matara, Kalutara and Hambantota districts.

Activities:

Year 1-2 (2006-2007):

- Landslide Hazard Zonation Mapping at 1:50000 scale in Matara, Galle, Kalutara and Hambantota Districts
- Landslide hazard zonation mapping at 1:10000 scale in selected areas of Kandy, Matara, Galle and Hambantota
- Strengthening the NBRO in order to carry out listed activities efficiently

Year 3-5 (2008 2010):

- Updating landslide hazard zonation maps prepared for the districts of Matale, Kandy, Nuwara Eliya, Kegalle, and Ratnapura
- Detailed mapping of selected populated urban areas in hilly regions at larger scales
- Assessment of reliability in predicted hazard and study the possible improvements to the existing methodology

Year 8-10 (2011 2015):

- Updating landslide hazard zonation maps prepared for the districts of Badulla, Matara, Kalutara, Galle, and Hambantota
- Detailed mapping of selected populated urban areas in hilly regions at larger scales
- Assessment of reliability in predicted hazard and study the possible improvements to the existing methodology

Output:

Updated landslide hazard zonation maps at 1:50,000 scale covering the districts of Matale, Kandy, Nuwara Eliya, Kegalle, and Ratnapura

Landslide hazard zonation maps at 1:50,000 scale covering the districts of Matara, Hambantota, Galle, Kalutara and Badulla

Landslide hazard zonation maps at 1:10,000 scale covering the landslide prone DS divisions in the above districts

Detailed landslide hazard, vulnerability and risk maps for selected urban areas in the mountainous region at suitable scales

Budget:

Phase I (2006-2007)

SRL 157 million (USD 1.57 mi)

Phase II (2008-2010)

SRL 89 million (USD 0.89 mi)

Phase III (2011-2015)

SRL 149 million (USD 1.49 mi)

Total Budget

SRL 395 million (USD 3.95 mi)

Funding status:

Local and Foreign Funding Required

Contact persons in lead and participating agencies:

NBRO

Head, Landslide Studies and Services Division

National Building Research Organisation, 99/1 Jawatta Road, Colombo 05

Tele: (011) 2588946 ext 216 Fax: (011) 2502611 email: nbro@sltnet.lk

HVR 2

Establishment of DRM Information System at DMC

Agencies involved:

Disaster Management Centre (DMC)

Background and rationale:

In the proposed multi-stakeholder, multi-sectoral and multi-level DRM activities by DMC and by all stakeholder agencies an immense amount of information and its systematic management will be required. For fulfilling this, a GIS based DRM Information System is required at DMC.

In this context establish a GIS unit in DMC for GIS and remote sensing; managing DMC web portal; managing spatial and non-spatial databases; managing risk information systems hardware/equipments at DMC; coordinating with other agencies for risk information and other needed activities.

Objective:

To establish a GIS based DRM Information System at DMC for the benefit of all stakeholders associated in DRM

Time frame (start date and period):

Year 1-2 (2006-2007) - Short term

Year 3 - 5 (2008-2010) - Medium term

Geographical area of implementation:

DMC with networking to other national and sub-national agencies

Activities:

Short term:

- a. Set up committee to propose the system for establishing the GIS unit in DMC with core functions of GIS and remote sensing; managing DMC web portal; managing spatial and non-spatial databases; managing risk information systems hardware/equipments at DMC & National Emergency Operations Centre (NEOC); Coordination with other agencies for risk information
- b. Establishment of above

- c. Integrate all information systems to build a comprehensive “Risk Information Management System” for the country
- d. Establish system to collect data regularly and update the information system from the relevant national and sub-national agencies in pre-prepared formats through e-mail, web or other appropriate system

Medium term:

- e. Development of spatial database for LAs in relation to general aspects such as administrative boundaries, population, human settlements etc
- f. Integration for hazard zonation maps into spatial database
- g. Establish system to collect data regularly and update the information system from the relevant national and sub-national agencies in pre-prepared formats through e-mail, web or other appropriate system
- h. Making data available on line

Output:

GIS based risk information system established at DMC

Budget:

Year 1-2 (2006-2007)	- SRL 40 million (USD 0.40 mi)
Year 3 - 5 (2008-2010)	- SRL 10 million (USD 0.10 mi)
Total Budget	- SRL 50 million (USD 0.50 mi)

Funding status:

Local or International Funding Required

Contact persons in lead and participating agencies:

DMC

Director General,

Disaster Management Centre

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HVR-3

Flood Risk Assessment

Agencies involved:

Irrigation Department; Mahaweli Authority of Sri Lanka (MASL)

Background and rationale:

Flood hazard maps are not available at present for major rivers in Sri Lanka such as Nilwala, Gin, Kelani, Mahaweli, Kalu, Walawe, Bentara. These are extremely important, especially in the present context, when DRM initiatives are to be carried out in a systematic manner.

Objectives:

- Flood simulation models for major river basins (Kelani, Kalu, Gin, Nilwala, Mahaweli, etc.) made available as a decision making tool
- Development of flood inundation maps at scale 1:10 000 (for LG areas frequently affected by flooding)
- Identification of highly flood prone basins, Districts & Divisions

Time Frame:

Year 1-2 (2006-2007) - Short term - Kelani, Kalu

Year 3-5 (2008-2010) - Medium term- Gin, Nilwala, Mahaweli

Year 6-10 (2011-2015) - Long term - Walawe, Bentara

Geographical area of implementation:

Different parts of Sri Lanka affected by floods.

Activities:

- a. Development of Digital Elevation Models (DEM) including data collection
- b. Rainfall data analysis
- c. Development of appropriate simulation models
- d. Enhancement of prediction and EW capacity including
 - Identify critical locations and install river flow gauges in critical upstream stretches
 - Observation, collection and analyses of hydrological data
 - Recording and maintenance of flood levels in river basins
- e. Collection of field data on historical events such as the May 2003 floods

- f. Digitisation of topographic data of DEM
- g. Development of GIS maps for most vulnerable LAs
- h. Assess the performance of existing flood protection works for improvements

Output:

Flood hazard maps (digitised and hard copies) in Nilwala, Gin, Kelani and Mahaweli rivers

Flood hazard maps for Kalu and other river basins

Budget:

Year 1-2 (2006-2007)	-	SRL 105 million (1.05 mi USD)
Year 3-5 (2008-2010)	-	SRL 130 million (1.30 mi USD)
Year 6-10 (2011-2015)	-	SRL 120 million (1.20 mi USD)
Total Budget	-	SRL 355 million (3.55 mi USD)

Funding status:

Required local or international funds

Contact persons in lead and participating agencies:

Irrigation Department

Director General, Department of Irrigation

Tel: 011-2584984 Email: id_dgi@solaris.gov.lk

Mahaweli Authority of Sri Lanka

011-2580816

011-2505675

HVR-4

Coastal Vulnerability Assessment and Risk Analysis

Agencies involved:

Coast Conservation Department, NARA, Department of Survey, UDA, Department of Census & Statistics, DoM, GSMB, NHDA

Background and rationale:

Tsunami inundation maps of coastal areas must be carried out in order to conduct vulnerability and risk analysis of these areas. The need prevails to evaluate the coastal belt through ocean topography when taking implementation policies regarding the reconstruction and re-housing efforts.

Tsunami hazard zonation maps and coastal erosion maps in the coastal areas at the scale of 1:10,000 will be useful as a decision making tool to increase coastal protection and to advance shoreline management practices.

Risk analysis and mapping are proposed to be undertaken by the Coast Conservation Department, which needs support by way of equipment and personnel. This may be undertaken in partnership with University of Moratuwa in collaboration with an experienced international relevant institute.

Objectives:

- a. To develop tsunami & sea level rise hazard zonation maps and coastal erosion maps at the scale of 1:10,000 for use as decision making tools to increase coastal protection and to improve shoreline management practices (short term)
- b. To develop physical and socio-economic maps in tsunami vulnerable area (long term)

Time frame:

- Year 1-2 (2006-2007) - Short-term comprising activities a, b & e
Year 6-10 (2011-2015) - Long-Term comprising activities c & d

Geographical Area of implementation:

Coastal belt of Sri Lanka

Activities:

Year 1-2 (2006-2007)

- a. Developing tsunami hazard zonation maps (inundation maps: collecting field data and use of models in the process)

- b. Developing coastal erosion maps for coastal areas at the scale of 1:10,000 (Digitisation of topographic data and development of GIS maps)
- c. Strengthening CCD to take up the above activities with greater responsibilities for risk assessment in vulnerable areas

Year 6-10 (2011-2015)

- d. Identifying urban coastal and other communities vulnerable to tsunami events
- e. Monitoring and assessment of physical ecological and socio-economic status of marine and coastal habitats /resources susceptible to coastal and marine hazards

Output:

- Tsunami hazard and coastal erosion maps for coastal belt (Short term)
- Physical and socio-economic maps in tsunami vulnerable area (Long term)

Budget:

For Pilot Project proposed in the Roadmap:

Year 1-2 (2006-2007)	SRL 30 mi (USD 0.30 mi)
Year 3-5 (2008-2010) -	-
Year 6-10 (2011-2015)	SRL 20 mi (USD 0.20 mi)
Total Budget	- SRL 50 mi (USD 0.50 mi)

For Total Project Proposal as proposed by CCD:

Year 1-2 (2006-2007) -	SRL 300 mi (USD 3.0 mi)
Year 3-5 (2008-2010) -	-
Year 6-10 (2011-2015) -	SRL 200 mi (USD 2.0 mi)
Total Budget	- SRL 500 mi (USD 5.0 mi)

Funding status:

Funding required - Local funding/International Funding

Contact persons in lead and participating agencies

CCD,

Director, Coast Conservation Department. Tel: 2449197, radbsamaranayake@fisheries.gov.lk

Participating Agencies:

Short term : Department of Survey: Addl. Surveyor General
Tel: 2508038, 2369586

NARA: Head, Marine Biological Resource Division
Tel: 2521914 E-mail: champa@nara.ac.lk

Long term (For physical and socio-economic maps): UDA, Department of Census & Statistics, Department of Meteorology, NARA, GSMB, NHDA

HVR-5

Development of Drought Prone Area Maps of LGA

Agencies involved:

DoM, DoA, Department of Survey, ID, Agrarian Services Department, MASL

Background and Rationale:

Drought is the most significant hazard in Sri Lanka in terms of people affected and relief provided. South-eastern district of Hambantota and the North-western region of Mannar and Puttalam are most prone. The drought tendency is markedly less in the South-west of Sri Lanka where there is heavy rainfall.

Regionally significant droughts occur once in about every 3-4 years and a severe drought occurs once in about 10 years. The main causes of drought are low rainfall, deforestation, improper land use and unplanned cultivation. A severe drought occurred in 7 districts of the country in 2001 namely, Hambantota, Moneragala, Kurunegala, Puttalam, Rathnapura, Badulla and Ampara.

If drought maps are available in drought prone LA areas they can be used as a decision making tool.

Objective:

To make available the drought prone area maps as a decision making tool.

Time frame of implementation:

Year 1-2 (2008-2010)- Short term

Year 3-5 (2008-2010)- Medium term

Geographical area of implementation:

Selected districts in North-western, Northern, Eastern and Southern Provinces

Activities:

Year 1-2 (2006-2007)

- a. Analyse historical records of rainfall, surface runoff data, land use patterns, soil types, population density, water use patterns
- b. Review classification of drought prone areas

Year 3-5 (2008-2010)

- c. Map areas prone to droughts and identify drought prone districts and divisions
- d. Assess the risk of possible impacts
- e. Develop GIS maps

Output:

- Micro-climatic maps (Medium term)
- Drought vulnerability maps (Medium and long term)

Budget:

Year 1-2 (2006-2007)	-	SRL 10 million (USD 0.10 mi)
Year 3-5 (2008-2010)	-	SRL 10 million (USD 0.10 mi)
Total Budget	-	SRL 20 million (USD 0.20 mi)

Funding status:

Funding required; Local or International

Contact persons at lead and participating agencies:**DoM**

Director General, Department of Meteorology

Tel: +94-11-2694104 E-mail: meteo@slt.lk

Participating Agencies:

Department of Agriculture

Director General

Tel: 081-2386323, 081-2386484

Irrigation Department:

Director General of Irrigation

011-2584984, id_dgi@solaris.gov.lk

Survey Department: Surveyor General, Tel: 2508038, 2369586

Mahaweli Authority of Sri Lanka: Director General

Relevant Provincial Agrarian Services Departments

HVR-6**Dam Safety and Risk Assessment****Agencies involved:**

Irrigation Department, MASL, CEB, NWS&DB

Background and rationale:

Out of 351 major/medium dams in Sri Lanka, 80 are categorised as “large dams” according to international conventions. Compared to other man-made structures, dams have an inherently high risk for failures that may occur due to natural events and/or human errors. Older dam structures and related problems complicate the situation further. A Portfolio Risk Assessment study carried out in 2003/2004 revealed that even some of the modern dams are showing signs of aging (such as seepage, leakage, cracking and scouring).

Procedures for safe operation of flood gates too need to be updated for current downstream conditions. Even during normal flood events there may be loss of life and property when radial gates are opened for the flood water to pass downstream. For reservoir downstream flood monitoring and management, coordination between major dam owners is essential. An Action Plan for different dam breach situations is required for each dam. There should be continuous dialogue between district secretaries, LAs etc. of downstream areas for early warning and to facilitate rapid evacuation. A flood preparedness plan needs to be developed for downstream of each reservoir.

Despite the continued efforts by all dam managers to improve O&M practices, limited resources available for management of these dams are likely to result in further deterioration of this situation and increase in risk levels. Therefore it is proposed to conduct hazard, vulnerability and risk assessment studies that will prioritise the remedial measures, modifications or strengthening proposals w.r.t. dams.

Objectives:

- To conduct portfolio risk assessment studies for high risk dams and prioritise strengthening measures
- To develop flood inundation maps for downstream areas of main dams for identification of areas vulnerable to dam break and sudden discharge from reservoirs

Time frame:

Year 1-2 (2006-2007) - Short term - For 30 identified high risk dams

Year 3-5 (2008-2010) - Medium term- For all other dams

Year 6-10 (2011-2015) - Long term - Re-assessment and continuing safety measures

Geographical area of implementation:

Different regions of Sri Lanka where dams are located

Activities:

- a. Identification of critical reservoirs that may have high impact due to sudden discharge.
- b. Failure mode analysis and Dam Break Modelling
- c. Survey of the river and the flood plain (preferably LIDAR survey)
- d. Development of inundation maps
- e. Portfolio risk assessment and physical improvements

Output:

Contour maps and flood inundation maps for dam break and rapid flood-discharge for

- a. 30 identified high risk dams (Short term); all other dams (Medium term)
- b. Portfolio risk assessment of all the dams
- c. Prioritised list of remedial measures
- d. Plans and estimates for the improvements

Budget:

Year 1-2 (2006-2007)	SRL 650 million (USD 6.50 mi)
Year 3-5 (2008-2010)	SRL 650 million (USD 6.50 mi)
Year 6-10 (2011-2015)	SRL 200 million (USD 2.0 mi)
Total Budget	SRL 1500 million (USD 15.0 mi)

Funding status:

Funding required; Local and International Funds

Contact persons in lead and participating agencies:**Irrigation Department:**

Director General of Irrigation
011-2584984, id_dgi@solaris.gov.lk

Ceylon Electricity Board

Additional General Manager
Tel: 0777-380166 Fax 2543267

Mahaweli Authority of Sri Lanka

Head/Dam Safety Management Centre
011-2580816 011-2505675 damsafety@sltnet.lk

National Water Supply and Drainage Board

Additional GM, Regional Operations
rororo@sltnet.lk , Fax 2635996

HVR-7

Vulnerability and Risk Assessment for LAs

Agencies involved:

DMC, Department of Survey, UDA, NPPD, and all DM line agencies

Background and rationale:

At present the country does not have a system of considering the hazard vulnerability and risk in the process of preparing development plans, issuing development approvals etc. by the LAs. In future, integration of DRR in development activities at the local level will be made mandatory as per the provisions of the DM Act. The UDA, being the main agency responsible for planning and development in urban areas in the country, will have to ensure that this process is implemented properly. Similarly NPPD will be responsible for monitoring the process in regions not declared as urban areas.

It will be necessary to have guidelines for vulnerability and risk assessment for LAs to be used by LA planners / officials, as well as the UDA and NPPD planners. It is also proposed to prepare inundation maps for selected 2003 disaster affected and tsunami affected LAs initially and other LAs subsequently.

Objective:

To draw up guidelines for classification, assessment and mapping of physical vulnerability and risk levels available as a tool for use by urban and town planners in the country and to create awareness among them in using the said guideline

To prepare inundation maps for selected 2003 disaster affected and tsunami affected LA areas

To prepare inundation maps for other LAs

Time frame:

Year 1-2 (2006-2007) Short-term

Year 3-5 (2008-2010) Medium-term

Geographical area of implementation:

High risk districts of the entire country

Activities:

Constituting a committee of experts to refine classification of physical vulnerability and risk assessment in the Sri Lankan context
 Developing guidelines for use in high risk Districts, Division and Urban LAs
 Monitoring by DMC
 Awareness creation about the guidelines among LA planners / officials

Output:

Guidelines for assessment of physical vulnerability and risk in LA areas
 Inundation maps for selected LA areas

Budget:

Year 1-2 (2006-2007)	SRL 5 million (USD 0.05 mi)
Year 3-5 (2008-2010)	SRL 5 million (USD 0.05 mi)
Total Budget	SRL 10 million (USD 0.10 mi)

Funding status:

Funding required; Local or International

Contact person in lead and participating agencies:**DMC**

Director General, Disaster Management Centre

Tel: 011-2441570/73 Fax: 011-2441571

Email: dmcsl@sltnet.lk dgdmcsl@gmail.com

Participating Agencies:

Department of Survey, UDA, NPPD, all DM line agencies

HVR-8

Vulnerability Atlas

Agencies involved:

DMC, Department of Survey, UDA, NPPD, all DM Stakeholder Agencies, Department of Census and Statistics

Background and rationale:

For urban as well as development planning a vulnerability atlas for Sri Lanka is a very useful tool. This is particularly important as integrating DRR in development is a major component in the total DRM process. In Sri Lanka, information is also not available on prevalent hazards and vulnerabilities for different areas. In this context, a compendium of maps related to settlements, population density, land use patterns of LA areas etc. would be a very useful tool for everybody involved in DRM activities, especially urban planners.

A vulnerability atlas consolidated with line zonation maps on most frequent hazards and historical records on impacts, identification and rating of districts and divisions on multi-hazard risk scale will be invaluable for the country.

Objective:

To make information on spatial distribution of various type of natural hazards and vulnerable areas available as a compendium for use as a decision making tool for preparedness and mitigation programmes

Time frame:

Year 1-2 (2006-2007) - Short term

Year 3-5 (2008-2010) - Medium term

Geographical area of implementation:

The entire country

Activities:

- a. Compilation of maps related to settlements, population density, land use patterns of LA areas etc
- b. Consolidate with line zonation maps on most frequent hazards and historical records on impacts.
- c. Identification and rating of districts and divisions on multi-hazard risk scale
- d. Compilation of Vulnerability Atlas for Sri Lanka and update every 10 years.
- e. Preparation of a detailed historical referral data base on disasters

Output:

Vulnerability Atlas for Sri Lanka at the scale of 1:50,000

Budget:

Year 1-2 (2006-2007) - SRL 10 million (USD 0.10 mi)

Year 3-5 (2008-2010) - SRL 10 million (USD 0.10 mi)

Total Budget - SRL 20 million (USD 0.20 mi)

Funding status:

Required; Local or International Funds

Contact persons in lead and participating agencies:

DMC

Director General, Disaster Management Centre

Tel: 011-2441570/73

Fax: 011-2441571

Email: dmcs1@sltnet.lk

dgdmcsl@gmail.com

Participating Agencies:

Department of Survey, UDA, NPPD, all DM Stakeholder Agencies, Department of Census and Statistics

HVR-9

Development of Wind Zoning and Storm Surge Maps

Agencies involved:

CCD, DoM, NARA, Department of Survey

Background and rationale:

Major parts of North-Eastern province experience cyclones and high winds. These areas were severely affected by the 1978 cyclone during which the wind speed may have varied from 100 to 150 mph. During recent years heavy winds and tornados were experienced in many areas of the country. After the cyclone, with UNDP funding technical assistance was provided for the local professionals to map the cyclone affected areas and develop the following documents in 1979:

- a. Design Manual for cyclone prone areas
- b. Report of the committee on Design, Construction and Regulations for Buildings in the Cyclone Prone Areas of Sri Lanka Sessional Paper III
- c. Reports
 - Cyclone Study Overview
 - The cyclone prone areas of Sri Lanka
 - Physical Planning Guidelines
 - The reconstruction of damaged buildings
 - Building design policy and cyclone resistance
 - Cyclone resistant masonry construction
 - Strengthened Wattle and Daub
 - Sri Lanka cyclone hand out

After 26 years, it is appropriate that these outputs developed in 1979 be viewed and revised as necessary, and also be used to develop storm surge maps of the coastal areas.

Objective:

To develop zoning maps for areas prone to cyclone and storm surge made available as a decision making tool

Time frame:

Year 1-2 (2006-2007) Short-term

Year 3-5 (2008-2010) Medium-term

Geographical area of implementation:

North-eastern provinces and coastal areas of Sri Lanka

Activities:

Year 1-2 (2006-2007)

Review of cyclone wind zoning maps developed after 1978 cyclone publication of wind zonation & storm surge inundation maps (Technical Assistance required)

Year 3-5 (2008-2010)

Update the wind zoning maps as necessary and develop storm surge maps

Output:

Wind zoning and storm surge mapping

Budget:

Year 1-2 (2006-2007) - SRL 20 mi (0.20 mi USD)

Year 3-5 (2008-2010) - SRL 20 mi (0.20 mi USD)

Total Budget - SRL 40 mi (0.40 mi USD)

Funding status:

Funding required; Local or International

Contact persons in lead and participating agencies:**CCD**

Director, Coast Conservation Department

Tel: 2449197, Email: radbsamaranayake@fisheries.gov.lk

Participating Agencies:

Director General, Department of Meteorology

Tel: 2694104 E-mail: meteo@slt.lk

Director General, NARA

Tel: 2521932 E-mail: champa@nara.ac.lk

Addl. Surveyor General,

Department of Survey

Tel: 2508038, 2369586

HVR-10

Seismic Zonation Maps

Agencies involved:

Geological Survey and Mines Bureau (GSMB)

Background and rationale:

In Sri Lanka, GSMB is the focal agency for earthquake related activities. There are only two seismometer facilities available in Sri Lanka, one at Pallekelle which belongs to the GSMB and the other at the University of Peradeniya. The one at Pallekelle is one of the automatic (unmanned) stations of the global seismic network maintained by the University of California, San Diego. When an earthquake occurs, the information received by this station is processed together with data obtained from other stations (at least three elsewhere in the world) by the US scientists. The resulting information about the magnitude and location of the earthquake is fed into the USGS (United States Geological Survey) web-site.

On comparing the present-day plate boundaries with a world seismicity map it may be observed that Sri Lanka lies in the middle of the Indo-Australian plate away from the very high seismic zones, and thus is safe from disastrous earthquakes. However, geo-scientists believe that a new plate boundary has been developing in the Indian Ocean south of Sri Lanka during the last 8 million years. Some less intense earthquakes and minor tremors felt in Sri Lanka may have their origins in this newly developing seismic zone.

Keeping this in mind, there is a need to make available to all stakeholder institutions accurate information on seismic zones and the hazard potential. In the present context of rapid development there is a need for earthquake resistant designs in construction as well as for seismic zonation maps of the entire country. Installation of seismic stations and capacity development including technology and human resource development, are also required.

Objective:

To have accurate information on seismic zones and hazard potential made available to all stakeholder institutions (especially the construction industry)

Time frame:

Year 1-2 (2006-2007) - Short term

Year 3-5 (2008-2010) - Medium term

Geographical area of implementation:

The entire country

Activities:

Year 1-2 (2006-2007)

Enhancement of the present seismic monitoring and data capturing capacity to International standards and establishment of a seismic monitoring unit at GSMB.

Year 3-5 (2008-2010)

Development of seismic zonation maps. Technical assistance as well as funding required.

Output:

- Seismic stations established as required
- Seismic zonation maps developed for the entire country

Budget:

Year 1-2 (2006-2007) - SRL 10 mi (0.10 mi USD)

Year 3-5 (2008-2010) - SRL 5 mi (0.05 mi USD)

Total Budget - SRL 15 mi (0.15 mi USD)

Funding status:

Funding required; Local or International

Contact persons in lead and participating agencies:

GSMB

Director, Geological Survey and Mines Bureau

Tel: 011 2725745

E-mail: gsmb@slt.lk

HVR-11**Integrated Epidemic Risk Assessment****Agencies involved:**

Ministry of Healthcare and Nutrition, Provincial Ministries of Health, LGAs, Department of Animal Production and Health, NWS&DB, Department of Agriculture, ID, Department of Agrarian Services, MASL

Background and rationale:

From time to time there may be an outbreak of epidemics in different parts of the country. These may affect not only humans and animals but also the agriculture sector. The social and economic impact of such a situation can be enormous. Prediction, prevention and early control of epidemic can be achieved only through a good surveillance system operating on a routine basis. The system should include methods to receive information immediately to detect an epidemic from any part of the country.

Receiving immediate information on an outbreak in any part of the world that may result in contagion locally too should be covered in the system. Timely action will be required for control measures at the points of immigration and importation.

Routine systematic surveillance methods for the prediction and early detection of epidemics are of paramount importance to prevent the situation from reaching disastrous proportions as well as to take effective control measures.

As the determinants of epidemics are usually multi-sectoral, such a system has to be a multi-stakeholder and multi-level to be effective in predicting, preventing and controlling most epidemics.

Therefore, in addition to strengthening the individual surveillance systems, an integrated epidemic risk assessment system must be established on a selective basis, with greater emphasis on high risk geographical areas for different epidemics and vulnerable populations.

Objectives:

- a. To strengthen the existing disease surveillance systems in health, animal production and agriculture sectors
- b. To establish new surveillance systems for selected diseases with no such systems in operation
- c. To establish an integrated epidemic risk assessment system for selected high risk epidemics where such integration is essential

Time frame:

Year 3-5 (2008-10) - Medium term

Geographical area of implementation:

High risk geographical areas for different epidemics and vulnerable population, but generally covering the whole country

Activities:

- a. Evaluation of existing systems of disease surveillance in different sectors (ie. health, animal production and agriculture) and identification of gaps and areas to be strengthened
- b. Strengthening the weak areas and development of new surveillance systems where necessary on a priority basis
- c. Establish a system to disseminate EW and information on epidemics immediately upon such identification from any part of the country
- d. Establish integrated epidemic risk assessment systems for selected situations where such integration is essential

Output:

Epidemic surveillance systems

Budget:

Year 3-5 (2008-10)	- SRL 2 mi (0.2 mi USD)
Total Budget	- SRL 2 mi (0.2 mi USD)

Funding status:

Funding required; Local or International

Contact persons in lead and participating agencies:

Ministry of Healthcare & Nutrition
 Epidemiologist,
 Epidemiological Unit,
 231, De Saram Place, Colombo 10.
 Tel:2681548, 2695112, Fax: 2696583
 E-mail: chepid@sltnet.lk, epidunit@sltnet.lk

HVR-12

Major Transportation Accidents

Agencies involved:

Department of Police, Road Development Authority (RDA), Railway Department, Transport Board, Central Environment Authority, Urban Development Authority, LAs, Fire Brigades, Health Dept., PCs

Background and rationale:

There is a tendency towards increase in accidents during transport of hazardous materials. With rapid development and launching of large investment projects, more and more materials of different kinds are being transported by road as well as rail. Precautions should be taken to reduce the chance for accidents. Furthermore recommendations may have to be proposed to introduce transport regulations. These may include imposing avoidance of peak hours, selected routes in the cities or highways, using outer circular roads of cities where possible etc. For such recommendations the risk levels and patterns of accidents have to be identified, i.e., in a spatial manner as well as reflecting the time of the day. The type, condition and age of vehicles too matter in such accidents.

Recommendations for improving the situation cannot be proposed or precautions taken without having a reliable database of required information. Therefore it is necessary to develop a database related to transportation accidents, while addressing the priority area of unguarded railway crossings..

Objective:

To develop a database for transport related accidents, and tackle risks of unguarded railway crossings

Time frame :

Year 1-5 (2006-2010) - Short and Medium term

Geographical area of implementation:

The entire country

Activities:

Medium term:

- a. Collection of historical data on rail and road transport and analysis of risk
- b. Identifying the risk levels

- c. Developing the data base, with system for regular updating of the database
- d. Implement railway crossing protection schemes as a priority

Output:

Database related to transportation accidents, protection of prioritised railway crossings

Budget:

Year 1-2 (2006-2007)	-SRL 50 mi (0.50 mi USD)
Year 3-5 (2008-2010)	-SRL 50 mi (0.50 mi USD)
Total Budget	-SRL 100 mi (1.0 mi USD)

Funding status:

Funding required; Local or International

Contact persons in lead and participating agencies:

Police Department,
Road Development Authority,
Railway Department,
Transport Board

Other participating agencies:

Central Environment Authority,
Urban Development Authority,
Local Authorities, Fire Brigades,
Health Dept.,
Provincial Councils

HVR-13**Major Industrial and Occupational Accidents****Agencies involved:**

Department of Labour, Central Environment Authority, National Apprenticeship and Industrial Training Authority, Industrial Development Board, Department of Police, Fire Brigades, PCs, LAs, CEB, CPC, Ministries of Power and Energy, Agriculture, Transport, Industrial Development, Education, Highways, Department of Fisheries and Aquatic Resources, Office of the Commissioner of Workmen's Compensation., Insurance Agencies etc.

Background and rationale:

In Sri Lanka accidents have often been reported in industrial establishments during working hours. With rapid development taking place and large export-oriented investment projects being launched, the tendency for industrial accidents is becoming greater.

Though there are adequate regulations governing working conditions in the country in the race to cope with the various development aspects and competition, there may be a tendency for lapses, resulting in accidents.

Precautions must be taken to reduce such accidents, and furthermore recommendations proposed to avoid or minimise them by introducing new laws, regulations and promotional programmes. Material handling, power activated machinery, workers falling from heights, falling objects, hand operated machinery, treading on unsafe or hazardous materials etc. also cause accidents. Occurrences of accidents at different times of the day and the age of the workers too have an impact. Department of Labour has carried out studies on these based on which risk assessments can be conducted. The type, condition and age of various machineries used in the processes too may have an impact on the increase of such accidents.

For taking precautionary measures, a reliable database related to industrial and occupational accidents must be developed and made available with regular updating ensured. The database must also include an inventory of hazardous materials, industries using such hazardous materials etc. Studies already carried out by the Department of Labour can be taken forward in implementing this activity.

Objective:

To develop a database related to industrial and occupational hazards and hazardous materials

Time frame:

Year 1-3 (2008-2010)- Medium-term

Geographical area of implementation:

The entire country; Hazardous industries and work places

Activities:

- a. Collection of historical data on industrial and occupational accidents and analysis of risk
- b. Identifying the risk levels
- c. Developing the database including an inventory of hazardous materials, industries using such hazardous materials etc.

Output:

Database related to industrial and occupational accidents, and hazardous materials

Budget:

Year 1-3 (2008-2010) - SRL 15 mi (0.15 mi USD)

Total Budget - SRL 15 mi (0.15 mi USD)

Funding status:

Funding required; Local or International

Contact persons in lead and participating agencies:

Department of Labour
Commissioner (Industrial Safety),
Chief Factory Inspecting Engineer, Department of Labour,
255/6, Kirula Road, Colombo 5
Tel: 0112368258 E-mail: wapeterr@yahoo.com

Participating agencies:

Central Environment Authority, National Apprenticeship and Industrial Training Authority, Industrial Development Board, Fire Brigades, Provincial Councils, Local Authorities, Ceylon Electricity Board, Ceylon Petroleum Corporation, Ministries of power and energy, Agriculture, Transport, Industries, Education, Highways, Police Department, Department of Fisheries and Aquatic Resources, Office of the Commissioner of Workmen's Compensation., Insurance Agencies etc.

HVR-14

Terrorism and human made disasters

Agencies involved:

Police and Military Forces, DM line agencies

Background and rationale:

Sri Lanka has adequate past experience on terrorist activities and human-made disasters in the recent and not so recent past. To minimise life loss and damage from such disasters, high risk areas must be identified.

In order to apply precautionary measures, a database on locations highly vulnerable to terrorism and man-made disasters must be developed after identification of high risk areas..

Objective:

To identify high risk areas for application of appropriate measures

Timeframe:

Year 1-2 (2006-07)

Geographical area of implementation:

Entire country, but initially, high risk areas

Activities:

Short term:

- a. Identify high risk areas /locations
- b. Assess hazard impacts on such areas
- c. Develop a database on high vulnerable locations

Output:

A database on locations highly vulnerable to terrorism and man-made disasters developed

Budget:

Year 1-2 (2006-2007) - SRL 10 mi (0.1 mi USD)
Total Budget - SRL 10 mi (0.1 mi USD)

Funding status:

Funding required; Local or International

Contact persons in lead and participating agencies:

Police and Military Forces

HVR-15**Reintegration of Ex-combatants****Agencies involved:**

M/DM&HR, Armed Forces, Ministry of Interior Affairs

Background and Rationale:

The reintegration of ex-combatants is a vital step for any country attempting to step out of a conflict situation. Reintegration as a part of a wider demobilization, disarmament and reintegration (DDR) process increases security as a trust building exercise and in reducing the capacities of warring parties to go back to war at the macro level. It also removes a potential source of insecurity given that it aims to deal with a body of people with combat experience who may find themselves unable to find employment and face difficulties in being accepted by their communities, so may be vulnerable to joining criminal and armed groups. Reintegration is one measure in a larger process of development to ensure that socio-economic conditions are improved and can buttress a political transition. Thus, reintegration is a vital step for progress in any peace process and for addressing critical post-conflict problems like unemployment, crime, spoiler violence etc.

In Sri Lanka a comprehensive process of DDR will be dependent on the negotiation of a final peace agreement. Currently there are a large number of ex-combatants in those who previously served in the armed forces and have retired. In addition there are approximately 60,000 deserters a majority of whom have refused to accept the Government's offer of amnesty in exchange for a return to service while a number have agreed to be re-listed. There are reports that some of these deserters are involved in and responsible for the increased levels of crime and violence, hence this is an area which requires urgent attention. Their inclusion into a reintegration program and recognition as ex-combatants need to be clarified by the relevant authorities.

Those who have left the armed services have tried to reintegrate back into society on their own, and received assistance from the state to do so. In this process of reintegration, ex-combatants have encountered a number of difficulties, be they economic, social or psychological. Other states in conflict have engaged in processes of reintegration preceding a peace process, either as a part of professionalizing the armed forces or as a response to a de facto situation of a large body of demobilized (whether by the state or self-demobilized) combatants. Such processes are also beneficial in that they address a key problem and serve as important learning process for a more comprehensive DDR process that is expected to be a part of a final peace agreement.

There is a clear need for an initial reintegration program that can facilitate and monitor the transition of ex-combatants as productive and integrated members of their communities. While

recognizing the differences between these two bodies of ex-combatants they may share some of the same socio-economic problems so including both groups within a reintegration program would have an added advantage.

The caveat is that any comprehensive reintegration programme can be only done within the contours of a peace agreement between the protagonists, however the Ceasefire agreement gives the space to conduct the necessary ground work, which would become the basis for a reintegration strategy at a latter point. A critical first step in a reintegration process should be a base line study that provides a better understanding for policy makers and service providers how well ex-combatants have integrated into society. A study is required, given the lacuna in the knowledge regarding ex-combatants and how they have fared. This study will identify existing problems and best practices, and also document the experiences of ex-combatants in their efforts to reintegrate including such experiences in other countries. These can feed into the design of a reintegration program when the time is right so as to ensure a more viable program and a more sustainable process.

Objective:

Design and create the preliminary analysis and baseline studies needed to develop a reintegration program for ex-combatants.

Time frame for implementation:

Year 1-2 (2006-2007) – Short Term

Geographical area of implementation:

The Entire Country; including the North East where applicable

Activities:

The methodology of the study involves interviews with ex-combatants and other key informants, in order to understand three interdependent dimensions of reintegration; social, economic and psycho-social. Some of the key areas for examination include:

- Assessing factors which facilitate or hinder the process of reintegration
- Assessing the type of intervention, mechanisms and schemes required to address the problems of ex-combatants
- Assessing what reintegration means to ex-combatants and the community
- Assessing the role of the state in facilitating this process
- Assessing the role of other critical institutions, including those within the community, in facilitating the process
- Assessing how vulnerable groups (handicapped, aged, women) have fared

- Assessing the relationship between the combatants and their communities
- Assessing psycho-social issues faced by ex-combatants
- Assessing the opportunities for development in the ‘host community’

Interviewees will be randomly selected from a lists supplied by the armed forces and other relevant state authorities. Some of the primary tools for carrying out the study include questionnaire-based interviews with the ex-combatants, focus group discussions with community leaders, interviews with key informants (particularly armed force personnel, ministry officials etc.) secondary research etc.

Outputs

- Collating the data needed to develop a reintegration program for the current caseload.
- Act as a vital tool for a future, comprehensive DDR process.
- Facilitate and strengthen networks between key institutions such as the Ministry of DM&HR, the armed forces, local communities etc.

Budget:

- | | |
|---------------------|----------------------------------|
| Year 1 (2006-2007) | - SLR 12 mi (USD 0.12 mi) |
| Total Budget | - SLR 12 mi (USD 0.12 mi) |

Funding status:

New Funding Required - Local / International Funding

Contact person in lead and participating agencies:

M/DM&HR - Secretary
Armed Forces, Ministry of Interior Affairs

Chapter 4

Tsunami and Multi-hazard Early Warning System

4.1 Key Issues

The primary objective of a multi-hazard Early Warning System (EWS) is to generate advance warnings and thus improve the capacity of decision-makers to take appropriate action even prior to the occurrence of a major hazard event. It consists of the collection, consolidation, analysis and dissemination of risk information. Setting up an effective multi-hazard EW system requires concerted planning, organising and controlling of relevant information. It also requires influencing all concerned stakeholders to ensure that information is disseminated to the right decision-makers and vulnerable communities, at the right time.

Current efforts at institutionalisation of EW systems have come as a response to the impacts of the recent tsunami disaster in 2004. The proposed tsunami EW arrangements must be integrated into existing warning systems to promote a multi-hazard approach to make the system sustainable. Although there are various ongoing efforts to develop tsunami EW capacities, but only few to improve existing capacities for other more frequent hazards. The multi-hazard EW system needs to be end-to-end, linking hazard detection systems with warning communication, with a feedback mechanism that allows post-event assessments.

Also, it is important to note that agencies in Sri Lanka are organised according to specialised tasks for different hazards, without much information sharing or partnerships with other agencies. It is these gaps that the DMC's EW division seeks to address by bringing together all concerned agencies. Another key issue that needs to be addressed is the lack of communication lines and especially their unavailability during times of emergency communication.

4.2 Strategy

The strategy is to focus on hazards that frequent Sri Lanka the most, like floods, landslides, cyclones, and droughts, while also providing for measures to tackle a low-frequency but high impact hazard like

the 2004 tsunami. It follows that the coastal areas, which are vulnerable to not just a tsunami, but also cyclones, storm surges, and floods would be the priority geographical areas. The floods affecting many of these coastal areas are caused by seasonal rainfall, and an improvement in meteorological observation and prediction capabilities will enable an efficient EW system for not just these annual floods but also cyclones and lightning strikes. This coupled with landslide prediction will enable timely warnings to communities at risk across 10 districts of Sri Lanka.

There is consensus amongst relevant departments responsible for detection and EW that particular hazards should be the responsibility of one and only one institution, to avoid overlaps in mandates and appropriate actions. The dedicated units or sections established in relevant institutions would be the sole authority for generation of warnings as needed. This warning would be communicated through the NEWC and all the existing communication channels within the government's administrative set up, in addition to the three major channels of communication already being used for mass dissemination: popular media, such as television, newspapers, radio etc; the Wireless Communication system of the Police; and military communication channels of the Joint Operation Command. Also, the relevant agencies could explore the option of communication networks of SLRCS in particular and NGOs in general, to help multiply the reach of these warnings to the communities at risk. This warning dissemination activity will be covered by projects formulated under the 'Public Awareness, Training and Education' component.

The following programmes have been prioritised to consolidate multi-hazard EW systems across various agencies in Sri Lanka:

i. Establishment of the National EW Centre (NEWC) of Sri Lanka

Sri Lanka as part of the Regional Tsunami EWS is required to maintain an EW centre. There will be two centres, viz., a Tsunami Early Warning Centre and a Multi-hazard Early Warning Centre in the proposed DMC building as detailed in proposal P-6 in Chapter 2, at the premises of the Department of Meteorology at Baudhaloka Mawatha, Colombo.

At present, issues with regard to weather-related natural disasters are handled by the Meteorology Department while those related to seismological and ocean wave activities are handled by GSMB and National Aquatic Resources Research and Development Agency (NARA) respectively. Similarly different institutions handle issues with regard to other disasters such as floods, landslides etc. A good networking facility connecting all the relevant institutions is vital for proper coordination during disasters. The Government of Sri Lanka has identified the need to establish a multi-hazard EW centre as a matter of urgency. This centre has to be equipped with state-of-the-art facilities to be able to communicate directly with international as well as national agencies during emergencies.

ii. Improvement in Meteorological Observation and Prediction Capabilities

At present, it is necessary to install a number of automatic weather stations at crucial

locations in Sri Lanka and connect them to a central hub at the departmental head office in Colombo. A proper all-weather communication system should be developed to link these stations. In addition, data processing, display and archival systems are to be installed at the National Meteorological Centre of the Department to keep real time track of the weather situation in the country.

iii. Flood Monitoring and Forecasting

In parallel to the improvements in meteorological observation capacities, the existing hydrometric network for flood monitoring and forecasting needs enhancement to provide an effective flood EW mechanism.

iv. Improvement of Landslide Prediction and EW Capabilities

The proposal is to develop a mechanism for establishing threshold limits for landslide occurrence and development of landslide EW systems based on the criteria for high risk areas. Such mechanisms have to be established for the benefit of at-risk communities with their active involvement. This EW mechanism should be introduced as a real time forecasting system in most areas vulnerable to landslides and mass (soil) movements.

v. Development of Effective Cyclone Tracking, Storm Surge and Coastal Flood Warning System

It is proposed to implement a storm surge model and develop a coastal flood warning system for the entire coastal belt of Sri Lanka. More cooperation is required among countries in the region with regard to the tracking of tropical cyclones and other low-pressure weather systems that develop in the Bay of Bengal.

vi. Development of Long and Medium Term Drought Forecasting and Monitoring System for Agriculture and Associated Sectors

Though the agricultural sector is the most vulnerable to frequent droughts in Sri Lanka, adequate attention has not been given to rainfall monitoring in drought prone areas, drought forecasting and EW. In order to launch an effective drought-preparedness programme, the existing agrometeorological observation network has to be upgraded along with communication facilities to transfer real time data to the central station. A crop-weather watch group should be formed in order to interpret the information received from field and other line agencies. As crop-weather relationships are currently being handled by different divisions, it is imperative to bring them together to ensure effective and useful information generation and dissemination.

vii. Development of a Unified Seismic Monitoring, Data Processing and Archival Network

As a matter of urgency, it is necessary to develop and strengthen the capabilities of the GSMB to enable them to locate earthquake risks at the earliest. GSMB will need to connect this network to the proposed Central Data Processing and Archiving Unit (CDPA). Due to lack of necessary expertise and software at the GSMB, seismic data acquired by existing stations has not yet been

processed and interpreted locally. A micro-seismic monitoring network to observe reservoir-induced seismicity was operational for the dams built on Mahaveli river during 1982-1991. However, monitored was restricted to some settlement tremors along the Mahaweli Shear Zone.

viii. Development of Oceanographic Monitoring System

The local coastal topography, oceanography and marine meteorology are critical parameters determining the magnitude and the period of high-frequency ocean waves like tsunamis or storm surges. Thus, oceanographic/ marine meteorological buoys need to be deployed in order to gather real-time data on local coastal topography, oceanography and marine meteorology. Mapping of sensitive habitats such as coral reefs, mangroves, sea grass, tidal flats, estuaries, etc are vital to generate data for mitigation, preparedness and planning for vulnerable coastline areas in Sri Lanka.

ix. Establishment of EW system for Nuclear Accidents Environmental Radiation Monitoring

Various types of ionising radiation sources are widely used in industrial, medical and agricultural fields and for other research purposes in Sri Lanka. The sources used for different activities range from a few Kilo Becquerel to thousands of Giga Becquerel. The loss or misuse of ionising radiation sources could result in radiation exposure of workers and members of the public and can also lead to environmental contamination. In extreme cases the exposure can be lethal, while lower levels of exposure could lead to long-term adverse effects on a population.

4.3 Project Proposals

The following projects are being selected over the short to medium term due to their relevance to the early warning context in Sri Lanka:

- E-1 Establishment of the National Early Warning Centre (NEWC) of Sri Lanka
- E-2 Improvement of Meteorological Observation and Prediction Capabilities
- E-3 Improvement of Hydrometric Network for Enhancing Flood Monitoring and Forecasting Capabilities
- E-4 Improvement of Landslide Prediction and Early Warning Capabilities
- E-5 Development of Long and Medium Term Drought Forecasting and Monitoring System for Agriculture and Associated Sectors
- E-6 Development of an Effective Cyclone Tracking, Storm Surge Warning System
- E-7 Development of a Unified Seismic Monitoring and Data
- E-8 Early Warning for Hazards Associated with Major Dams
- E-9 Development of Oceanographic Monitoring System
- E-10 Establishment of an EWS for Nuclear Accidents and Monitoring of Environmental Radiation
- E-11 Erecting Tsunami Warning Towers in Selected Coastal Areas

Agencies involved:

Disaster Management Centre, Department of Meteorology,

Background and Rationale:

In Sri Lanka, issues with regard to weather related disasters are handled by the Meteorology Department while issues related to seismological activities and ocean wave related activities are handled by Geological Survey and Mines Bureau and National Aquatic Resources, Research and Development Agency respectively. Similarly different institutions handle issues with regards to different natural disasters. As such, a good networking facility connecting all the relevant institutions is vital for proper coordination during disasters, and the government has identified the need to establish a multi hazard early warning centre as a matter of urgency. EW can only be issued to the public through this Centre, which also has to communicate directly with international as well as related national agencies during emergencies. Therefore, equipping this centre with state-of-the-art communication and other facilities is important.

It is suggested to establish a state-of-the-art Tsunami Early Warning Centre and a Multi-hazard Early Warning Centre in the proposed DMC building as detailed in proposal P-6 in Chapter 2 at the premises of the Department of Meteorology at Baudhaloka Mawatha, Colombo.

Objectives:

To facilitate timely and end-to-end early warning on potential disaster events

Time frame of implementation:

Year 1-2 (2006-2007) - Short-term

Geographical are of implementation:

Nation-wide (Sri Lanka)

Activities:

Year 1-2 (2006-2007)

- a. Establishment of Tsunami Early Warning Centre and a Multi-hazard Early Warning Centre in the proposed DMC building at DoM premises
- b. Improvement of communication and dissemination capacity

- c. Institutionalizing of inter agency arrangements for national early warning
- d. Establishment of coordinating mechanism with agencies within/ outside Sri Lanka

Outputs:

Fully functional and efficient multi-hazard early warning system

Budget:

Year 1-2 (2006-2007) - SLR 50 mi (USD 0.50 mi)

Total Budget - SLR 50 mi (USD 0.50 mi)

Funding status:

Local funding/International Funding; New Funding Required

Contact persons in lead and participating agencies:

Director General, Disaster Management Centre

Director General, Department of Meteorology

E-2**Improvement of Meteorological Observation and Prediction Capabilities****Agencies involved:**

DoM, DMC

Background and rationale :

Being a small island in the Indian Ocean with an annual rainfall of 1860 millimetres, Sri Lanka has, in recent times, faced several natural disasters such as tsunami, floods, droughts and landslides. However, the most common, (over 80 per cent) disasters faced in Sri Lanka are weather related. Though the average rainfall in Sri Lanka is approximately 1860 mm, the range varies between 900 millimetres in the driest (north-western and south-eastern) regions to over 5500 mm in the wettest (western slopes of the hills) regions. Extreme rainfall, of over 400 millimetres (e.g. Deniyaya 730 mm, 18th May 2003) is not very uncommon in the highlands of Sri Lanka.

The responsibility of monitoring weather in Sri Lanka is with DoM which has its headquarters in Baudhaloka Mawatha, Colombo 7. The meteorological observational network maintained by the DoM consists of 20 principal meteorological stations, 4 upper air stations, 42 agro-meteorological stations and approximately 400 rain-gauge stations.

The equipment used at all the above stations of the meteorological network are manual. No automatic weather stations or telemetered rain gauges are available in Sri Lanka. In the principal meteorological stations, observations are performed once every three hours and transmitted to the head office through public telephone lines. The communication system connecting head office and all the stations in the network are public telephone based and at numerous instances data blackouts occur due to communication failure, particularly during times of bad weather.

In order to rectify this situation, it is necessary to install a number of automatic weather stations at crucial locations in Sri Lanka and connect them to a central hub at the departmental head office in Colombo. A proper all-weather communication system should be developed linking these stations. In addition, data processing, display and archival systems should be installed at the National Meteorological Centre of the DoM to keep real time track of the weather situation in Sri Lanka.

Objectives:

To establish/upgrade and modernise the meteorological observation network to enhance meteorological prediction capabilities of the DoM

Time frame of implementation

Year 1-2 (2006-2007) - Short term

Geographical area of implementation:

The Entire Country

Activities:

Year 1-2 (2006-2007)

- a. Selection of suitable locations (approx. 35) for the Automatic Weather Station Network
- b. Selection of a suitable all-weather communication system for data transfer between stations and the central hub
- c. Selection of a data processing and display system
- d. Establishment of the system

Output:

A proper meteorological observation system capable of identifying weather systems in real time thus enhancing the weather prediction capability, particularly during bad weather situations.

Budget:

Year 1-2 (2006-2007)	- SLR 220 million (USD 2.2 mi)
Total Budget	- SLR 220 million (USD 2.2 mi).

Funding status:

International Funding; New Funding Required

Contact persons in lead and participating agencies:

Director General
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E-3

Improvement of Hydrometric Network for Enhancing Flood Monitoring and Forecasting Capabilities

Agencies involved:

Irrigation Department (ID), Ceylon Electricity Board (CEB), Mahaweli Authority of Sri Lanka (MASL), DoM

Background and Rationale :

The main objective of establishing a flood warning system with improved hydrometric network is to predict the expected flood levels along the rivers at strategic locations and downstream of major reservoirs, in order to provide advance warning of a flood disaster to the public.. Five river basins, Kelani, Kalu, Gin, Nilwala and Mahaweli, are vulnerable to floods and monsoon rain and cyclones annually cause damage to thousands of families and property worth millions of rupees.

At present there is a good monitoring system of rainfall, river water levels and discharges by the ID as well as a well-organised flood forecasting system for the Kelani river with an established standing order. There is an organised monitoring system for other river basins but no well established flood forecasting system.

The existing hydrometric network needs to be improved to facilitate the above. The network at present is grossly inadequate, especially in the mountainous areas and technologies involved in data collection, transmission and processing lack the required levels of technical sophistication, operational efficiency and institutional support.

Objectives:

To establish an effective flood warning system, to effectively predict the flood levels along the rivers at strategic locations, in order to provide advance warning to the public for the preparedness for a flood disaster and to minimise the damages caused by the floods

Time frame of implementation

Year 1- 3 (2006-2008) - Short and medium term

Geographical area of implementation:

The Entire Country

Activities:

Year 1-2 (2006-2007)

Improvements to hydrometric network of the country

- establishment of new gauging stations
- upgrading of existing gauging stations
- procurement of new measuring and communication equipment
- establishment of effective communication network to convey data from the field
- upgrading of the data processing unit

Year 3 (2008)

- Improvements to the data processing system and development of a well organised data base system
- Improvement of existing flood forecasting system or development of a suitable flood forecasting model.
- Training for engineering and operational staff in modern hydrological application and instrumentation

Output:

Real time flood forecasting system to mitigate flood hazards comprising

- Well established hydrometric network for the country
- Well organised data base system
- Well established data analysis and forecasting system

Budget:

Year 1-2 (2006-2007)	- SLR 36.5 million (USD 0.365 mi)
1. Improvements to gauging network	SLR 30 mi
2. Establishment of effective communication system	SLR 5.0 mi
3. Improvements to data processing unit	SLR 1.5 mi
Year 3 (2008)	- SLR 50 million (USD 0.50 mi)
1. Establishment of flood forecasting system (Procurement, development of application software)	SLR 30 mi
2. Training	SLR 20 mi
Total Budget	- SLR 86.5 million (USD 0.865 mi)

Funding status:

Funds Not Available; International Funding Required

Contact persons in lead and participating agencies:

Irrigation Department,
Director, Planning Designs and Specialised Services,
Bauddhaloka Mawatha, Colombo 7.

Participating Agencies:
DoM, Director General
Bauddhaloka Mawatha, Colombo 7

E-4**Improvements of Landslide Prediction and Early Warning Capabilities****Agencies involved:**

NBRO, DoM

Background and Rationale :

Nearly 23% of the land area of Sri Lanka spread over the central and adjacent hilly areas are highly prone to landslides. Scientific studies at NBRO have shown that the frequency of landslides is increasing, particularly due to improper human interventions such as haphazard unplanned intensive cultivation, non-engineered constructions, deforestation, and neglect of land.

Deeply concerned with previous disasters caused by landslides, the Government of Sri Lanka with the assistance of UNDP/UNCHS, formulated the Landslide Hazard Zonation Mapping Project (LHMP) in December 1989. Due to its multi disciplinary organisational structure, which matched with the project objectives, NBRO was selected as the implementing agency of LHMP. The UNDP/UNCHS assisted project (later known as Phase I of LHMP), ended in 1995 delivering several landslide hazard zonation maps, at 1: 10,000 scale, covering about 1500 sq.km of Badulla and Nuwara Eliya districts. Later UNDP, UNCHS and the Government of Sri Lanka entered into a tripartite agreement, identifying the importance of landslide hazard zonation mapping and consequently the Government of Sri Lanka singly assisted the extension of LHMP to other landslide prone districts of Kandy, Kegalle, Ratnapura, Kalutara and Matale. Later, after the heavy floods and landslides in 2003 LHMP was extended up to 2007 adding the three districts of Matara, Galle and Hambatota. As a result, NBRO has so far generated landslide hazard zonation maps at 1: 50,000 scale covering Kandy, Kegalle, Ratnapura, Nuwara Eliya, and Matale districts, and at 1: 10,000 scale covering selected areas of the above districts.

The principal objectives of the LHMP at its inception were the preparation of landslide hazard zonation maps and carrying out Awareness Programmes targeting relevant sectors of the community in the hilly region. However, NBRO has now identified the need to introduce real time forecasting of landslides and EWS as a follow-up for effective utilization of the maps in disaster mitigation. Among the reasons for the gaps in the success of the above are the lack of prediction of rainfall and real time precipitation rates.

Objectives:

The objective of this proposal is to formulate a landslide EWS, developed and established for at-risk communities. This should be introduced as a real time forecasting system.

Time frame of implementation

Year 1-10 (2006-2015) - Short, Medium and Long-term: Implementation as a continuous process

Geographical area of implementation:

Landslide prone areas of Badulla, NuwaraEliya, Ratnapura, Kegalle, Kandy, Matale, Kalutara, Galle, Matara and Hambantota districts.

Activities:

Year 1-2 (2006-2007) - Development and Establishment of the Forecasting System

- a. Updating and up-scaling the already prepared landslide hazard zonation maps
- b. Collection of data on soil parameters to be added as an additional layer to hazard maps
- c. Identification and installation of automatic rain gauge station in landslide prone areas
- d. Installation of suitable instrumentation (e.g. Doppler Radar) to measure precipitation rates
- e. Analysis of historical data on rainfall and occurrence of landslides to obtain threshold limits of initiation of landslides
- f. Instrumentation (cost effective and simple instruments) established for communities at risk.
- g. Development of a proper data exchange network system among relevant institutions and communities at risk.
- h. Development of the EWS and dissemination of information up to grass root level
- i. Training and capacity enhancement

Year 3-5 (2008-2010) - Forecasting, Development and Updating by Research

Year 6-10 (2011-2015) - Forecasting, Development and Updating by Research

Output:

Properly established EWS to protect at risk communities and their property from landslide disaster

Budget:

Year 1-2 (2006-2007)	- SLR 8.0 million (USD 0.08 mi)
Year 3-5 (2008-2010)	- SLR 4.5 million (USD 0.045 mi)
Year 6-10 (2011-2015)	- SLR 4.5 million (USD 0.045 mi)
Total Budget	- SLR 17.0 million (USD 0.17 mi)

Funding status:

Local and International Funding; New Funding Required

Contact persons in lead and participating agencies:

Head, Landslide Studies and Services Division

National Building Research Organisation

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E-5**Development of Long and Medium Term Drought Forecasting and Monitoring System for Agriculture and Associated Sectors****Agencies involved:**

Department of Agriculture (DoA), DoM

Background and Rationale :

As a result of significant negative anomalies of seasonal rainfall, Sri Lanka has been subject to recurrent droughts with negative consequences in almost all sectors of the economy. However, Sri Lanka's drought strategy has been oriented more on "relief" rather than preparedness. Drought preparedness promotes a more preventive, risk management approach to droughts reducing vulnerability to drought and dependence on emergency assistance from government and international organisations.

Though agriculture is the most vulnerable sector to droughts in Sri Lanka, adequate attention has not been given to rainfall monitoring in drought prone areas, drought forecasting and EW of consequences such as yield reduction of food crops. In order to launch effective drought preparedness program, existing agro-meteorological observation network has to be up graded along with communication facilities to transfer the real time data to central station. Since present data processing capability of the central station is not adequate, facilities have to be upgraded with direct and communication links to peripheral stations, DOM and other relevant agencies. Negative rainfall anomalies may manifest in crops at varying degrees depending on the crop and geographical location. Thus, a crop-weather watch group should be formed in order to interpret the information received from field and other line agencies. As the crop-weather relationships are currently being handled by different divisions it is imperative to bring them under one roof so that effective and useful information generation and dissemination could be accomplished.

Objectives:

Information on potential events of drought and/or inconsistencies in rainfall made available to agriculture and associated sectors as an advanced decision support mechanism

Time frame of implementation

Year 1-2 (2006-2010) - Short and Medium-term

Geographical area of implementation:

The Entire Country

Activities:

Up-grading of agro-meteorological observation network of the country

Procurement of new equipment

Provision of communication links to each agro-met station with e-mail facilities

Up-grading of agro-meteorology division of the DoA

Procurement of high capacity computers (including for Department of Meteorology)

Dedicated communication link, leased Internet line

Procurement of new vehicle (double-cab)

Establishment of Crop Forecasting Unit at the DoA Headquarters

Building construction (an extension to the existing building)

Procurement of computers, office furniture

Establishment of dedicated communication links (telephone and fax)

Establishment of the database on weather and crop data (four different districts)

Formulation of Crop-Weather Watch Group from relevant agencies; bi-monthly meetings

Publishing a seasonal newsletter

Issuing yield forecast of major food crops one month prior to the end of each growing season

Output:

Establishment of an end-to-end drought forecasting network with

Complete agro-meteorological observation network of the island

Real-time database on agro-meteorology covering the entire country

Database on crops and other related data with seasonal updating

Seasonal newsletter

Yield forecast of major food crops in each growing season with a sufficient lead time

Budget:

Year 1-2 (2006-2007) - SLR 21.28 million (USD 0.212 mi)

Year 3-5 (2008-2010) - SLR 6.80 million (USD 0.068 mi)

Total Budget - SLR 28.08 million (USD 0.280 mi)

Funding status:

Funds Not Available; International Funding Required

Contact persons in lead and participating agencies:

Head/ Agro-meteorology Division
Natural Resource Management Centre
Department of Agriculture, Peradeniya

Participating Agencies:
DoM, Director General
Buddhaloka Mawatha, Colombo 7

E-6**Development of an Effective Cyclone Tracking, Storm Surge Warning System****Agencies involved:**

DoM, Coast Conservation Department

Background and Rationale:

The Sri Lankan coast is frequently affected by coastal flooding due to wind-driven waves. This situation is more frequent in the southern coastal belt during active phases of the southwest monsoon, and the eastern, northern coastal areas when cyclonic storms develop close to the island in the Bay of Bengal or by wind-driven wave activity.

The coastal flooding has aggravated since the tsunami episode of 2004, possibly due to changes that have occurred in the near shore bathymetry. Therefore, a storm surge model must be implemented and a coastal flood warning system developed for the coastal belt of Sri Lanka. For tracking tropical cyclones and other low pressure weather systems in the Bay of Bengal, more regional cooperation is required.

Objectives:

Effective mechanism for cyclone tracking and storm surge, coastal flood warning system to be established to facilitate timely EW

Time frame of implementation

Year 1 - 5 (2006-2010)- Short and Medium term

Geographical area of implementation:

The Entire Country

Activities:

Year 1-2 (2006-2007)

Development of a properly coordinated cyclone tracking mechanism among regional countries through WMO/ESCAP Panel on Tropical Cyclones.

Year 3-5 (2008-2010)

Identification, implementation of suitable models for storm surge, and coastal flood forecasting

Outputs:

Fully functional and efficient cyclone tracking and EWS

Budget:

Year 1-2 (2006-2007)	- SLR 1.0 million (USD 0.01 mi)
Year 3-5 (2008-2010)	- SLR 20 million (USD 0.20 mi)
Total Budget	- SLR 21.0 million (USD 0.21 mi)

Funding status:

Funds are not available; Local / International Funding Required

Contact persons in lead and participating agencies:

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E-7

Development of a Unified Seismic Monitoring and Data Processing and Archival Network

Agencies involved:

GSMB

Background and Rationale :

As a matter of urgency, it is necessary to develop and strengthen capabilities of GSMB leading to locating earthquakes at the earliest possible time. A broad band seismic network station, code name PALK, functions as a joint research project of GSMB and University of California San Diego (UCSD) at Pallekele in the central highlands of Sri Lanka since 2000. This station is equipped with a highly sensitive broadband seismometer with facilities for transmission of near real time data. The purpose of this station is to provide continuous geophysical observations of global and regional earthquake activity. The PALK is linked with the other Global Seismic Network stations via a common gateway, IDA Hub that opens a pathway to study and analyse global seismic events.

Due to lack of necessary expertise and software at the GSMB, seismic data acquired by this station has not been processed and interpreted locally so far. A microseismic monitoring network to monitor reservoir-induced seismicity was operational around the cascade of dams built on Mahaveli river from 1982 to 1991. However, no significant microseismic activity was monitored except for some settlement tremors along the Mahaweli Shear Zone.

With the increase in ground vibrations felt in several parts in the country, expert and public concern has led to resumption of systematic monitoring of microseismic activities. In addition, major earthquakes occurring in the Indian subcontinent in the recent past necessitate establishment of such a monitoring system. Dam safety Experts have identified the need for an effective seismic monitoring network covering 32 dams and appurtenant structures, particularly tunnels, with priority on the Upper Mahaweli and Kelani scheme areas. Establishing an accelerometer network covering 32 dams to determine peak ground acceleration parameters for utilisation of engineering designs and risk assessments has also been emphasized. No seismological study has yet been carried out to gather, process and interpret seismic events, which are felt only in Sri Lanka. These can be studied using local short period seismic network like the University network. Therefore, it is necessary to fix any technical problem pertaining to the malfunction of the existing university network and connect it to the GSMB. Secondly, it is proposed that 6 short period three-component seismographs be added to this network to strengthen the coverage. These 6 new stations have to be installed at suitable locations in Colombo, Jaffna, Mannar and 3 stations in Upper Mahaweli/ Kelani major dam/ reservoir scheme areas thus increasing the total number of local short period seismometers to 10.

The CDPA would have the following requirements:

1. Data processing, archiving facilities requiring software, hardware and trained personnel
2. Direct link with DMC in case of earthquake or tsunami to disseminate news
- 3.. R&D requiring seismologists, geophysicists, geologists and computer scientists

Objectives:

Enhanced seismic monitoring capacity in Sri Lanka to facilitate constant upgrading of seismic zonation, EW and preparedness

Time frame of implementation

2008-2012: Medium and Long-term: 5 years

Geographical area of implementation:

The Entire Country

Activities:

Year 1-3 (2008-2010)

- Networking of seismographic stations (University network, new seismographs of major dams)
- Improvement of broadband seismic network

Year 4-5 (2011-2012)

- Establishment of a seismic data processing and archival unit
- Enhancement of monitoring and data capturing to international standards

Outputs:

Enhanced seismic monitoring capacity in Sri Lanka

Budget:

Year 1-3 (2008-2010) - SLR 75.0 million (USD 0.75 mi)

Year 4-5 (2011-2012) - SLR 187 million (USD 1.87 mi)

Total Budget - SLR 262 million (USD 2.62 mi)

Funding status:

Funds Not Available; International Funding Required

Contact persons in lead and participating agencies:

Director, Geological Survey and Mines Bureau, Galle Road, Colombo 3

E-8**Early Warning for Hazards Associated with Major Dams****Agencies involved:**

ID, MASL, CEB

Background and Rationale :

Dams have an inherently high risk for failures that may lead to potential loss of life and property. Apart from human errors, failures can occur due to natural events. In addition, aging dams and related problems complicate the situation further. The potential threat to life and property should be sufficient to justify the careful monitoring of these dams.

Sri Lanka has over 320 major and medium dams that have been constructed and maintained over the years. Out of these, 80 have been categorised as “large dams” according to international conventions. These dams are operated by MASL, ID and many other government organisations. None of these dams have an adequate EWS.

Coordination between dam operators is needed for effective reservoir downstream flood monitoring and management. Even in normal flood events spill gates will be opened for the release of excess water and there could be disturbance to the downstream. Operation procedures for safe passage of floodgates need to be updated for the current downstream conditions.

Also an action plan for dam breach situation or opening of gates during intense rainfall is required for each dam. To facilitate rapid evacuation in case of an emergency, there should be continuous dialogue with District Secretaries, Divisional Secretaries, GNs, LAs etc. of downstream areas, regarding necessary contact information for EW.

Therefore it is proposed to establish EWS appropriately for each dam or a cluster of dams for dissemination of emergency information among downstream communities, to make evacuation and emergency activities possible.

Objective:

To establish system for providing EW to district secretaries / divisional secretaries, LAs and communities in case of an imminent hazard associated with major dams

Time frame of implementation

Year 3-5 - (2008-2010) - Medium term

Geographical area of implementation:

Different regions of Sri Lanka where selected dams are located

Activities:

- Establishment of Supervisory Control and Data Acquisition (SCADA) system.
- Establishment of EWS for major dams

Output:

Efficient EW and monitoring system in place for major dams

Budget:

Year 1-3 (2008-2010) - SLR 50 million (USD 0.50 mi)

Total Budget - SLR 50 million (USD 0.50 mi)

Funding status:

Funds Not Available; Local / International Funding Required

Contact persons in lead and participating agencies:

Irrigation Department
Director General of Irrigation
011-2584984, id_dgi@solaris.gov.lk

Mahaweli Authority of Sri Lanka
Head/Dam Safety Management Centre
011-2580816 011-2505675 damsafety@slt.net.lk

Ceylon Electricity Board
Additional General Manager
Tel: 0777-380166 Fax 2543267

E-9**Development of Oceanographic Monitoring System****Agencies involved:**

NARA

Background and Rationale :

The local coastal topography, oceanography and marine meteorology are the critical parameters which determine the magnitude and the period of high frequency ocean waves like tsunamis and storm surges. Hence, oceanographic/marine meteorological buoys need to be deployed to gather real time data on local coastal topography, oceanography and marine meteorology. Mapping of sensitive habitat such as coral reefs, mangroves, sea grass, tidal flats, estuaries, etc is vital to generate data\ information for mitigation, preparedness and planning.

NARA established a sea level station at Mutuwal Fishery Harbour, Colombo (western coast) and Trincomalee in collaboration with the University of Hawaii Sea Level Center in August 2004 and November 2005 respectively. There is minute to minute sampling, with data transmission every 15 minutes through the Global Telecommunications System (GTS) of World Meteorological Organisation (WMO) and the Japanese Geostationary Meteorological Satellite system. One more sea level station with real-time data transmission capabilities will be established at Kirinda (southern coast) with assistance from the Federal Maritime and Hydrographic Agency of Germany. The tide stations will provide real-time information on the development of a tsunami following a seismic event, thus guiding the issuance of tsunami warnings as well as cancellation, if the tsunami is non-destructive.

Objectives:

To build national technical capabilities on timely identification and origin of ocean based disasters; to strengthen the capacity for ocean monitoring and timely issuing of data\information to the Disaster Management Centre, relevant agencies, institutes, authorities, etc.

Time frame of implementation

Year 3-10 (2008-2015) - Medium and Long term

Geographical area of implementation:

Colombo, Trincomalee, Kirinda, Jaffna peninsula

Activities:

Year 1-2 (2008-2009)

- a. Installation of real time tide gauges and connecting them to the regional / international network through the Global Sea Level Observing System.
- b. Establishing permanent monitoring stations for sea level, ocean waves, tides, currents
- c. Bathymetric surveys and nautical charting

Year 3-5 (2010-2012)

- d. Establishment of offshore real time oceanographic/marine meteorological buoy
- e. Strengthening of Geographic Information System (GIS) and remote sensing capabilities
- f. Establishment of online database for ocean based disasters
- g. Upgradation of hydrographic survey equipment and cartographic capabilities

Year 6-8 (2013-2015)

- h. Capacity building and maintenance

Output:

Real time data on oceanographic parameters

- Bathymetric data and nautical chart
- Numerical models on tsunami generation and propagation
- Simulation of tsunami characteristics (height and run-up) along the coast and risk assessment for different areas along the country's coastal line.
- Inundation and sensitive coastal habitat maps

Budget:

Year 1-2 (2008-2009)	- SLR 246.4 million (USD 2.464 mi)
Sea level monitoring and tsunami forecasting	10,000
Monitoring of ocean based disasters and risk and vulnerability analysis	300,000
Human resources development	4,000
Infrastructure development	150,000
Infrastructure development for R&D in Oceanography/ marine sciences	800,000
Capacity building in oceanography	400,000
Human resources development in oceanography & marine sciences	800,000
Year 3-5 (2010-2012)	- SLR 401.1 million (USD 4.011 mi)
Sea level monitoring and tsunami forecasting	8,000
Monitoring of ocean based disasters and risk and vulnerability analysis	150,000
Human resources development	3,000
Infrastructure Development	50,000

Infrastructure development for R&D in Oceanography/ marine sciences	800,000
Capacity building in Oceanography	300,000
Human resources development in Oceanography & marine sciences	700,000
Ocean going research & survey vessel	2,000,000
Year 6-10 (2012-2016)	- SLR 104.3 million (USD 1.043 mi)
Sea level monitoring and Tsunami forecasting	2,000
Monitoring of Ocean based disasters and risk and vulnerability analysis	150,000
Human resources development	1,000
Infrastructure development	50,000
Infrastructure development for R&D in oceanography/ marine sciences	340,000
Capacity building in oceanography	100,000
Human resources development in oceanography & marine sciences	400,000
Total Budget	- SLR 751.8 million (USD 7.518 mi)

Funding status:

Funding available / Additional Local Funding/ International Funding Required

Contact persons in lead and participating agencies:

Head\Oceanography Division, NARA, Crow Island, Colombo 15

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Fax: +94-11-2521932 Fax: +94 112 698 311

E-10

Establishment of an EWS for Nuclear Accidents and Monitoring of Environmental Radiation**Agencies involved:**

Atomic Energy Authority (AEA), DoM, Sri Lanka Navy

Background and Rationale :

Various types of ionizing radiation sources are widely used in industrial, medical and agricultural fields and as well as research purposes in Sri Lanka. The activities of the sources range from a few kilo becquerel to thousands of giga becquerel. The loss or misuse of ionizing radiation sources could result in radiation exposure of workers and the public and can also lead to environmental contamination. In extreme cases the exposure can be lethal while lower levels of exposure could lead to long-term health effects. Radiological accidents that can affect Sri Lankan are two fold:

1. *Nuclear reactor accidents in neighbouring countries:* Nuclear reactor accidents in neighbouring countries like India and Pakistan will not have an immediate effect on Sri Lanka as the nearest reactor is more than 100 km away. Though there will be no short-term health effect, radioactive material deposited in parts of Sri Lanka may however cause long-term exposure increasing the probability of cancer.
2. *Radiological accidents in Sri Lanka:* Accidents in radiation facilities in Sri Lanka can cause deaths if timely action is not taken to mitigate the consequences. In most cases, consequences will be limited to the immediate vicinity of the facility. Although Radioactive Dispersive Devices (or dirty bombs) used by terrorists can spread radioactive material over a large area depending on the power of the bomb, it will not lead to immediate death due to radiation exposure. However long term health effects can exist, though not as severe as long-term exposures expected from a nuclear accident.

AEA as the national agency has the main responsibility for establishment of plans for radiological emergencies which may arise in the country.

Current activities: The AEA is taking all efforts to establish a Radiological Emergency Response (RER) Plan at the national level. The IAEA through its programme of technical co-operation is providing support to the development of such capabilities through several technical cooperation projects. As a result of this programme the IAEA has already trained some officers in emergency response planning. The AEA has already taken the following steps to develop capabilities on RER according to IAEA guidelines. Two doctors have been trained for medical management of radiation

exposed personnel. Four officers have been trained to serve on RER Planning. Some essential equipment required for radiological monitoring and assessment have also been purchased.

Gaps to be addressed: To establish an early detection system for nuclear accidents and development of an environmental radiation monitoring programme for the protection of people and the environment from radionuclides. It should include:

- Installation of on-line radiation monitoring instruments for detection of radionuclide in the environment due to nuclear accidents (early detection system).
- Purchase of analytical and sample collecting equipment for quantitative analysis of radionuclides in the environment (environmental sample analysis) leading to decisions on protective actions in the affected
- Purchase of a suitable vehicle to collect environmental samples and setting up a mobile laboratory for radiological emergency assessment and response.
- Provide training to relevant officials

Objective:

To establish an organized RER capability for timely coordinated actions at the national level during nuclear/radiological accidents

Time frame of implementation

Year 3-10 (2008-2015) Medium and Long-term

Geographical area of implementation:

Jaffna, Mannar, Trincomalee districts, Colombo and Southern Province

Activities:

Year 3-5 (2008-2010)

- a. Purchase of equipment for on line radionuclide monitoring, data transfer,, and sample collection and analysis
- b. Installation and testing of equipment
- c. Preparation of a Base Line for radionuclides.
- d. Purchase of a suitable vehicle.
- e. Personnel training (Specialised)
- f. Installation of 4th monitoring station in Colombo
- g. Data collection and assessment
- h. Environmental sample analysis

Year 6-10 (2011-2015)

- i. Installation of 5th monitoring station in Southern Province.
- j. Data collection analysis
- k. Environmental sample analysis.

Output:

Well organised radiation monitoring programme and timely response capability of participating agencies.

Budget:

Year 3-5 (2008-2010)	- SLR 39.5 million (USD 0.395 mi)
Year 6-10 (2011-2015)	- SLR 6.6 million (USD 0.066 mi)
Total Budget	- SLR 46.1 million (USD 0.461 mi)

Funding status:

Funds Not Available, Local / International Funding Required

Contact persons in lead and participating agencies:

AEA
Senior Scientific Officer,
Coordinator for Radiological Emergency Management, Atomic Energy Authority

E-11

Erecting Tsunami Warning Towers in Selected Coastal Areas

Agencies involved:

DMC, District Secretaries, LAs of selected locations

Background and Rationale :

With the experience of the December 2004 Tsunami, the necessity has been identified for Tsunami Warning Towers that would help reducing the victims. The system has to be established for receiving of the warning from DMC Tsunami Early Warning Centre at the towers erected in selected locations. District, division or LA authorities as relevant, will have the responsibility for onward dissemination of warning and evacuation of vulnerable communities as may be necessary. The system has to be established and responsible personnel trained. The most vulnerable locations must be selected for erecting the towers.

In Thailand, warning towers have been erected in 9 provinces linked to the national EW Centre in Bangkok. This has also assisted in the re-promotion of tourism in areas such as Phuket.

Objective:

To supply and erect tsunami warning towers in 100 selected locations and personnel trained

Time frame of implementation:

Year 1-2 (2006-2007) - Short term

Geographical area of implementation:

Selected locations along the coast in Sri Lanka

Activities:

- a. Selection of locations for erection of towers
- b. Providing of 100 towers
- c. Establishing the system and fixing responsibilities
- d. Providing training

Output:

Tsunami towers in 100 selected locations

Budget:

Year 1-2 (2006-2007) - SLR 350 million (USD 3.5 mi)
Total Budget - SLR 350 million (USD 3.5 mi)

Funding status:

Funds Not Available, Local / International Funding Required

Contact persons in lead and participating agencies:

M/DM&HR, Disaster Management Centre (DMC)
District Secretaries, LAs of selected locations

Chapter 5

Preparedness and Response Plans

5.1 Key Issues

The objective of disaster preparedness plans is to minimise the adverse effects of a hazard through effective precautionary measures and adequate responses, to ensure timely and coordinated delivery of relief and assistance following a disaster.

Preparedness involves the development and regular testing of warning systems (linked to multi-hazard EWS) and plans for evacuation or other measures to be taken during a disaster alert period. It also involves the education and training of officials, intervention teams and communities. Establishment of policies, standards, organizational arrangements and operational plans to be applied following a disaster are also crucial. Effective plans also consider securing resources, possibly including stockpiling supplies and earmarking funds. These plans are being supported through the provisions of the DMA Act.

Some of the key issues arising with regard to response and preparedness plans relate to finances for immediate response and also with systematic building of capacity across all levels. This includes clearly defining roles for involved agencies to avoid mismanagement, overlaps and gaps in response to disasters as well as emphasising the coordination of all such recognised agencies. It is also important to ensure reliable lines of communication including alternative lines for emergency communication; sensitise the media to the importance of correct information and ensure informant mechanisms for the same. The logistics channel should be kept prepared for an immediate impact, with needs assessment in the aftermath of a disaster; and a clear role for nation-wide NGOs is to be defined in government response plans.

5.2 Strategy

The identified issues and needs for this theme can be addressed through the following suggested strategies in the short-medium term:

- Provisions in annual budgets of respective line ministries/ agencies through the DM Plan.
- Identification of skills/ knowledge required in developing an HRD plan.
- Provide equipment and train staff/ volunteers to use them.
- Mapping of resources and materials available with public and private sectors.
- Regulations in place to utilise such equipment as desired by the DM Plan
- Develop and enforce / gazette standard operating procedures for all activities.
- Drills and simulation, to check the system.
- Incident Command System should be well defined.
- Bring clarity about roles and responsibility amongst various actors.
- All stakeholders should be aware of each other's roles and responsibilities.
- Declaration and dissemination of disaster situation at various levels.
- Legal provisions to ensure ownership of media actions.
- Government body to provide standard communication messages.
- One government body to specify items, describe quantities required and expected date of delivery.
- Develop specifications of emergency items, as may be required under different disaster situations.
- Gazettes notification/ incorporation of institutional mandate.
- Inclusion of SLRCS for specified duties/ responsibilities under Standing Orders.
- Inclusion of NGOs/INGOs for specified duties/ responsibilities under Standing Orders/ response plans.

The following components have been identified as essential to the development of a comprehensive action plan for disaster preparedness at the national, sub-national and local levels:

Development of DM (preparedness and response) plans by each ministry/ department and districts/ divisions

Developing emergency response capacities at Provincial, Municipality and UC levels

Establishing a competent cadre of emergency response and DM coordinators at all levels to extend support to DMC/ District Emergency Operations Rooms

Development of district level emergency services network; establishment of hospital emergency preparedness mechanism;

Resource network for emergency response

Procedure for sharing of information, manpower and resources

In addition, the following have been prioritised for immediate attention in order to situate longer term activities within a sustainable framework:

i. Developing and Maintaining a National Emergency Preparedness and Response Plan

Development of a National Emergency Preparedness and Response Plan (NEPRP) will help various line ministries, departments and agencies, to collaborate in providing needs-based efficient responses to those in need. This will also help identify a role for organisations like SLRCS, and International NGOs, in various stages of DM, by defining the mandates of DMC and concerned line ministries, departments, agencies and other organisations, in managing various disasters. The plan will define functional roles and responsibilities to each of these ministries and departments, through the different stages of disasters. Further, this will allow response plans to be prepared for each district, division and vulnerable community, to be linked to the NEPRP. Since there are various levels of operation and administration, this plan will formulate Standard Operating Procedures (SoPs), defining the directions in managing disaster response.

ii. Establishing a 24x7 National Emergency Operation Centre (NEOC) and District Emergency Operation Rooms

This will involve the setting up of an institutional framework for a response operation, from triggering action, providing direction and control, to service delivery through existing ministry departments/ agencies. Similarly, Emergency Operation Centre (EOC) at the district level will form a decentralised mechanism for response operations, while maintaining a standard approach. This will also emphasise development of Standing Orders/ Standard Procedures, to provide legal status to concerned agencies in order to carry out tasks, while working under EOC authority, as mandated under the Incident Command System (ICS)

5.3 Project Proposals

The following projects have been identified as essential for disaster preparedness at the national, sub-national and local levels:

- PR-1 Hazard Specific Response Plans
 - PR-1.1 Cyclone and Tornado Response Plan
 - PR-1.2 Drought Response Plan
 - PR-1.3 Flood Response Plan
 - PR-1.4 Tsunami Response Plan
 - PR-1.5 Landslides Response Plan
 - PR-1.6 Lightning and Thunderstorms Response Plan

- PR-2 National Rapid Response Team
- PR-3 Emergency Operation Centres (EOCs)
- PR-4 Hazard Specific Contingency Plans
- PR-5 Emergency Service Networks (ESNs)
- PR-6 Knowledge Management Systems
- PR-7 Health Sector Preparedness and Response Mechanism
- PR-8 Private Sector Preparedness for Disaster Response
- PR-9 National Radiological and Nuclear Emergency Management Plan
- PR-10 Capacity Building of Local Authorities for Emergency Response
- PR-11 Provision of Facilities for Storage of Emergency Reserves and Resource Needs
- PR-12 Construction of Multi-purpose Buildings for use as Tsunami Safe Shelters and Other Purposes along the Coastal Zone of the Country
- PR-13 Improvement of Mortuaries in Government Hospitals
- PR-14 Establishment of Nation-wide Emergency Communication System
- PR-15 Search and Rescue in Disasters by Sri Lanka Army
- PR-16 Strengthening Responses to Oil Pollution, Flood Relief Operations and Enhancing SAR capabilities at Sea
- PR-17 Provision of Aircraft for Disaster Management Operations and Activities

PR-1.1**Cyclone and Tornado Response Plans****Agencies involved:**

DMC, PCs, District/ Divisional Secretariats, LAs, GNs, Line Agencies, Telecom, DoM, NGOs, Community Based Organisations (CBOs), SLRCS.

Background and rationale:

The geographical location of Sri Lanka makes it less prone to high intensity disasters. However, infrequent events such as the cyclones of 1978 and 2000 and the tornado of 2004 have caused large scale destruction to lives and livelihoods. The devastation caused by the tsunami of 2004, has increased the vulnerability of the coastal communities to sea/ tidal surges. Lessons derived from past response operations to cyclone and tornado events, reflect the importance of putting end to end warning systems in place, while initiating risk reduction measures towards coastal zone protection, better housing construction, selection of shelter sites and public awareness /dissemination.

The more informed the people, the less threat there is to lives. Still, a multi-hazard consequence management system is required to help those affected, in a timely and efficient manner. These plans should be linked to community based risk reduction programmes, to improve the overall risk reduction scenario, and empower communities to protect their lives and property in the events of such disaster risks.

Objective:

- a. To make available the coordination and control mechanism to EW / public dissemination mechanisms, directions, leadership and optimal utilisation of resources
- b. To link DM specific structures with service delivery structures i.e. EOC with emergency service networks
- c. To establish linkages between institutional response and community based response mechanisms

Time frame:

Year 1-2 (2006-2007) - Short Term

Geographical area of implementation :

National, Provincial, District, Village and Community level interventions, in all coastal districts of Sri Lanka

Activities:

Year 1-2 (2006-2007)

1. Set up technical advisory committees for Cyclone and Tornado Response Plan¹.
2. Facilitate meetings to develop risk profile and risk management approach/ strategy¹.
3. Share guidelines² for development of draft district, divisional and local authority level Response plans.
4. Develop a draft plan, based on, and linking response plans at various levels (District, Divisions, local authorities) and link with the working group developing SoPs/ Standing Orders.
5. Field test and finalize the plan.
6. Review and update plan on annual basis/ to include post disaster recommendations.

Output:

Cyclone Public Warning and Response Plans are in place at the National level, with appropriate linkages with Provincial, District, Divisional and Village/ Community level plans

Budget:

Year 1-2 (2006-2007) - SLR 10 million (USD 0.10 mi)
Total Budget - SLR 10 million (USD 0.10 mi)

Funding status:

Local / International Funds Required.

Contact persons in lead and participating agencies:

Director General,
Disaster Management Centre
Tel: 011-2441570/73 Fax: 011-2441571
Email: dmcs1@sltnet.lk dgdmcsl@gmail.com

1 Links with Hazard, Risk and Vulnerability Assessment & EWS Components

2 Guidelines to include Planning Considerations, Vulnerability assessments, Resource Mapping with public and private actors, links with response plans of lower levels (I.e. Village/ Community Plans) etc.

PR-1.2**Drought Response Plan****Agencies involved:**

DMC, PCs, District/ Divisional Secretariats, LAs, GNs, NWS&DB, DoM, DoA, ID, NGOs, CBOs, SLRCS

Background and rationale:

Despite a good average rainfall, Sri Lanka has suffered six major droughts during last 25 years, which have affected over 1.5 million people on an average. Most of the land being rain fed, the probability of crop failure is very high, due to abnormal variation in rainfall pattern. There have been very few cases where rains have failed for two or more successive years but such incidents have caused shortfall in availability of drinking water, usually in areas dependant on wells, local tanks/ponds and hand pumps. Hambantota, Puttalam, Kurunagala, Anuradhapura, Monaragala, are some districts which have faced such droughts very often.

While it is easy to forecast crop failure based on rainfall patterns, the institutional response has been to provide crop seeds, food packets/ cash vouchers and water bowsering. However, there is a need to study the possibility of improving forecasting techniques, so that institutional response also includes supplementary canal irrigation wherever possible. Improved forecasting will also help actuate field assessments for effective drought response.

Objectives:

- a. To provide linkage between drought response plan and forecasting /assessment system
- b. To develop coordination and control mechanism to provide directions, leadership and optimal utilisation of resources.
- c. DMC/EOC linked with service delivery structures i.e. emergency service networks.
- d. Linkages between institutional response and community based response established.

Time frame:

Year 1-2 (2006-2007) - Short term

Geographical area of implementation:

National, Provincial, District, Village and Community level interventions in the drought-prone districts of Sri Lanka

Activities:

Year 1-2 (2006-2007)

1. Set up technical advisory committees for Drought Response Plan¹.
2. Facilitate meetings to develop risk profile and risk management approach/ strategy¹, including assessment methodologies, following drought forecasting.
3. Share guidelines² for development of draft district, divisional and local authority level response plans, based on field assessments.
4. Develop a draft plan and linking response plans at various levels (District, Divisions, LAs) and link with the working group developing SoPs/ Standing Orders.
5. Develop approaches where response activities provide long term mitigation i.e. “food for work” schemes for tank de-silting / deepening etc.
6. Field test and finalise the plan.
7. Review and update plan on annual basis/ to include post disaster lessons/ recommendations.

Output:

Drought Forecasting, Assessment and Response Plan is in place at the national level, with appropriate linkages with Provincial, District, Divisional and Village / Community level plans.

Budget:

Year 1-2 (2006-2007) - SLR 10 million(USD 0.10 mi)

Total Budget - SLR 10 million (USD 0.10 mi)

Funding status:

Local / International Funds Required.

Contact person in lead and participating agencies:

Director General,

Disaster Management Centre

Tel: 011-2441570/ 73 Fax: 011-2441571

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¹ Links with Hazard, Risk and Vulnerability Assessment & EWS Components

² Guidelines to include Planning Considerations, Vulnerability assessments, Resource Mapping with public and private actors, links with response plans of lower levels (I.e. Village/ Community Plans) etc.

PR-1.3**Flood Response Plan****Agencies involved:**

DMC, PCs, District/ Divisional Secretariats, LAs, GNs, Line Agencies, ID, MASL, Agrarian Service Department, Sri Lanka Land Reclamation and Development Corporation (SSLRDC), CMC, DoM, Telecom, NGOs, CBOs, SLRCS

Background and rationale:

Almost every year, some part of Sri Lanka is affected by floods. There have been 38 floods in the last 48 years, each time killing about 25, and affecting over 170,000 people on an average. The floods and landslides disaster in May 2003, which was termed as the worst in last sixty years, killed as many as 235 people in five districts. While the Asian Disaster Preparedness Center (ADPC) study suggests that monitoring of river basins may allow possible forecasting/ early warning, there is also a need to reduce vulnerability of people living in areas prone to flash floods, through improved response mechanisms.

During the floods response operation in 2003, the government provided good coordination with line ministries, departments, UN bodies, international NGOs, SLRCS/ NGOs, to successfully provide relief. With the establishment of DMC, there is scope to improve search and rescue, as well as rehabilitation and reconstruction elements under the DMC framework.

Objectives:

- a. To develop a coordination and control mechanism providing directions, leadership for optimal utilisation of resources.
- b. To link DMC/EOC with service delivery structures i.e. emergency service networks.
- c. To establish suggested linkages between institutional response and community based response.

Time frame:

Year 1-2 (2006-2007) - Short term

Geographical area of implementation:

National, Provincial, District, Village and Community level interventions in the flood-prone districts of Sri Lanka

Activities:

Year 1-2 (2006-2007)

1. Set up technical advisory committees for Floods Response Plan¹.
2. Facilitate meetings to develop risk profile and risk management approach/ strategy¹.
3. Share guidelines² for development of draft district, divisional and local authority level response plans.
4. Develop a draft plan, based on, and linking response plans at various levels (District, Divisions, LAs) with the working group developing SoPs/ Standing Orders.
5. Field test and finalise the plan.
6. Review and update plan on annual basis to include post disaster recommendations.

Output:

Floods Response Plan is in place at the National level, with appropriate linkages to Provincial, District, Divisional and Village / Community level plans.

Budget:

Year 1-2 (2006-2007) - SLR 10 million(USD 0.10 mi)

Total Budget - SLR 10 million (USD 0.10 mi)

Funding status:

Local / International Funds Required.

Contact person in lead and participating agencies:

Director General,

Disaster Management Centre

Tel: 011-2441570/ 73 Fax: 011-2441571

Email: dmcs1@sltnet.lk dgdmcs1@gmail.com

¹ Links with Hazard, Risk and Vulnerability Assessment & EWS Components

² Guidelines to include Planning Considerations, Vulnerability assessments, Resource Mapping with public and private actors, links with response plans of lower levels (I.e. Village/ Community Plans) etc.

PR-1.4**Tsunami Response Plan****Agencies involved:**

DMC, PCs, District/ Divisional Secretariats, LAs, GNs, Line Agencies, Telecom Department, DoM, Health Department, Police Department, Armed Forces, NGOs, CBOs, SLRCS, Radio and SL Rupavahini Channel

Background and rationale:

The tsunami in December 2004 highlighted the need for Sri Lanka to develop a National DM framework, to enhance its institutional practices to manage such low frequency high intensity disasters. Although the 26 December tsunami caused the death of over 31,000, the institutional response in successful evacuation of population at risk to 28 March 2005 (potential) tsunami warning reflects the capacity of the Sri Lanka government and DM stakeholders when working together. Vast devastation was caused to natural and man made protection in the coastal areas by the 2004 tsunami, further increasing vulnerability of the people.

It is in this light that EW and public dissemination have to be improved, in order to minimise threats to people's life and livelihoods. This will also ensure that the proposed Emergency Service Network (ESN) will cope with the consequent impact on society.

Objectives:

- a. Coordination and control mechanism to provide EW/ public dissemination mechanisms, directions, leadership and optimal utilisation of available resources.
- b. DM specific structures linked with service delivery structures i.e. EOC with emergency service networks.
- c. Linkages between institutional response and community based response plans established.

Time frame:

Year 1-2 (2006-2007) - Short term

Geographical area of implementation:

National, Provincial, District, Village and Community level interventions in coastal districts of Sri Lanka

Activities:

Year 1-2 (2006-2007)

1. Set up technical advisory committees for the Tsunami Response Plan¹.
2. Facilitate meetings to develop risk profile and risk management approach/ strategy¹.
3. Share guidelines² for development of draft district, divisional and local authority level response plans as well as the guidelines and strategies for coastal conservation/ buffer zone development and mitigation)
4. Develop a draft plan, based on, and linking response plans at various levels (District, Divisions, LAs) with the working group developing SoPs/ Standing Orders.
5. Field test and finalise the plan.
6. Review and update plan on an annual basis to include post disaster recommendations.

Output:

Tsunami EW/ Public dissemination and Response Plans are in place at the National level, with appropriate linkages to Provincial, District, Divisional and Village / Community level plans.

Budget:

Year 1-2 (2006-2007) - SLR 10 million(USD 0.10 mi)

Total Budget - SLR 10 million (USD 0.10 mi)

Funding status:

Local / International Funds Required.

Contact person in lead and participating agencies:

Director General,

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dgdms1@gmail.com

¹ Links with Hazard, Risk and Vulnerability Assessment & EWS Components

² Guidelines to include Planning Considerations, Vulnerability assessments, Resource Mapping with public and private actors, links with response plans of lower levels (I.e. Village/ Community Plans) etc.

PR-1.5**Landslides Response Plan****Agencies involved:**

DMC, PCs, District/ Divisional Secretariats, LAs, GNs, Line Agencies, NBRO, DoM, NGOs, CBOs, SLRCS.

Background and rationale:

10 districts in Sri Lanka are prone to landslides, thus posing a high risk to people living in these areas. Three major landslide disaster events in the last 50 years have killed 40 people an average and caused destruction to infrastructure. While technology and methods are available to monitor land conditions to avoid potential landslides in most cases, public awareness and institutional capacity need to be developed and put in place.

Objectives:

- a. Coordination and control mechanism to provide directions, leadership and optimal utilisation of resources available.
- b. DM specific structures linked with service delivery structures i.e. EOC with emergency service networks.
- c. Linkages between institutional response and community based response established.

Time frame:

Year 1-2 (2006-2007) - Short term: 2 Years

Geographical area:

National, Provincial, District, Village and Community level interventions in the 10 landslide prone districts of Sri Lanka

Activities:

Year 1-2 (2006-2007)

1. Set up technical advisory committees for Landslide Monitoring and Response Plan¹.
2. Facilitate meetings to develop risk profile and risk management approach/ strategy¹.
3. Share guidelines² for development of draft district, divisional and LA level response plans.

¹ Links with Hazard, Risk and Vulnerability Assessment & EWS Components

² Guidelines to include Planning Considerations, Vulnerability assessments, Resource Mapping with public and private actors, links with response plans of lower levels (I.e. Village/ Community Plans) etc.

4. Develop a draft plan, based on, and linking response plans at various levels (District, Divisions, LA) with the working group developing SoPs/ Standing Orders.
5. Field test and finalise the plan.
6. Review and update plan on annual basis/ to include post disaster recommendations.

Output:

Landslide Response Plan is in place at the National level, with appropriate linkages with Provincial, District, Divisional and Village / Community level plans.

Budget:

Year 1-2 (2006-2007) - SLR 10 million(USD 0.10 mi)

Total Budget - SLR 10 million (USD 0.10 mi)

Funding status:

Local / International Funds Required.

Contact person in lead and participating agencies:

Director General,

Disaster Management Centre

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PR-1.6**Lightning and Thunderstorms Response Plan****Agencies involved:**

DMC, PCs, District/ Divisional Secretariats, LAs, GNs, Line Agencies, Telecom, DoM, NGOs, CBOs, SLRCS, Sri Lanka Broadcasting Corporation and Sri Lanka Rupavahini Corporation, Police Department, Armed Forces

Background and rationale:

Although lightning and thunderstorms are not recorded as a major disaster in Sri Lanka, raw data suggest that on an average, as many people get killed annually by lightning strikes as in road accidents. Habitation in lightning prone, low lying areas compounded by lack of awareness on preparedness/ prevention measures results in many lives lost every year. While preventive measures will dictate the success in DM interventions in this sector, mobile health response may play a crucial role in reaching affected, for improved consequence management.

Objective:

- a. Coordination and control mechanism to provide directions, leadership and optimal utilisation of available resources.
- b. DM specific structures linked with service delivery structures i.e. EOC with emergency service networks.
- c. Linkages between institutional response and community based response plans established.

Time frame:

Year 1-2 (2006-2007) - Short term

Geographical area of implementation:

National, Provincial, District, Village and Community level interventions in most prone areas

Activities:

Year 1-2 (2006-2007)

1. Set up technical advisory committees for Lightning and Thunderstorms Response Plan¹.
2. Facilitate meetings to develop risk profile and risk management approach/ strategy¹.
3. Share guidelines² for development of draft district, divisional and local authority level response plans.

¹ Links with Hazard, Risk and Vulnerability Assessment & EWS Components

² Guidelines to include Planning Considerations, Vulnerability assessments, Resource Mapping with public and private actors, links with response plans of lower levels (I.e. Village/ Community Plans) etc.

4. Develop a draft plan, based on, and linking response plans at various levels (District, Divisions, local authorities to the working group developing SoPs/ Standing Orders)
5. Field test and finalise the plan.
6. Review and update plan on annual basis to include post disaster recommendations.

Output:

Lightning and Thunderstorms Response Plans are in place at the National level, with appropriate linkages to Provincial, District, Divisional and Village / Community level plans.

Budget:

Year 1-2 (2006-2007) - SLR 10 million(USD 0.10 mi)

Total Budget - SLR 10 million (USD 0.10 mi)

Funding status:

Local / International Funds Required.

Contact person in lead and participating agencies:

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PR-2**National Rapid Response Team****Agencies involved:**

Ministry of DM, DMC, Police, Fire-Search & Rescue Services, Armed Forces, Health, related line agencies, service providing agencies, SLRCS, select NGOs.

Background and rationale:

The recent tragedy provided valuable lessons in disaster management to the agencies involved. Workshops conducted by many agencies on lessons learnt, and the District DM Plan exercise carried out in some southern /western districts (Matara, Ratnapura, Hambantota etc) have highlighted the need for skilled personnel to perform specific functions such as search and rescue, and providing technical leadership in contingency situations such as oil spill, hazardous material accidents, chemical and industrial accidents etc.

Similarly, it is important to identify and train key officials, to lead DM sectoral functions under the ESN including evacuation, media and information management, mass care (food, health checkups, water and sanitation activities, community kitchens etc), following Standard Operating Systems / Standing Orders, to remain coordinated by EOCs under DMC. These skilled resources need to be positioned in relevant vulnerable areas, and equipped appropriately, to carry on desired functions.

Objective:

Effective and efficient disaster response support provided, through strategically positioned, appropriately skilled and equipped personnel of the government, NGOs and SLRCS, coordinated by EOCs/DMC.

Time frame:

Year 1-5 (2006-2010) - Short and Medium term

Geographical area of implementation:

National level, district level and municipal council level teams, based in various line agencies, departments, NGOs and SLRCS branches.

Activities:

Year 1-2 (2006-2007)

1. Identification of specialised skill sets required, for different disasters and contingencies.
2. Establish a core team, with a definite legal mandate. These members should be linked to broader teams under contingency specific response plans.

3. Organise capacity building, including equipping¹ the team members and their training on using such equipments.
4. Standard Operating Systems and Standing Orders / procedures developed.
5. Link with Disaster Response / Contingency plans.
6. Public dissemination of availability of such teams.
7. Develop and share contact/ telephone directory for such team members.

Year 3-5 (2008-2010)

8. Carry out refresher training programmes, incorporating field experiences.
9. Appropriate transfer policy to be developed to ascertain availability of skilled people in vulnerable areas.

Outputs:

Cross sectoral, multi-agency National Specialised Rapid Response Team in operation for deployment during disaster / contingency situations.

Budget:

Year 1-2 (2006-2007) - SLR 10 million(USD 0.10 mi)

Total Budget - SLR 10 million (USD 0.10 mi)

Funding status:

Local / International Funds Required.

Contact person in lead and participating agencies:

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¹ Includes resource requirements/ mapping.

PR-3**Emergency Operation Centres (EOCs)****Agencies involved:**

DMC, District Secretaries, Agencies identified for Emergency Service Networks.

Background and rationale:

During the last four years, Sri Lanka has experienced about seven disasters, requiring intervention at the national and international levels. The Sri Lanka government has managed these disasters well, but issues still remain unaddressed in terms of improving the institutionalised response and mitigation measures, so that in-country efforts are sufficient in addressing community needs of most of these disasters.

The DM Act passed in May 2005 has paved the way for establishment of a DMC in Colombo, to lead the process of institutionalising DM. Under the scope of the National Disaster Response Plan, establishment of EOCs at DMC is a priority. Establishment of EOCs at national and district levels will be helpful in taking a lead in activating the response operation and through the Incident Command System (ICS) provide necessary direction and control in utilising resources available/ acquired, to reach affected and vulnerable populations. Through the ICS, EOCs will help coordinate disaster response, taking support from various line ministries/ agencies, departments, identified NGOs and SLRCS branches, through coordination meetings at various levels, depending upon the scale of disaster/ contingencies. Creation of a disaster resources network for emergency/ disaster response that captures information on manpower and resources along with established procedures for sharing them will be useful to enhance effectiveness of response.

Objective:

- a. To institute Incident Command System at National and District levels.
- b. To assign responsibilities to focal bodies.
- c. Develop institutional framework and coordination mechanism to facilitate delivery of emergency related services, based on assessment of scale of disaster / contingency and consequent community needs.
- d. Develop a resources network for emergency response

Time frame:

Year 1-3 (2006-2008) - Short and Medium term

Geographical area of implementation:

Country-wide, especially at DMCs and all District Secretariats.

Activities:

1. Specific role for the EOC and the ICS to be defined and adopted.
2. Infrastructure to be provided
3. SoPs / institutional tools to be made available to the centre.
4. Field testing and regular drills to be instituted.
5. Provision for financial resources to activate any response/ contingency plans, together with continuous (24X7) monitoring.
6. Hiring consultants / subject experts for Standing Orders/ SoPs
7. Establishment of EOCs at DMC and 25 districts
8. Office equipments for DMC/ district EOCs.
9. Consultative meetings amongst ESN team leaders/ focal persons-2 at National and 2 each at district EOCs.
10. Communication equipments for EOCs
11. Study tours / exposure visits of EOCs/ ESN members within the region.
12. Identify agencies with material and human resources for emergency response
13. Involve such relevant agencies in designing database of available resources and protocol for sharing the resources at the times of emergency
14. Design and operationalise the resources network for emergency response

Output:

Setting up of ICS- an institutional framework for a Response Operation, from triggering action, providing direction and control, to service delivery through existing ministry departments/ agencies. Similarly, EOCs at district level forms a decentralized mechanism for response operations, while maintaining a standard approach. This will also emphasise development of Standing Orders/ Standard Procedures, to provide legal status to concerned agencies, to carry out tasks, while working under EOC authority.

Budget:

Year 1-2 (2006-2007)	-	SLR 35 million (USD 0.35 mi)
Year 3 (2008)	-	SLR 10 million (USD 0.10 mi)
Total Budget	-	SLR 45 million (USD 0.45 mi)

Funding status:

Local / International Funds Required.

Contact person in lead and participating agencies

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District Secretaries
Line Ministries/
Agencies for Emergency Service Networks

PR-4**Hazard Specific Contingency Plans****Agencies involved:****DMC**

Relevant EOCs in districts, District/ Divisional Secretaries, LAs

Agencies responsible for various hazard and risk assessments

Ministry of Health, Provincial Ministries of Health, Ministry of Education, Police Department/ Armed Forces, Fire Services, Department of Motor Traffic, CEB, NWSDB, RDA/ PRDAs, Sri Lanka Telecom, LAs, Department of Social Services, SLRCS, St. John Ambulance Services, NGOs, private sector agencies

Background and rationale:

Disasters have affected not just common people and their property but vulnerable public infrastructure as well. When some departments are required to provide essential services to people, collapse of their own infrastructure, and those of private sector may pose serious problems in meeting the increased demand of their services.

As a growing economy, Sri Lanka has provided many opportunities for business development, including the tourism industry. Increased purchase power, tourism and business activities have resulted in higher number of vehicles plying on Sri Lankan roads, posing a threat to the community on and along main and sub highways.

Institutional plans for both the public and private sector, which aim at safeguarding their own infrastructure (Human & Knowledge resources, equipments/ machinery/ mobility etc), and managing increasing service delivery load are a prime requirement to ensuring an informed and dependable response. DMC aims to support private sector, government and key institutions, in their mitigation/ preparedness plans, by providing technical assistance.

Objective:

Develop and put in place mitigation and preparedness measures for private sector, key government ministries, departments, agencies, boards, thus safeguarding their facilities, to minimise damage and maintain readiness for service delivery as and when mandated.

To strengthen operational capacities of identified departments/ agencies to activate the respective contingency plan

To establish linkages with ESN

Time frame:

Year 1-5 (2006-2010) -Short and Medium term

Geographical area of implementation:

Entire country, especially hazard prone areas

Phase-1: All key government ministries, departments, agencies, boards, private sector involved in emergency services.

Phase-2: All other government ministries, departments, agencies, boards and private sector

Activities

1. Each ministry, department, agency, private sector institution to start mapping of capacities and risk exposure to their service establishments
2. Develop institutional safety plans to protect/ limit damage to its own infrastructure/ facilities
3. Develop contingency plans to maintain organisational readiness, to be in a position to offer services as and when required
4. Develop public warning/ awareness system for each type of contingency.
5. Provide legal base for self compliance to contingency plans.
6. Establishing and strengthening monitoring capacities of responsible government / private sector entities.
7. Improve social protection/ safety net through insurance.

Output:

Institutional framework put in place, to reduce loss to infra-structural damage to concerned government ministries, departments, agencies, boards, including humans, equipments, office establishments, machinery and other matters in use. Hazard specific/ contingency plans put in place with various line ministries, departments and government agencies, as required by Sri Lanka DMA Act 2005

- a. National Oil Spill Contingency Plan
- b. National Industrial and Chemical Hazard Management Permit
- c. National Radiological and Nuclear Emergency Management Plan
- d. Forest Fire Management Plan
- e. Dam related Hazards
- f. Biological Hazard Management Plan
- g. Urban Fire Suppression And Management Plan
- h. Road Traffic Accident Management Plan
- i. Epidemics
- j. Explosion/ Bomb blasts

Budget:

Year 1-5 (2006-2010) - SLR 100 million(USD 1.00 mi)

Total Budget - SLR 100 million (USD 1.00 mi)

Funding status:

Local / International Funds Required.

Contact person in lead and participating agencies:

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District Secretaries

PR-5

Emergency Service Networks (ESNs)

Agencies involved:

Control and Direction: DMC/ relevant EOCs in districts.

Search and Rescue & Evacuation: Fire Service Department of the area/Armed Forces/Police

Communication: Sri Lanka Telecom, Police Department, SLRCS

Social Welfare/ Mass Care, Victim Identification, Tracing & Family Re-union: Social Service Department, with SLRCS, NGOs/ INGOs

Health and Medical Care: Provincial / Line Ministries of Health, SLRCS.

Psychosocial Support: Ministry of Health, SLRCS

Utilities: CEB, NWSDB, LAs.

Site Command and Control:

- Inner Circle: Fire Service

- Outer Circle: Police Department/ Armed Forces

Public Warning Dissemination: DMC with media, Police Departments, SLRCS etc

Resource Management: DMC/ EOCs.

Background and rationale:

There is an urgent need to institutionalize response to hazard situations and mitigation measures in the country. DMC has been established in Colombo, after the DM Act of May 2005. As per the the National Emergency Preparedness and Response Plan, EOCs are to be set up at DMC and district levels.

As previous response operations reflect, strengthening existing agencies and linking Sri Lanka Red Cross branches and NGOs will help improve services delivery to affected during disasters for evacuation, mass care, victims identification/ tracing and family re-union, water and sanitation, healthcare etc. National and district EOCs will coordinate roles and scope of these agencies in the affected areas.

Objective:

Develop institutional framework, to provide essential emergency services to affected and vulnerable population, as and when necessity arises, under different disasters / contingencies.

Establish emergency service networks and assign responsibilities to focal bodies

Develop scale and type of community needs under different disaster scenarios and institutional framework to provide services as per necessity

Time frame:

Year 1-5 (2006- 2010) - Short and Medium term

Geographical area of implementation:

The Entire Country; commencing from the most disaster-prone districts

Activities:

1. Set up a Technical Advisory Committee to identify scale and type of community needs under different emergency scenarios and identify focal departments/ bodies to carry out/ provide services under these sectors.
2. Identify team leader for each such sectoral service agency/ department at National/ District levels.
3. Establish operational linkages / mechanisms EOC/ DMC for role under response and contingency plans.
4. Hire consultants / subject experts for Standing Orders/ SoPs
5. Hold consultative meetings amongst ESN team leaders/ focal persons (2 at National and 2 each at District EOCs).
6. Organising study tours / exposure visits of EOCs/ESN members within the region.

Output:

ESN (Warning, Evacuation, Mass Care, Health and Medical Care, Public Warning etc) assigned responsibilities to focal bodies.

Institutional framework developed, to provide essential emergency services to affected and vulnerable populations, as and when the need arose, under different disasters / contingencies.

Scale and type of community needs under different disaster scenarios assessed and institutional framework to provide services developed

Budget:

Year 1-2 (2006-2007) - SLR 100 million (USD 1.0 mi)

Year 3-5 (2008-2010) - SLR 100 million (USD 1.0 mi)

Total Budget - SLR 200 million (USD 2.0 mi)

Funding status:

Local / international Funds Required.

Contact person in lead and participating agencies:

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PR-6

Knowledge Management Systems

Agencies involved:

DMC, agencies involved in disaster response and mitigation programmes, research organizations/ academicians /experts on DMC panel, SLRCS

Background and rationale:

Disaster preparedness is seen as an active, on-going process of dynamic ventures and needs to be reviewed, modified, updated and tested on a regular basis. This requires improvements in the response plans, by monitoring changes in hazard risks owing to environmental trends and/ or mitigation measures undertaken by various partners. To ascertain that each disaster response plan incorporates lessons from previous operations, and to provide feedback to improve preparedness and scope of mitigation programmes, institutionalisation of such knowledge management has been identified as a key programme area.

Objective:

Effectiveness of response operation to be improved regularly.

Mitigation measures to be recommended, learning from disaster response experience.

Time frame:

Year 3- 5 (2008- 2010) - Medium Term (Continuous Institutional Process)

Geographical area:

The entire country especially prone areas

Activities:

1. Organise a multi stakeholder National level workshop to:
 - i) Develop an institutional mechanism to carry out lessons learned workshops, after every disaster response operation, based on standard methodology.
 - ii) Develop mechanisms to record, interpret and transfer such knowledge into Disaster Response and Mitigation Planning in the country.
 - iii) Review / renegotiate institutional framework, as required.
2. Organise district wise meetings, to communicate and establish local mechanisms to operationalise such measures.
3. Publish and disseminate lessons learned, suggest improvements in mitigation measures, and decide on changes in institutional framework after every disaster or every year, whichever is earlier.

Outputs:

Knowledge management system established to update the National Response plans, incorporating lessons learned / updation

Institutional Framework established to record, analyse, interpret and act upon knowledge generated through lessons learned after every disaster with:

- Lead agency identified to carry out this task at the District and National levels, depending upon scale of disaster.
- Methodology standardised, to organise such events.
- Communication protocols established to ascertain incorporation of knowledge management systems into DM framework at all levels.

Budget:

Year 1-3 (2008-2010) - SLR 2.5 million (USD 0.025 mi)

Total Budget - SLR 2.5 million (USD 0.025 mi)

Funding status:

Local / International Funds Required.

Contact person in lead and participating agencies:

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PR-7 Health Sector Preparedness and Response Mechanism

Agencies involved:

Ministry of Healthcare and Nutrition, Provincial Ministries of Health, Universities, NGOs

Background and rationale:

Health services are expected to play a major role in the event of disasters. The services thus provided include the provision of emergency medical care, burial and cremation of the dead, water and sanitation services, vector and pest control activities, food hygiene, prevention of communicable diseases to name a few.

Experiences during the recent Tsunami have clearly indicated that, though the principles of DM remain unaltered over time, practical aspects of the same need to be reviewed carefully for their better application to suite current needs, challenges and opportunities.

Though the health services possessed reasonably adequate resources and the health workers responded to the immediate needs effectively, there were pockets of areas where services were not reached due to many reasons including the problems of coordination. Further, basic knowledge and skills on emergency response of health workers were not updated adequately to enable them to respond efficiently and effectively.

In this context, it is extremely important for the health sector to focus on the establishment of a system capable of a rapid, efficient and well-prepared response to save life and to restore and maintain a healthy environment following a disaster.

Objectives:

1. To reduce the loss of lives and the effects of injuries as result of disasters
2. To restore the health of the affected people as early as possible
3. To ensure that all relevant health sector institutions and organizations are capable of responding to disasters rapidly and effectively, and
4. To ensure that they are prepared to respond to any emergency

Time frame

Year 1-2 (2006-2007) - Short and Medium term

All activities except research need to be completed in the years 1 and 2. Monitoring, evaluation, and the community awareness activities will be a continuous process. Research would be carried out on a priority basis throughout the implementation period

Geographical area of implementation:

National and district level activities in the year 1

Peripheral level activities in the year 2

Activities:

Disaster Preparedness

- a. Establishment of health sector DM committees and action groups
- b. Review and updating laws, regulations and by laws related to the health sector preparedness
- c. Improving the resilience and response capacity of health institutions
- d. Training of health staff
- e. Compilation of an inventory of resources for health sector disaster management
- f. Networking with other relevant agencies
- g. Establishment of the emergency operation rooms at all levels
- h. Strengthening the Risk analysis process related to health sector preparedness and response
- i. Preparation of DM plans at all sub national levels
- j. Preparation of disaster/emergency preparedness plans and response plans at institutional level
- k. Conducting community awareness programmes
- l. Conducting research related to health sector disaster preparedness and response

Disaster Response

- m. Preparation of SOPs for emergency response and relief
- n. Establishment of special teams for rapid deployment
- o. Preparation of plans for mass casualty management at hospital level
- p. Networking among relevant agencies on disaster response and relief

Outputs:

Preparedness

- a. Health sector DM committees and action groups at all levels established
- b. Laws, regulations and by laws on health sector DM are complied and continuously updated
- c. Capacity of health sector institutions and staff of all levels for disaster preparedness and response is improved to expected level.
- d. Inventory of resources for health sector DM compiled and updated
- e. Emergency operation rooms at national and district level established
- f. Disaster preparedness plans and monitoring and evaluation mechanisms of all levels prepared
- g. Community level action groups to assist health services established

Response

- h. SOPs for Emergency response and relief and for handling of dead bodies prepared
- i. Special teams for deployment established
- j. Emergency plans for mass casualty management at hospitals prepared
- k. Active communication and coordination links with relevant agencies on DM and relief are established

Budget:

Year 1-2 (2006-2007) - SLR 100 million (USD 1.0 mi)

Year 3-5 (2008-2010) - SLR 100 million (USD 1.0 mi)

Total budget - SLR 200 million (USD 2.0 mi)

Funding status:

Local and International Funding Required

Contact persons:

Additional Secretary (Medical Services)

Ministry of Health and Nutrition,

385, Rev. Baddegama Wimalawansa Thero Mawatha,

Colombo 10. Tel: +94-11-269 3175 Fax: +94-11-269 1605

PR-8**Private Sector Preparedness for Disaster Response****Agencies involved:**

DMC, Provincial Councils, Local Authorities, Business communities

Background and rationale:

In the aftermath of a disaster the government's primary responsibility is to restore basic public services before rendering assistance to the private sector. Direct aid to individual businesses is not on the priority list of the government response system as its priority is the community at large. In such a situation it is evident that the private sector business community should be self sufficient, at least for a minimum of several days after a disaster occurs and be prepared for rapid recovery after a disaster. This can be achieved by organizing themselves as a private sector, self-help association funded by themselves. The goal of such a body basically could be, *"to provide a forum for information exchange to enhance emergency preparedness and contingency planning within the business community"*.

As an example a similar organization is in existence and functioning in the City of Los Angeles in USA. This started at a meeting in 1983 the Mayor had with a group of business leaders to discuss disaster preparedness. This group subsequently became a steering committee and formed the Business and Industry Council for Emergency Planning and Preparedness (BICEPP) established as a private sector, self-help association funded by annual sponsorship donations. BICEPP later evolved into a non-profit corporation, lead by an Executive Committee and a Board of Directors. They organise seminars and workshops specifically designed to promote emergency management, planning, education, and training. It has its own Website.

Locally, such organisations in the form of Traders' Associations etc. are presently in existence in townships, urban areas, in districts, provinces and at national level. Two samples of national level organizations are National Construction Association of Sri Lanka and the Ceylon Chamber of Commerce. However, these organisations do not function with this particular goal.

DMC through the network of local authorities can promote encouraging such associations, particularly at urban or township level to reorganize themselves, or to form new associations with this particular goal of disaster response.

Objectives:

1. To promote existing associations at different levels to take up disaster preparedness as one major goal with the aim of being self sufficient after a disaster at least for 7 days and to be disaster resilient so that they could recover within the minimum possible time after a disaster

2. To promote business community to form new associations with this particular goal of disaster response as above.

Time Frame:

Year 1-2 (2006-2007) - Short term

Year 3-5 (2008-2010) - Medium term

Geographical area of implementation:

The entire country

Activities :

1. Identify and establish contacts with the existing national and local level trade or business organisations
2. Forming new associations among business communities at local and national levels where they do not exist
3. Meetings and workshops for awareness creation providing guidance and assistance to have their own plans for responding to disasters and for rapid recovery after a disaster
4. Assistance to organize themselves to provide a forum for information exchange to enhance emergency preparedness and contingency planning within the business community
5. Monitoring and ensuring sustenance of these associations and their preparedness for possible disasters

Outputs:

1. New associations formed among business communities at local and national levels
2. Existing associations among business communities identified
3. Guidance and assistance provided to have their own plans for responding to disasters and for rapid recovery after a disaster
4. Assistance provided to organize themselves to provide a forum for information exchange to enhance emergency preparedness

Budget:

Year 1-2 (2006-2007) - SLR 1 million (USD 0.02 mi)

Total budget - SLR 2 million (USD 0.02 mi)

Funding status:

Local or International Funding Required

Contact persons in lead and participating agencies:

DMC

Director General, Disaster Management Centre

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Chief Secretaries of Provincial Councils

Mayors / Chairmen, Municipal Commissioners / Secretaries of Local Authorities

Business Communities

PR-9

National Radiological and Nuclear Emergency Management Plan

Agencies involved:

DMC, Atomic Energy Authority (AEA), Department of Meteorology, Armed Forces, Police, Ministry of Foreign Affairs, Ministry of Health, Ministry of Science & Technology, all other relevant agencies

Background and rationale:

The Radiological Accidents involved with ionizing radiation sources used in radiation facilities in Sri Lanka and explosion of Radioactive Disposal Devices (Dirty Bombs) used by the terrorists could result in serious radiation health effects (short-term or long-term) of workers and members of the public and contamination of the environment.

Nuclear Reactor Accident in a neighboring country like India and Pakistan will not have an immediate effect to Sri Lanka as the nearest reactor under operation and to be operational is not very close to have short-term health effects. However, it is possible that radioactive material can be deposited in some parts of Sri Lanka causing long-term exposure of people which could result in an increase of probability of induction of cancers.

Therefore, timely actions should be taken to respond to the consequences of accidents that can occur within Sri Lanka and outside Sri Lanka.

Objective:

To establish an organized emergency response capability for timely and coordinated actions of Sri Lanka authorities to,

- Reduce the risk or mitigate the consequences of the accidents

- Prevent serious deterministic health effects (e.g. death) due to accident in radiation facilities.

- Reduce the likely stochastic health effects (e.g. cancer) as much as reasonably achievable.

Time frame:

Year 1-2 (2006-2007) - Short term

Geographical area:

National, Provincial, District and Facility Level interventions

Activities:

1. Set-up emergency planning committee to develop radiological emergency response plan.
2. Obtain expert missions and study tours of the region.
3. Facilitate meetings to develop risk profile, planning basis and allocation of responsibilities.
4. Develop a draft plan based on and linking with the NDMC plan and the plans of various levels. (Facility, relevant Govt. Agencies etc.)
5. Inform all other agencies, institutions and facilities by meetings and seminars.
6. Purchasing necessary equipment.
7. Test plans and procedures and finalize the plan.
8. Conduct awareness programme for relevant personnel and training programmes.

Outputs:

Radiological and Nuclear Emergency Response Plan is in place at national level with appropriate linkage with the plan of DMC, facilities and other relevant Govt. authorities.

Budget:

Year 1-2 (2006-2007) - SLR 10 million (USD 0.1 mi)
Total budget - SLR 10 million (USD 0.1 mi)

Funding status:

Local and International Funding Required

Contact persons in lead and participating agencies:**AEA**

Chairman, Atomic Energy Authority
 Senior Scientific Officer,
 Coordinator for Radiological Emergency Management, AEA

Participating agencies:

DMC, Director General, Department of Meteorology
 Ministry of Defence
 Ministry of Health
 Ministry of Foreign Affairs
 Department of Police

PR-10

Capacity Building of Local Authorities for Emergency Response

Agencies involved:

M/DM&HR, DMC, Provincial Councils (PCs), LAs, Provincial Commissioner of Local Governance (PCLGs), Sri Lanka Institute of Local Governance (SLILG)

Background and rationale:

In the past disasters, especially in the recent tsunami and the 2003 flood and landslide disaster, it was seen that the LAs are not equipped to respond to different emergency situations. Even sharing of equipment with other LAs was out of the question due to very limited facilities generally in all LAs. In this context, it is justifiable to assess and provide the required response equipment; at least for major authorities selected in a manner so as they could facilitate the others in the periphery as and when the need arises. Generally, the equipment will include ambulances, water bowsers, water pumps, fire engines, fire fighting equipments / accessories (hoses with jets, ladders etc.), fire extinguishers, rowing boats, motor boats with engines, life jackets, backhoes etc. Compatibility of relevant specific types of machines provided to different authorities has to be considered. The coupled need for additional staff requirements at LAs, training, buildings for parking of equipment and staff, fund requirement for O&M etc must be considered. The basis for provision of equipment to different LAs would be as follows:

Category A - Major MCs (4 LAs):

To be equipped with a fully paramedic ambulance with basic life saving (BLS) facilities, fully equipped fire engines with water tender equipment plus foam extinguisher (complete fire brigade) with all necessary support equipment and heavy road clearing and other equipment, flood preparedness equipment and gear.

Category B - Balance MCs and major UCs (24 LAs):

To be equipped with medium ambulance, fire engines, with all necessary support equipment and heavy road clearing and other equipment including a crane, flood preparedness equipment and gear

Category C - Other UCs and major PSs (200 LAs):

To be equipped with medium ambulance, fire engines, with all necessary support equipment and heavy road clearing and other equipment, flood preparedness equipment and gear

Category D - Small and medium PSs (60 LAs):

To be equipped with trailer mounted fire trucks, with necessary support equipment and heavy road clearing and other equipment, flood preparedness equipment and gear

Objective:

To build capacity of LAs for Emergency Response by providing equipment required for response activities in the respective LAs taking the hazards prevalent in the area in to consideration.

Time frame of implementation:

Year 1 - 10 (2006-2015) - Short, Medium and Long term

Geographical area of implementation:

Stage I LAs of Category A, B & a part of C

Stage II LAs of Category C- selected

Stage III LAs of Category C- remaining and Category D

Activities:

Year 1-2 (2006-2007) : LAs of Category A, B & a part of C

- a. Assessment of the requirement
- b. Strategy for supply by categorisation of equipment and phasing out
- c. Recruitment and Training of staff by relevant MCs and major UCs selected for Stage I
- d. Supplying for LAs selected for Stage I
- e. Identifying and requesting annual maintenance funds required for each LA of Stage I

Year 3-5 (2008-2010): LAs of Category C- selected

- f. Recruitment and Training of staff by selected UCs and major PSs relevant to Stage II
- g. Supplying for LAs relevant to Stage II
- h. Identifying and requesting annual maintenance funds required for each LA of Stage II

Year 6-10 (2011-2015): LAs of Category C- remaining and Category D

- i. Recruitment and Training of staff by UCs and PSs selected for Stage III
- j. Supplying for LAs relevant to Stage III
- k. Identifying and requesting annual maintenance funds required for each LA of Stage III

Output:

Equipment provided for selected LAs followed by recruitment of staff and training provided

Budget (indicative):

Year 1-2 (2006-2007) - SLR 6000 million (USD 60.0 mi)

Year 3-5 (2008-2010) - SLR 6000 million (USD 60.0 mi)

Year 6-10 (2011-2015) - SLR 6000 million (USD 60.0 mi)

Total Budget - SLR 18000 million (USD 180.0 mi)

Funding status:

International / Local Funds Required

Contact persons in lead and participating agencies:

M/DM&HR, Director General, Disaster Management Centre (DMC), Ministry of Provincial Councils and Local Government.

PR-11

Provision of Facilities for Storage of Emergency Reserves and Resource Needs

Agencies involved:

Disaster Management Centre (DMC), Provincial Councils and District Secretaries of selected locations

Background and rationale:

As is evident in past disasters, especially in the recent tsunami and the 2003 flood and landslide disaster, there is a grave need for store houses in the affected areas for storing of different relief items. As a result of not having such facilities, some of the relief materials were just lying idle in government offices without adequate protection. Another fact is that in a planned preparedness situation it is required to store and keep various non-perishable materials, food items, etc. in readiness for use in case of a crisis.

Such storing facilities are not available even in central locations in different regions of the country presently. As such there is a need for providing such facilities at selected locations so that supplies could be sent to the needed disaster affected areas from those locations. Such stores facilities should be constructed conforming to relevant specifications.

Objective:

To provide warehouse facilities of 2000m² (20,000ft²) in each of the selected locations for storing emergency resource materials for distribution during a crisis or disaster situation.

Time frame of implementation:

Year 1-2 (2006-2007) - Short term

Geographical area of implementation:

Selected locations in Kandy, Hambantota, Anuradhapura, Kalutara, Ampara, Jaffna, Trincomalee and Ratnapura

Activities:

- a. Selection of locations
- b. Identification of types of storage materials
- c. Design of facilities to suit the needs
- d. Construction of the facilities of 2000m² each, in selected locations (Total 16000m²)

Output:

Storehouses for storage of emergency resource needs in selected locations

Budget:

Year 1-2 (2006-2007) - SLR 160 million (USD 1.6 mi)

Total Budget - SLR 160 million (USD 1.6 mi)

Funding status:

Local / International Funds Required.

Contact persons in lead and participating agencies:

M/DM&HR, Disaster Management Centre (DMC)

Provincial Councils (PCs), District Secretaries of selected locations

PR-12

Construction of Multi-purpose Buildings for use as Tsunami Safe Shelters and Other Purposes in Selected Locations along the Coastal Zone

Agencies involved:

Disaster Management Centre (DMC), Provincial Councils and District Secretaries, LAs of selected locations

Background and rationale:

As revealed during studies after the December 2004 Tsunami, lands in some coastal areas are very flat for several miles from the coast inwards and it will not possible to find high ground to be identified as safe shelter for communities to be evacuated to in case of a tsunami. In community awareness programmes, the disaster managers at district and divisional levels should be able to indicate such safe ground or safe places to the communities so that they could be trained for evacuation identifying ways of evacuating them to safe shelter. Unfortunately such high grounds do not exist in some parts of the country, especially the Eastern and Southern Provinces.

There is a dire need to provide such places and except constructing elevated post-tsunami buildings, there is no other alternative. A feasible approach would be to construct 2 to 3 storeyed buildings in selected locations and these buildings should be of post-tsunami category, i.e., built strong enough to withstand the forces of tsunami. Alternative uses can be planned for normal times. Floors could be rented out at low rates that the people can afford and the income earned can be used in maintaining the building and facilities. The height of the building and the number of floors may be decided considering the tsunami wave height in the location.

During a tsunami the building should be able to accommodate about 2000 people. While this will be used as an evacuation centre on receipt of early warning, during and after the emergency period it can serve as a temporary camps. The concrete flat roof also can be used as safe area for gathering during tsunami. In the locations in the eastern province which is cyclone prone, such buildings can be used as cyclone safe shelter as well for people to gather on issue of early warning of cyclones, as most of the village houses are not cyclone proof.

For normal times, the ground floor may be planned for shops, 1st and 2nd floors can be planned to accommodate facilities such as Reception Hall which the community can use for weddings and other function, Community Centre, Health Clinic, Library and area for renting out for tuition classes etc. Some use can be decided for the concrete flat roof for normal times with a temporary roof if needed.

Essential facilities for about 2000 people should be provided in the building, such as 50 toilets, 50 washrooms and water tanks with adequate number of water taps. There should be access and large entrances to the building from all 4 sides to avoid congestion during entry to the building from surrounding areas on receipt of tsunami early warning. The total floor area of such a building would be around 1500 m² (15,000 ft²).

Objective:

To construct buildings as elevated safe shelters for evacuation during a tsunami in 20 selected locations

Time frame of implementation:

Year 1-2 (2006-2007) - Short term

Geographical area of implementation:

Selected geographic locations in the country

Activities:

- a. Selection of locations of flat land for long stretches without natural high land Highest prone locations with experience of 2004 Tsunami
- b. Decision on the types of usage of floor during normal times
- c. Design of facilities to suit the needs
- d. Construction of the buildings - 1000m² each, in 20 selected locations (Total 20,000 m²)

Output:

Dual purpose buildings in 20 selected locations

Budget:

Year 1-2 (2006-2007) - SLR 600 million (USD 6.0 mi)

Total Budget - SLR 600 million (USD 6.0 mi)

Funding status:

Local / International Funds Required.

Contact persons in lead and participating agencies:

M/DM&HR, Disaster Management Centre (DMC)

Provincial Councils (PCs), District Secretaries, LAs of selected locations

PR-13

Improvement of Mortuaries in Government Hospitals

Agencies involved:

M/DM&HR, DMC, Ministry of Healthcare and Nutrition

Background and rationale:

In the aftermath of the recent tsunami it was seen that in hospitals in the affected areas the capacity and conditions of mortuaries was extremely inadequate for keeping the dead bodies until they were identified by the relatives of the victims. There is a need to improve and enhance the capacities of mortuaries wherever they are available and to provide such facilities where such facilities are not available at present. Such facilities should be adequately provided with cooling systems and placing the bodies in a systematic manner.

In addition there is a need for such mobile mortuaries as well so that these could be taken to the affected areas.

Objective:

To provide mortuaries of different capacities as required in different categories of hospitals, such as national hospitals and base hospitals; and to provide 10 mobile mortuaries of suitable capacity to transport dead bodies after a disaster.

Time frame of implementation:

Year 1-2 (2006-2007) - Short term

Geographical area of implementation:

The Entire Country

Activities:

- a. Selection of hospitals
- b. Supplying of facilities

Output:

Capacity and conditions of mortuaries improved in selected hospitals, new facilities provided ; mobile facilities provided for transport to required areas after disasters

Budget:

Year 1-2 (2006-2007) - SLR 150 million (USD1.50 mi)

Total Budget - SLR 150 million (USD 1.50 mi)

Funding status:

Local / International Funds Required.

Contact persons in lead and participating agencies:

M/DM&HR- Secretary

DMC- Director General

Ministry of Healthcare and Nutrition

PR-14

Establishment of Nation-wide Emergency Communication System

Agencies involved:

DMC, Provincial Councils, Local Authorities, District Secretaries, Divisional Secretaries

Background and rationale:

During a disaster fixed line and mobile communication facilities may get affected and cease to function, as was evident in the 2003 Flood and Landslide disaster as well as 2004 Tsunami disaster. Such a situation could affect the quality of the emergency response due to lack of proper communication among the main actors. Therefore it is proposed to establish a radio communication system linking DMC with Provincial Councils, District Secretariats, Local Authorities, Divisional Secretariats and other stakeholders.

This will cover 8 Provincial Councils, and 25 District Secretariats and priority Divisional Secretariats and LAs. The requirements include base stations, hand-held radio sets and supporting equipment such as repeaters etc.

Objective:

To provide a fail-safe communication system to disaster managers by establishing a country-wide radio communication system, linking all relevant stakeholders.

Time frame of implementation:

Year 1-2 (2006-2007) - Short term

Geographical area of implementation:

The Entire Country, in a phased manner

Activities:

- a. Identify exact requirements of Provinces, Districts, Divisions and LAs with DMC EOC as the main focal point.
- b. Supply the needed equipment, in a phased manner.

Output:

A nationwide radio communication system in place

Budget:

Year 1-2 (2006-2007) - SLR 100 million (USD1.0 mi)

Total Budget - SLR 100 million (USD 1.0 mi)

Funding status:

Local / International Funds Required.

Contact persons in lead and participating agencies:

M/DM&HR- Secretary

DMC- Director General

PR-15 Search and Rescue in Disasters by Sri Lanka Army

Agency involved:

Sri Lanka Army, DMC

Background and rationale:

As revealed during studies flash floods occur during monsoon period mainly in general areas of Southern and Sabaragamuwa Province and Kalutara Districts and military assistance is sought to rescue lives and property. Similarly during the Tsunami and during the bomb explosions in Colombo, Military assistance is vital for rescuing lives and improving communication and mobility to reach affected area.

There is a need for Fiber Glass Boats, Out Board Motors (OBMs), Heavy Duty Power Saws, Life Jackets and Luminous Jackets to facilitate approach to the locations is to facilitate operations where rescue assistance to the effected people and provision food and medicines is a requirement. There is also a need for Concrete Breakers, Backhoes, Cranes, and Excavators and other earth moving machinery and equipment to facilitate rescue operations and bailey bridges for bridging the Dry/Wet gaps across which the existing structures have destroyed.

Objective:

To rescue lives and access the affected areas

Time frame for implementation:

Year 1- 10 (2006 – 2015) -Short, Medium and Long term

Geographical areas of implementation:

Colombo and selected cities and locations in the country and the costal areas.

Activities:

- a. Purchase of the identified equipment
- b. Selection of locations at which rescue equipment and teams are to be located
- c. Training and formulating drills for rescue operations.

Output:

Establish rescue teams in selected areas.

Budget:

Year 1 – 2 (2006 – 2007)	-	SLR 207 million (USD 2.07 mi)
Year 3 – 5 (2008 – 2010)	-	SLR 210 million (USD 2.10 mi)
Year 5 – 8 (2011 – 2014)	-	SLR 220 million (USD 2.20 mi)
Total Budget	-	SLR 637 million (USD 6.37 mi)

Funding status:

International / Local Funds Required

Contact persons in lead and participating agencies:

Director Operations, Directorate of Operations, Army Headquarters, Colombo.
DMC

PR-16

Strengthening Responses to Oil Pollution, Flood Relief Operations and Enhancing SAR capabilities at Sea

Agencies involved:

M/DM & HR, DMC, Sri Lanka Navy (SLN), Maritime Pollution Preventive Authority (MPPA)
Sri Lanka Coast Guard (SLCG), Sri Lanka Ports Authority (SLPA)

Background and rationale:

a. Oil Pollution Prevention :

Threat of Oil pollution has been a phenomenal problem for several years. Oil in the oceans is one of the ugliest forms of marine pollution and with the rapid development and the negligence of the sea farers this may assume disastrous proportions in future. It is necessary to curtail this threat on one side with awareness creation among those involved and on the other formulate mitigatory actions in general and in the event of a spill. Finding a solution to oil pollution at sea is vital importance to Sri Lanka especially considering the heavy marine traffic on her Southern shores.

Oil pollution is either accidental or deliberate. Since Sri Lanka being an island and with a larger number of oil tankers and other ships sailing through her waters and a fairly large fishing community utilizing mechanized boats the risk of oil pollution is very high. Oil is extremely bad for the marine environment. Oil exposure damages animal fur and feathers so they cannot stay warm and many of these oiled animals will die by freezing to death. Other problems include accidental poisoning by ingesting oil, blindness from oil exposure, liver damage and other disabilities.

There are many different types of equipment and methods in cleaning up oil pollution. Biological oil agents help break down the oil so it degrades faster and do less damage to the environment. Oil booms and absorbents assist in containment and absorption of spilled oil. Skimmers skim the surface oils in an oil spill while gelling agents react with oil to form solids which can be cleaned up by suction equipment and so forth. Dispersants break oil into droplets where they will do less harm to other organisms. The last method of oil spill cleanup is elbow grease. This method involves people physically cleaning the shores with high pressure water hoses, cleaning oil animals and so forth. Physically cleaning oil on shores is time consuming and very expensive and it can also damage the shoreline further by killing and disturbing any animals left alive after the spill. All these methods require equipment and other resources.

b. Flood Response:

Sri Lanka faces flood situations annually and a significant number of persons suffer from such both in terms of life and property. Being exposed to number of various categories of floods, Sri Lanka is yet to handle this situation effectively. SLN has been involved in the process of assisting the Government during such situations by utilizing its available manpower and resources. Sri Lanka Navy has been playing an active and efficient role in the past flood situations in the country to date

with limited resources available. Sri Lanka Navy is in need of the identified resources like dinghies, outboard motors in addition to the resources available.

c. Search and Rescue (SAR) at sea:

Sri Lanka being the commercial hub in South East Asia, many ships plying between international ports pass through its waters, and due to heavy maritime traffic these ships are vulnerable to maritime accidents. Further due to the large number of fishing vessels operated without adequate safety and proper communication facilities, SAR operations becomes frequently necessary. Sri Lanka Navy is the organization responsible for assisting SAR in and around Sri Lankan waters and due to non availability of dedicated vessels / craft for the above purpose in other organizations, Offshore Patrol Vessels and Fast Gun Boats of the Sri Lanka Navy being utilized at present for the SAR missions is subject to operational availability and deployment. Also Sri Lanka has to meet her international treaty obligations within the assigned SAR regions. Once an emergency/ distress call is received by SLN or informed of such by the Maritime Rescue Coordinating Center, units that could be released from deployment are dispatched to render assistance. However, extending assistance in such situations depends upon the capabilities and the endurance of sea units. For rescue services within closer ranges and needing immediate attention, Fast Attack Craft of the SLN are utilized. Further the assistance of SLAF could also be obtained if such units are available; especially in sea areas close ashore.

Objectives:

- To reduce the hazardous situation arising from Oil Pollution and to prevent such taking disastrous proportions in future as well as to mitigate the consequences of a major spill
- To reduce the effects of floods arising from both man made and natural reasons and to prevent human and material damages
- To sustain a viable SAR operation / assistance to the needy within the allocated region.

Time frame of implementation:

2006 – 2015 short / medium and long term.

Geographical area of implementation:

Oil Spill Prevention and SAR at Sea: Stage I – Territorial waters, Contiguous zone, Stage II – EEZ
Flood Response: Ratnapura, Kalutara, Galle, Matara, Polonnaruwa, Hambantota, Ampara districts

Activities:

Oil Spill Prevention: Stage I (2006-2010)

- Assessment/ survey and types of pollution and the area
- Purchase of 04 patrol boats
- Purchase of 02 Adsorbent rolls RP 18

- Purchase of 02 oil spill response units
- Purchase of 02 Skimmers each (Folex TDS 200 and Folex TDS 250)
- Purchase of 02 inflatable oil booms

Oil Spill Prevention: Stage II (2011-2015)

- Purchase of 02 oil spill vessels
- Purchase of 01 search & rescue vessel
- Purchase of 04 response vessels

Floods Response:

- Purchase of 20 x Rubber Floatable Dinghies, and 20 outboard motors

SAR at Sea: Stage I (2006-2010)

- Purchase of 04 Response boats
- Purchase of 01 SAR vessel

SAR at Sea: Stage II (2011-2015)

- Purchase of 01 additional SAR vessel
- Purchase of 02 additional response boats

Out put:

- To formulate preventive methods as well as responses, mitigatory capability in the areas of interest in a phased out manner
- Enhanced floods response capabilities of the SL Navy
- Enhancement of SAR capabilities in the region.

Budget:

Year 1-2 (2006 – 2007)	- SLR 1560 million (USD 15.6 million)
Year 3-5 (2008 – 2010)	- SLR 2750 million (USD 27.5 million)
Year 6-10 (2011 – 2015)	- SLR 4500 million (USD 45.0 million)
Total budget	- SLR 8810 million (USD 88.1 million)

Funding status

International / Local Funds

Contact persons in lead and participating agencies:

Director General, DMC, Director Naval Operations – SLN, SLN representative to MPPA, Chairman – MPPA, Director Operations – SLPA, Provincial Councils, Local Authorities; Sri Lanka Coast Guard (SLCG), Sri Lanka Ports Authority (SLPA), Director General – Department of Fisheries & Aquatic Resources

PR-17

Provision of Aircraft for Disaster Management Operations and Activities

Agencies involved:

Sri Lanka Air Force (SLAF), DMC

Background and rationale:

It is the very nature of natural and man-made disasters, accidents and incidents that they strike with little or no warning. Often the disaster itself creates a situation, which makes its management difficult or sometimes near impossible except by experts who have been especially trained for and equipped. In this context, it has been repeatedly proven around the world that it is the personnel of the defence forces who are best geared, physically, psychologically and materially to handle emergency situations of any nature. In a more specialized sense, the Air Force can play a significant role in any national disaster management effort since it alone has the potential of being able to reach almost any location, even in conditions where the disaster has rendered normal approach routes non-usable, for example a flood situation or landslide. This freedom of movement enables the Air Force to carry out Search And Rescue (SAR) missions, convey rescue personnel, aid workers; supplies etc into affected areas and evacuate affected people much faster.

Even though, at present, the SLAF is not sufficiently equipped to handle disasters of large magnitudes without impeding its operational efficiency, with the existing fleet of aircraft and equipment. In this context, the SLAF is compelled to seek assistance from external sources as done in the past during major floods in 2003 and Tsunami relief work in 2004/2005. Therefore, if it is necessary to enhance similar capabilities of the SLAF to a degree where the organization would be in a position to handle such situations on its own, and therefore it would be essential to procure additional helicopters and equipment in sufficient numbers. However, the budgetary allocations made annually to the SLAF would be grossly insufficient to meet such demands. Hence, if the Ministry of Disaster Management could provide these aircraft and equipment, the SLAF could absorb them into its inventory and maintain the same in order to use whenever a requirement arises. This will be a dedicated user operation.

Objective:

To establish sound search and rescue units in the SLAF to undertake any kind of disaster relief measures.

Time frame of implementation:

Year 1-2 (2006-2008) - Short and Medium term

Geographical area of implementation:

The Entire Country (Aircraft and main rescue equipment can be based with the Air Force, while other equipments could be placed with the Colombo Fire Services)

Activities:

- a. Short-term procurement: Helicopters, Main Rescue Equipment, Medical Equipment, Personnel Rescue Gear, Communication Equipment (Detailed Information can be provided)
- b. Medium-term procurement: Helicopters, Main Rescue Equipment, Personnel Rescue Gear, Communication Equipment (Detailed Information can be provided)

Output:

Helicopters will be placed along with the SLAF helicopters, and furthermore, same helicopters could be utilised for commercial purposes on charter flights during normalcy to generate an income to the government, thus ensuring optimum usage of these assets.

Budget:

Year 1-2 (2006-2007) - SLR 2600 million (USD 26.0 mi)
Year 3-5 (2008-2010) - SLR 1200 million (USD 12.0 mi)
Total Budget - SLR 3800 million (USD 38.0 mi)

Funding status:

Local / International Funds Required.

Contact persons in lead and participating agencies:

DMC, Commander of Sri Lanka Air Force

Chapter 6

Mitigation and Integration of DRR into Development Planning

6.1 Key Issues

The aim of a mitigation strategy is to reduce losses in the event of potential hazard occurrences. The primary aim is to reduce the risk of death and injury to the population. Secondary aims include reducing damage and economic losses to public sector infrastructure and reducing private sector losses in as far as they are likely to affect the community as a whole. The objectives are likely to include encouraging people to protect themselves as far as possible.

Any mitigation strategy is likely to include a range of measures. A set of actions that includes some engineering measures, some spatial planning, and a degree of economic, management and societal inputs will be needed to bring about effective mitigation. A mitigation programme that concentrates solely on any one of these five aspects will be unbalanced and is unlikely to achieve its aims.

Disaster mitigation investment has to be seen in terms of the price of protecting existing and future infrastructure. Spending a bit more on a new facility to build it a little stronger and protect it against a future threat is usually seen as prudent. The level of investment that is justified to protect society, its economic activities and its built environment is a matter of political decision making, and the economics of risk. Decision making on appropriate levels of investment in disaster mitigation depends on the likelihood of occurrence of the hazard, and assessing the impact if it does occur. The costs and benefits of alternative investment strategies need to be carefully evaluated. A systematic framework of risk assessment to establish which hazards are most likely to occur and their probable effects, will help define the priorities of mitigation programmes.

6.2 Strategy

In order to mitigate disasters and integrate DRR into development plans, identified activities are categorized into five main areas after consultations:

- Organisational and legal interventions
- Demonstration projects
- Physical interventions through projects and programmes
- Research and development
- Awareness and training programmes

Activities proposed under the area of organisational and legal interventions are: the establishment of DRM committees; the development, regular review and update of DRM plans; and the development and review of guidelines, bylaws, regulations, procedures etc. to include DRM (mitigation) aspects.

There is a need to review the by-laws and approval procedures of local governments to reduce inappropriate construction and land use practices in hazard prone areas. Physical interventions through projects would include the implementation of Coastal Management Plan in 15 identified locations in coastal areas to minimise coastal erosion; implementation of dam safety programmes to mitigate floods and minimise damages in the downstream of dams; construction of upstream reservoirs across three major rivers, Kalu Ganga, Kelani Ganga and Nilwala Ganga; and the introduction of drought tolerant agricultural methods including micro irrigation facilities, seeds etc in drought prone areas.

Landslides often take place in mountainous regions, and in urban areas in particular, due to wrong practices, unavailability of retaining structures, cutting and filling operations etc. The demonstration projects can be implemented to showcase appropriate practices and also to train artisans and technicians in relevant construction techniques. In order to achieve the above, there is a need to undertake research activities through universities and other institutes to arrive at the most suitable methods of stabilising landslide prone areas and genetic engineering research to develop drought resistant seeds. Training and awareness programmes will also be conducted to achieve the outlined objectives.

In view of the above strategy, the projects prioritised for the next 10 years under this component entail:

Review and revise the building approval procedures adopted by local government agencies to reduce the impact of natural disaster events.

Integrate disaster risk mitigation into development processes through disaster mitigation plans, and specific allocation for mitigation in all development budgets.

Mitigate impact of drought and reduce drought risk through improved seed materials and introduction of micro-irrigation.

Mitigate impact of landslides and reduce risk through improvements and recommendations for structural mitigation.

Protect against and control floods through improvements and new protection systems.

- Reduce disaster risk in all physical planning processes by integrating DRR in decision making on national land use and physical planning policies.

Protect against storm surges/ sea/ coastal flooding through green belt and incorporation of disaster risk considerations in coastal zone management.

Increase disaster resilience in housing and other critical infrastructure through revisions in building codes and bylaws

Reduce dam-related hazard risks through appropriate dam safety regulations.

The following projects will be prioritised in the short to medium term:

Minimise Loss of Life and Property Damage due to Floods

This project will be executed in major cities and villages in the downstream of Kalu Ganga in order to adequately protect Ratnapura and Kalutara districts from floods.

Mitigate and Stabilise Slopes in High Risk Landslide and Rockfall Sites

The objective is to stabilise rockfall and landslide sites from Haldumulla to Haputale and Kahagolla to Haputale respectively.

6.3 Project Proposals

The following projects will be prioritised in the short to medium term for Mitigation and Integration of DRR into Development Planning:

- M-1 Mitigation and Stabilisation of Slopes in High Risk Landslide and Rock Fall Sites
- M-2 Flood Protection of Major Cities in Kalu Ganga Basin
- M-3 Disaster Mitigation Action Plans
- M-4 Integrating DIA into All Development Plans
 - M-4.1 Integrate Disaster Impact Assessment (DIA) into Development Projects
 - M-4.2 Structural Provisions for Mainstreaming DRM as a Component of Development
- M-5 National Land Use & Physical Planning Policy
- M-6 Coastal Zone Management
 - M-6.1 Integration of Disaster Risk Considerations in Coastal Zone Management (CZM) Plan
 - M-6.2 Natural Barrier along the Coast
- M-7 Development Controls, Building Bye-laws
- M-8 Housing, Education, Tourism, Infrastructure Facilities
 - M-8.1 Mitigation Measures in Housing Schemes, Industrial Estates, Tourist Hotels

- M-8.2 Reducing Disaster Risk Vulnerability of High Voltage Towers, Communication Towers
- M-8.3 Planning and Construction of Schools and Hospitals in hazard prone areas to higher standards of hazard resilience
- M-8.4 Reducing Disaster Risk Vulnerability around Gas, Fuel and Chemical Storage Facilities
- M-8.5 Providing Safer Critical Infrastructure in Hazard Prone Areas
- M-9 Drought Mitigation in Select Districts
- M-10 Enhancing Dam Safety
- M-11 Risk Transfer Mechanisms
- M-12 Research and Development in Disaster Risk Reduction
- M-13 Reducing Health Risk due to Polluted Ground Water
- M-14 Construction of By-pass Road Down-stream of Kantale Dam
- M-15 Drinking Water for Drought Affected Divisions of Hambantota District and other districts through Desalinisation
- M-16 Provision of Incinerators as a Solution to Solid Waste Disposal Problem

M-1**Mitigation and Stabilisation of Slopes in High Risk Landslide and Rock Fall Sites****Agencies involved:**

NBRO, Divisional Secretariat (DS), PC, LA, Road Development Authority (RDA), DMC

Background and rationale:

Landslides and rock falls are experienced frequently in Haputale area especially near Haldumulla and Kahagolla. Certain mitigation activities were implemented at Haldumulla to divert water away from landslide sites. However more rock fall site and landslide sites were identified subsequently. These areas need to be stabilised urgently to make the main highway from Colombo to Badulla safer for traffic. In addition, several other sites in the 10 landslide-prone districts have to be identified and mitigation undertaken.

Objectives:

To stabilise rockfall, landslide sites from Haldumulla to Haputale and Kahagolla to Haputale respectively; to mitigate and stabilise slopes in other high & moderate landslide areas.

Time frame of implementation:

Year 1-5 (2006-2010) - Short and Medium-term

Geographical area of implementation:

Haputale area in Uva Province; landslide prone areas of Badulla, Nuwara Eliya, Ratnapura, Kegalle, Kandy, Matale, Kalutara, Galle, Matara and Hambantota districts.

Activities:

Year 1-2 (2006-2007)

Identification of landslide prone sites for mitigation

Risk assessment in rock fall site at Haldumulla and landslide site at Kahagolla

Identification of design slope stabilisation structures and methods

Year 3-5 (2008-2010)

Construction of mitigation structures and implementation of methods

Outputs:

Road safety improved by preventing rockfalls and minimize landslides at Haputale area

Areas (slopes) categorized as moderate and high risk zones (landslides, slope failures, rock fall) stabilized

Budget:

Year 1-2 (2006-2007) - SLR 44 million(USD 0.44 mi)

Year 3-5 (2008-2010) - SLR 300 million(USD 3.0 mi)

Total Budget - SLR 344 million (USD 3.44 mi)

Funding status:

Local / International Funds Required.

Contact persons in lead and participating agencies:

Head, Landslide and Service Division NBRO
Director General, Disaster Management Centre

M-2**Flood Protection of Major Cities in Kalu Ganga Basin****Agencies involved:**

Irrigation Department, CEB, Department of Lands, DS

Background and rationale:

Kalu Ganga is the second largest river in Sri Lanka. It drains 2600 square kilometres entirely in the wet zone of the country. Some areas in the upper Kalu Ganga basin receive annual rainfall in excess of 5000 mm. These storms often result in floods in the basin causing damages to property and life. Several studies have been conducted in the past to develop water resources paying special attention to flood control. Preliminary studies have been conducted and flood control schemes have been found to be economically feasible as the damages from the floods are on the increase with development of the river basin and the annual relief provided by the government has increased substantially.

The proposal is to implement a flood protection scheme with the proposed Malawaa Reservoir/dam is to be constructed at Gilmale village, 6 km upstream of Ratnapura town.

Objectives:

To mitigate flood damages and loss of lives in down stream Kalu Ganga by implementing a flood control scheme

Time frame of implementation:

Year 3-10 (2008- 2015) - Medium and Long term

Geographical area of implementation:

Ratnapura district

Activities:

Year 1-3 (2008-2010)

Design and documentation of mitigation structures in Kalu Ganga; study to identify options to mitigate floods in rivers

Year 6-10 (2011-2015)

Construction of mitigation structures in Kalu Ganga

Output:

Flood-protection structures: creation of a reservoir to store flood water, production of energy 111 Gwh annually. Number of families benefited will be 5000.

Budget:

Year 1-3 (2008-2010)	- SLR 550 million(USD 5.5 mi)
Year 4-8 (2011-2014)	- SLR 8040 million(USD 80.4 mi)
Total Budget	- SLR 8590 million (USD 85.9 mi)

Funding status:

Local / International Funds Required.

Contact persons in lead and participating agencies:

Director (PD &SS),
Irrigation Department.
Director General, Disaster Management Centre

M-3**Disaster Mitigation Action Plans****Agencies involved:**

DMC, District/ Divisional Secretaries, PCs and LAs	- (Activities a, b)
Material Development & Training Unit (MDTU) with DMC	- (Activity c);
Sri Lanka Institute of Local Governance (SLILG),	
Provincial Council Local Government (PCLG), UDA, DMC, selected LAs	- (Activity d);
National Physical Planning Department (NPPD)	- (Activity e);
PCs, LAs, with DMC	- (Activity f);
DS, Urban Development Authority (UDA), NPPD, SLLRDC,	
Landuse Planning Division, Water Resources Board (WRB), ID, LA	- (Activity g);
DRM Committee	- (Activity h)

Background and rationale:

Till date, government and NGOs have reacted to disasters by providing relief to affected populations without adopting a proactive approach and implementing mitigation measures. Disasters were considered to be natural phenomena and low priority was given in releasing funds for mitigation work. Enforcement of existing regulations, which could minimise the effect of disasters to some extent, was weak. Officers at provincial and local levels were poorly informed of the nature of disasters effecting the area and actions to be taken to minimise the effect. DRR activities were not included in provincial and local development plans. These measures were not regularly reviewed/ monitored by competent groups at Provincial/Local levels.

This necessitates the development of Disaster Mitigation action Plans at all levels of government (Provincial Councils, Local Authorities and all public sector Institutions, for systematic mitigatory actions to be taken. These should be regularly updated and implemented.

Objectives:

Integrating disaster risk mitigation actions into development plans, ensuring fund for implementation of mitigations activities in development projects and developing, monitoring and regularly updating disaster management plans.

Time frame of implementation:

Year 1- 5 (2006- 2010) - Short and Medium term

Geographical area of implementation:

Phase I	All coastal districts
Phase II	Central hills, Uva and Sabaragamuwa Provinces
Phase III	All other Provinces

Activities:

Year 1-2 (2006-2007)

- a. Establishment of DRM committees at all levels
- b. Develop a methodology to prepare DRM plans
- c. Conduct awareness programme for Heads other relevant officers of Institutions & organizations
- d. Develop and Review regulations, byelaws and approval procedure relating to all development projects and introduce appropriate disaster reduction measures
- e. Integrate mitigation budget line item in annual budget of all governments (initially preferably to have 5% of the annual budget allocated for mitigation interventions)

Year 3-5 (2008-2010)

- f. Develop & implement DRM (mitigation) plans considering multi-hazard environment
- g. Develop guidelines to Integrate risk management options in land use plans
- h. DRM plans reviewed and revised with feedbacks once a year

Output:

DRM Programmes/Plans and Projects developed and implemented to mitigate the disaster in LAs and PC areas

Budget:

Year 1-2 (2006-2007)-	SLR 3.9 million(USD 0.039 mi)
Year 3-5 (2008-2010)-	SLR 1.5 million(USD 0.015 mi)
Total Budget	- SLR 5.4 million (USD 0.054 mi)

Funding status:

Local / International Funds Required.

Contact persons in lead and participating agencies:

Director General, Disaster Management Centre

Chief Secretaries-Provincial Councils- Management Development Training Unit (MDTU)

M-4.1**Integration of Disaster Impact Assessment (DIA) into Development Projects****Agencies involved:**

DMC, CEA, NBRO, UDA, Project Approving Agencies	-(Activity a)
UDA, CEA, DMC, NBRO, ITI, Universities, project approving agencies	-(Activity b,c)
Centre for Housing Planning Building (CHPB), MDTU, SLILG, SLIDA, DMC, CEA	-(Activity d,f)
PC, DS	-(Activity e);
NBRO, ID, Survey Dept	-(Activity g);

Background and rationale:

At present, impact of a project on the environment is considered through a well-established Environment Impact Assessment (EIA) process. However the impact of the same project on life and properties is not assessed properly and mitigation measures are not identified. Conducting disaster impact assessment (DIA) should be made mandatory for specified development projects as in the case of EIA. In order to minimise delays in the approval process, criteria for undertaking DIA could be included in the EIA process.

Objectives:

To assess disaster risk of specified projects at the formulation stages so as to minimise possibility of increased disaster risk after implementation of development project

Time frame of implementation:

Year 1-5 (2006-2010) - Short and Medium term

Geographical area of implementation:

The entire country

Activities:

Year 1-2 (2006-2007)

- Prepare guidelines to categorise development projects that need to undertake DIA
- Development of guidelines for integrating disaster risk impact assessment into planning & approval process of all Development projects
- Establish procedures for project approval following DIA and incorporating reduction measures.
- Capacity building of the personnel involved in project formulation, assessment and approval.

- e. Implement DIA in the EIA process for selected projects with effect from July 2006

Year 3-5 (2008-2010)

- f. Capacity building of the personnel involved in project formulation, assessment and approval.
- g. Demarcate and publish in the gazette hazard prone areas, reservations, boundaries of rivers, land with steep slopes and landslide effected areas

Output:

- i. Procedure in place for integrating DIA into approval process of specified projects
- ii. Guidelines developed to categorise projects needing DIA
- iii. Hazard prone areas, reservations, boundaries of rivers, and land with steep slopes and landslide affected areas identified as special areas and published in the gazette
- iv. A total of 1250 persons trained in the DIA integration process.

Budget:

Year 1-2 (2006-2007)- SLR 29.0 million(USD 0.29 mi)

Year 3-5 (2008-2010) - SLR 0.80 million (USD 0.008 mi)

Total Budget - SLR 29.80 million (USD 0.298 mi)

Funding status:

Local / International Funds Required.

Contact persons in lead and participating agencies:

Director General, Disaster Management Centre

M-4.2**Structural Provisions for Mainstreaming DRM as a Component of Development****Agencies Involved:**

NPPD, DMC

Background and rationale:

With the Disaster Impact Assessment (DIA) included in the EIA process towards minimising delays in the approval process, it is necessary to ensure that structural provisions are established for mainstreaming risk management as a component of development.

Objectives:

To establish structural provisions for mainstreaming risk management as a component of development

Time frame of implementation:

Year 3-5 (2008-2010) Medium term

Geographical area of implementation:

The entire country

Activities:

- i. Discussions with the Department of National Planning and plan implementation.
- ii. Provide necessary information (such as Road map for disaster management and mile stones to be achieved under the National DRM plan (S)

Outputs:

DRR sector/cluster is established in the national and regional development plans

Budget:

Funding not required

Funding status :

Funding not required

Contact in lead and participating agencies

Disaster Management Centre - Director General

Department of National Planning and Plan Implementation under Ministry of Finance

M-5**National Land Use and Physical Planning Policy****Agencies involved:**

DMC , NPPD, Land Use Planning Division, UDA	- (Activity a)
UDA , NPPD, DMC, University, PC, LA	- (Activity b)
SLILG , CHPB , MDTU , UDA, NPPD, LA	- (Activity c)
MDTU , UDA , NPPD , SLLRDC, NPPD, UDA, LA, DMC, ID, PC, DS	- (Activity d)
UDA , NBRO, ID, LA, PC , NPPD	- (Activity e)

Background and rationale:

Land Use Planning Division of DS is responsible for the formulation of land use policy of the area under its jurisdiction, UDA has to prepare urban development plans for urban centres declared under the UDA act. In all the other areas physical development plans are prepared by NPPD. UDA with the assistance of Sri Lanka Urban Multi-hazard Disaster Management Project developed guidelines to incorporate DRM in the preparation of Urban Development Plans. This was implemented at one of the municipal councils on pilot basis. Development of urban plans for many LA are in drafting stages, therefore DM concerns could be incorporated before publishing in the gazette. Capacity of Planning Officers in Divisional Secretariats also has to be improved to incorporate DM in the development of land use policy.

Objective:

To minimise loss of lives and damages to property by incorporating disaster risk considerations in national land use policy and in physical development planning process.
Integrate disaster risk considerations into national land use policy and physical planning policy

Time frame of implementation:

Year 1-5 (2006-2010) Short and Medium term

Geographical area of implementation:

The entire country and as priority in 7 selected districts prone to landslides and floods

Activities:

Year 1-2 (2006-2007)

- a. Discussions with the departments of National Physical Planning and Land use Planning under Ministry of Policy Planning,

- b. Development of physical planning policy and guidelines to integrate DRM into preparation of structure plans, urban land use plans etc.

Year 3-5 (2008-2010)

- c. Train Planning Officers and other relevant personnel to integrate DRM in to preparation of structure plans, urban land use plans etc.
- d. Develop a structure plan incorporating DRR as a pilot project in 7 districts prone to natural disasters.
- e. Develop 20 Urban plans incorporating DRR as a pilot project in 7 districts prone to landslides and floods.

Output:

1. Concept of DRM is incorporated into land use policy.
2. Guidelines to incorporate disaster risk mitigation activities in Physical Development planning process in place
3. Structure plans in 7 districts and urban development plans in 20 local authorities completed
4. 350 officers trained

Budget:

Year 1-2 (2006-2007)	- SLR 4 million (USD 0.04 mi)
Year 3-5 (2008-2010)	- SLR 15 million (USD 0.15 mi)
Total Budget	- SLR 19 million (USD 0.19 mi)

Funding status:

Local / International Funds Required.

Contact persons in lead and participating agencies:

Director General, Disaster Management Centre

Director General - National Physical Planning Department

M-6.1

Integration of Disaster Risk Considerations in Coastal Zone Management (CZM) plan

Agencies involved:

Coast Conservation Department (CCD), DMC	- (Activity a);
CCD, Dept. of Fisheries and Aquatic Resources, PCs, LAs	- (Activity b)
CCD, Ministry of Fisheries, NARA, LAs, PCs	- (Activity c);

Background and rationale:

The CZM Plan was prepared in 2004 and it has been revised after the Tsunami. The December 2004 tsunami has reiterated the need to integrate disaster risk considerations in CZM policy and in decision making.

Objectives:

To implement Priority Risk Management Projects under CZM plan 2004 with considerations on reduction of impact of coastal hazards in 15 locations

Time frame of implementation:

Year 1-5 (2006-2010) - Short and Medium term

Geographical area of implementation:

The Entire Coastal Belt

Activities:

Year 1-2 (2006-2007)

- a. Discussions with the CCD and other stakeholder organizations such as NARA, fisheries department etc
- b. Development of CZM policy with considerations on reduction of impact of coastal hazards through a consultative process with other stakeholders

Year 3-5 (2008-2010)

- c. Implementation of identified Disaster Management activities in Coastal Zone management Plan

Output:

Disaster risk considerations integrated in CZM Policy and in decision making
Priority Risk Management Projects under CZM plan 2004 with considerations on reduction of impact of coastal hazards implemented
CZM plans implemented in 15 locations

Budget:

Year 1-2 (2006-2007)- SLR 10 million (USD 0.1 mi)
Year 3-5 (2008-2010) - SLR 300 million (USD 3.0 mi)
Total Budget - SLR 310 million (USD 3.1 mi)

Funding status:

Local / International Funds Required.

Contact persons in lead and participating agencies:

Director- CCD; Director General- DMC

M-6.2**Natural Barrier along the Coast****Agencies involved:**

Ministry of Fisheries and Aquatic Resources (M/FAR), CCD, DMC	- (Activities a,j);
CCD, PC, LA, NGOs, Police	- (Activity b)
CCD, PIU, CBOs, LA	- (Activity c);
CCD, Agricultural Dept., Forest Dept, CBOs	- (Activity d);
CCD, PIU, DS	- (Activity e);
CBOs, NGOs, PS	- (Activities f,h);
CCD	- (Activities g,i)

Background and rationale:

Coastal areas are very dynamic and complex environments, subject to continuously changing biophysical conditions. As a result of these changing conditions coastal areas are subject to natural forces which cause maximum damages to socio-economic and ecological properties. The impact of coastal erosion is most severe along the Western and Southern coast of Sri Lanka. Establishment of vegetation belt as a soft solution has been tested in several places and has proved to be an effective mitigation action against sea erosion, and the destruction caused by tsunamis, as well as improving the scenic beauty of the coast.

Objectives:

To increase the protection of the shoreline against coastal erosion, protection of human lives and properties against natural hazards such as tsunami and to preserve the scenic beauty of coastal environment.

Time frame of implementation:

Year 1-5 (2006-2010) - Short and Medium term

Geographical area of implementation:

Selected coastal area in the Southern and Western coasts

Activities:

Year 1-2 (2006-2007)

- a. Setting up of a project steering committee and a technical committee
- b. Create awareness among relevant stakeholders including government agencies, NGOs and communities
- c. Identify worst affected sites suitable for establishment of a green belt
- d. Selection of suitable plant material, establishment and maintenance of plant nurseries
- e. Identify partner organisations and implementation mechanism
- f. Implementation of planting programme and maintenance
- g. Training of staff on new methods and experience sharing

Year 3-5 (2008-2010)

- h. Implementation of planting programme and maintenance
- i. Training of staff on new methods and experience sharing
- j. Monitoring and supervision

Output:

Coastline protected and trees are planted in an area of 1000 ha of affected coast

Budget:

Year 1-2 (2006-2007)	- SLR 40 million (USD 0.4 mi)
Year 3-5 (2008-2010)	- SLR 60 million (USD 0.6 mi)
Total Budget	- SLR 100 million (USD 1.0mi)

Funding status:

Local / International Funds Required.

Contact persons in lead and participating agencies:

Secretary - Ministry of Fisheries and Aquatic Resources

Director- Coast Conservation Department

Director General- Disaster Management Centre

M-7**Development Controls, Building Bye-laws****Agencies involved:**

DMC, UDA, NHDA, CHPB, Universities, NBRO, IESL, IASL, CECB, GSMB, Building Department- (Activity a); **Expert Group**- (Activity b); Ministry of Provincial Councils, PC, LA, **SLILG**, PCLG, DMC - (Activity c); **MDTU**, **SLILG**, DMC- (Activity d); **PC**, **SLILG**, DMC- (Activity e)

Background and rationale:

Any individual or organisation proposing to construct houses or undertake development activity within the urban area declared under UDA act is required to submit a building application certified by a qualified person and obtain approval of LA before commencing construction work. The building application covers merely the planning and health aspects and not the structural safety of the building. Design inputs for the safety of buildings are not obtained at any stage of construction. Outside UDA declared areas no approval is required. LAs have the power to remove any building adjoining a street if it is a threat to public safety.

Areas prone to disaster should be categorized and marked in plans, and people should be made aware of the danger in constructing houses in these areas. Simple guide lines for construction of houses in areas affected by tsunami, landslides, floods, cyclones and lightning strikes were developed by various institutions. These guidelines have to be reviewed/developed to cover all disasters and made available to public to minimize the impact of a disaster to buildings.

Objective:

To increase disaster resilience through safer housing construction in hazard prone areas

Time frame of implementation:

Year 1-5 (2006-2010) Short and Medium-term

Geographical area of implementation:

Stage I. LAs declared under UDA act and prone to disaster

Stage II. LAs in coastal areas of Western, Southern, Eastern and Northern Provinces.

Stage III. In other LAs prone to disasters

Activities:

Year 1-2 (2006-2007)

- a. Formation of an expert group
- b. Develop or introduce revisions to building codes/guidelines for construction in hazard prone areas
- c. Study the existing bye-laws in LG sector and introduce revisions for construction in hazard prone areas and strategies for effective enforcement.

Year 3-5 (2008-2010)

- d. Train Technical Officers in LAs on the use of technical guidelines
- e. Undertake public awareness programmes through newspaper advertisements, Radio and TV interviews

Output:

Building codes/guidelines to increase hazard resilience; Revised by-laws in LG Sector and PCs to increase hazard resilience and enforcement capability

Budget:

Year 1-2 (2006-2007)	- SLR 1.5 million (USD 0.015 mi)
Year 3-5 (2008-2010)	- SLR 1.5 million (USD 0.015mi)
Total Budget	- SLR 3.0 million (USD 0.030 mi)

Funding status:

Local / International Funds Required.

Contact persons in lead and participating agencies:

Chairman - Urban Development Authority

Director - Sri Lanka Institute of Local Government

Director General- Disaster Management Centre

M-8

Housing, Education, Tourism, Infrastructure Facilities

M-8.1 Mitigation Measures in Housing Schemes, Industrial Estates, Tourist Hotels

Agencies Involved

DMC, Ministry of Disaster Management & Human Rights, Ministry of Housing & Construction, NHDA, UDA, Ministry of Industries, Tourist Board, Banks, NPPD, Board of Investment (BOI), IDB, CHPB, IESL, SLIA

Background and rationale

It was observed that reinforced concrete structures of most buildings have survived the devastating tsunami waves on 26.12.2004 but not the partition walls. In the absence of a Sri Lankan Codes of Practice, all structures are designed following British Code of Practice and in some cases, Australian or Indian codes. Design guidelines/criteria specified for different hazard and intensities may need to be given to designers.

Further, all critical infrastructures must be designed to a given level of safety from disaster impact. While some such guidelines are already available, areas not covered under them are being reviewed presently and action taken. Shortly, DMC will take steps through UDA to include these in UDA Regulations and the NPPD regional structure plans. Such information must be provided to designers and an adequate monitoring system be in place.

Objectives:

To reduce disaster vulnerability by adopting mitigation measures in planning and construction of government housing schemes, industrial estates, and tourist hotel.

Time frame of implementation:

Year 1-5 (2006-2010) - Short and Medium term

Geographical area of implementation:

National level

Activities:

- i. Implementation of guidelines and codes for hazard resistant construction for government housing scheme, industrial estates, tourist hotels etc.
- ii. Develop and introduce incentive programme for private housing
- iii. Technical and financial support to construct housing schemes, industrial estates, tourist hotels etc. to higher standard of hazard resilience
- iv. Conduct training programme for Engineers, Planners & Technical Officers on the use of planning and building guidelines

Outputs:

Programme for planning and construction of housing schemes, industrial estates, tourist hotels, by state and private sector in hazard prone areas to higher standard of hazard resilience

Budget:

Year 1-2 (2006-2007)	- SLR 160 million (USD 1.6 mi)
Year 3-5 (2008-2010)	- SLR 100 million (USD 1.0 mi)
Total Budget	- SLR 260 million (USD 2.6 mi)

Funding status :

Local & International Funding Required

Contact in lead and participating agencies

Ministry of Disaster Management & Human Rights- Secretary
Disaster Management Centre - Director General

Other Participating Agencies:

Ministry of Housing & Construction, NHDA, UDA, Ministry of Industries, Tourist Board, Banks, NPPD, Board of Investment (BOI), IDB, CHPB, IESL, SLIA

M-8.2 Reducing Disaster Risk Vulnerability of High Voltage Towers, Communication Towers

Agencies involved:

DMC, Ministry of Disaster Management & Human Rights, Telecom Regulatory Commission (TRC), Ministry of Power & Energy, Ministry of Information, UDA, CEB, LAs, Telecommunication Agencies, NPPD

Background and rationale:

All critical infrastructures must be designed to a given level of safety from disaster impact. Such guidelines must be provided to designers and adequate monitoring system be in place.

Objectives:

To reduce disaster risk vulnerability by adopting mitigation measures in planning and construction of high voltage towers, communication towers etc.

Time frame of implementation:

Year 1-2 (2006-2007) - Short term

Geographical area of implementation:

National level

Activities:

- a. Development of planning and construction guide lines, for the construction of hazard resistant High Voltage towers, communication towers in hazard prone areas
- b. Conduct training programme for Engineers, Planners & Technical Officers on the use of planning and construction guide lines
- c. Conduct awareness programmes for people including school children residing close high voltage towers, communication towers

Outputs:

Guidelines for planning and construction of high voltage towers, communication towers are developed and used

Budget:

Year 1-2 (2006-2007)	- SLR 3.5 million (USD 0.035 mi)
Total Budget	- SLR 3.5 million (USD 0.035 mi)

Funding status :

Local & International Funding Required

Contact in lead and participating agencies

M/DM &HR Secretary; DMC - Director General;

Other participating agencies:

Ministry of Information-Secretary; Ministry of Power & Energy- Secretary; CEB- Chairman
Telecommunications Agencies - Chief Executive Officers; TRC- Chairman

M-8.3

Planning and Construction of Schools and Hospitals in Hazard Prone Areas to Higher Standards Of Hazard Resilience

Agencies involved:

DMC, Ministry of Disaster Management; Ministry of Education, National and Provincial Health ministries, Dept. of Buildings, IESL, UDA, School Works Division, PCs, CHPB, Universities, Ministry of Housing & Construction

Background and rationale:

It was observed that reinforced concrete structures of most buildings have survived the devastating tsunami waves on 26.12.2004 but not the partition walls. In the absence of a Sri Lankan Codes of Practice all structures are designed following British Code of Practice and in some specific instances Australian or Indian codes. Design guidelines/criteria specified for different hazard and intensities may need to be given to designers.

Type plans for school buildings and hospitals will have to be reviewed/ redesigned to a high standard of safety. All public buildings constructed in hazard prone areas should be designed as evacuation centres, therefore should withstand certain intensity of hazard. Review has to undertaken by an Expert group representing Professional bodies, academics, practitioners, public and private sector originations engaged in design and construction of infrastructure.

Objectives:

To construct hospitals and schools in hazard prone areas to higher standard of hazard resilience.

Time frame of implementation:

Year 1-2 (2006-2007) - Short term

Geographical area of implementation:

National level

Activities:

- a. Implementation of guidelines and codes for hazard resistant construction for schools and hospitals
- b. Identify all new school and hospitals to be constructed in hazard prone areas
- c. Review standard plans & design for adequacy of construction. of school building and hospitals. Issue amended designs to relevant department and agencies.
- d. Conduct training programme for Engineers, Planners & Technical Officers on the use of Planning and building guidelines

Outputs:

Programme to construct school and hospital in hazard prone areas to higher standard of resilience

Budget:

Year 1-2 (2006-2007)	- SLR 1.4 million (USD 0.014 mi)
Total Budget	- SLR 1.4 million (USD 0.014 mi)

Funding status:

Local & International Funding Required

Contact in lead and participating agencies:

M/DM&HR- Secretary, DMC- Director General,
Ministry of Education- Secretary,
National and Provincial Ministries of Health - Secretary,
Ministry of Housing and Construction Secretary,
UDA- Chairman,
Provincial Council - Chief Secretary

M-8.4 Reducing Disaster Risk Vulnerability around Gas, Fuel and Chemical Storage Facilities

Agencies involved:

Ministry of Disaster Management & Human Rights, DMC; CPC, Shell Gas, Laugfs Gas, IOC Lanka, Ministry of Power & Energy, CEA, UDA

Background and rationale:

With the present rapid development it has become essential to review criteria used to assess the disaster risks around fuel, gas and chemical storage facilities, high voltage transmission towers, communication towers etc. with a view to reduce the risk vulnerability of communities around these installations. Equally important is to undertake disaster risk assessment and conduct awareness programme for residents close to these facilities.

Objectives:

To reduce the disaster risks, vulnerability around fuel, gas and chemical storage facilities.

Time frame of implementation:

Year 1-2 (2006-2007) - Short term

Geographical area of implementation:

National level

Activities:

- a. Formation of an Expert to cover different types of facilities
- b. Review safety precautions taken around fuel, gas storage facilities and precautionary measures adopted. Identify vulnerable areas near facilities.
- c. Conduct awareness programmes for people including school children residing close high voltage towers, communication towers, fuel, gas and chemical storage facilities to make them aware of risk and precaution to be taken

Outputs:

List of sites vulnerable to gas, fuel & chemical disasters are identified and listed. People are made aware of risks.

Budget:

Year 1-2 (2006-2007) - SLR 1.7 million (USD 0.017 mi)

Total Budget - SLR 1.7 million (USD 0.017 mi)

Funding status:

Local & International Funding Required

Contact in lead and participating agencies:

M/DM&HR- Secretary, DMC- Director General,
Ministry of Power & Energy - Secretary
CPC, Shell Gas, Laugfs Gas, IOC Lanka,
Ministry of Power & Energy, CEA, UDA

M-8.5

Providing Safer Critical Infrastructure in Hazard Prone Areas

Agencies involved:

M/DM&HR, DMC, Government sector institutions responsible for critical infrastructure development projects, IESL and professional bodies, PCs

Background and rationale:

In the past, disaster events have affected infrastructure facilities to varying extent. This results in people's suffering for lack of basic facilities and the responsible agencies too have to struggle to get the facilities back to normal functioning conditions. This points to the fact that all critical infrastructure facilities must be designed to a given level of safety from disaster impact. Such guidelines must be provided to designers and adequate monitoring system should be in place.

Objectives:

To increase disaster resilience through provision of safer critical infrastructure in hazard prone areas

Time frame of implementation:

Year 1-2 (2006-2007) - Short term

Year 3-5 (2008-2010) -Medium term

Geographical area of implementation:

National level

Activities:

- a. Formation of an Expert Group to cover different types of infrastructure
- b. Implementation of guidelines, codes for hazard resistant infrastructure construction
- c. Conduct training programme for the infrastructure facility providing agencies and the Engineers, Planners & Technical Officers on the use of guidelines
- d. Identify critical infrastructure to be provided in hazard prone areas
- e. Develop guidelines for construction of critical infrastructure in Hazard prone areas
- f. Review construction programmes to ensure adoption of hazard mitigation measures in all infrastructure development activities.

Outputs:

Disaster resilience of critical infrastructure in hazard prone areas ensured through use of planning and construction guidelines

Budget:

Year 1-2 (2006-2007) - SLR 30 million (USD 0.3 mi)

Total Budget - SLR 30 million (USD 0.3 mi)

Funding status:

Local & International Funding Required

Contact in lead and participating agencies:

M/DM&HR- Secretary, DMC- Director General,
Ministry of Power & Energy - Secretary,
CEB, ID, NWSDB, RDA, PRDA and
all other government sector institutions responsible for critical infrastructure

M-9**Drought Mitigation in Selected Districts****Agencies involved:**

Department of Agriculture (DoA), Universities	- (Activity a);
Agrarian Research Training Institute (ARTI), DoA, GA, DS	- (Activity b);
DoA , GA, DS	- (Activity c);
WRB , Farmer Organisation, DS, Agricultural Extension Office	- (Activity d);
DoA, GA, DS, National Planning Dept	- (Activity e);
DoA , Dept. of National Planning, DS, GN, Farmer Organizations	- (Activity f);
WRB , DMC- (Activity g); DoA, CBO, Farmer Organisations	- (Activity h);
Agricultural Extension Office, Farmer Organisations, NGO	- (Activity i);
DS, GA , WRB , LA, NGO	- (Activity j);
NGO , DS, GA, CBO, SLRCS	- (Activity k);

Background and rationale:

Farmers in drought prone areas largely depend on monsoonal rains to cultivate crops. Delayed sowing and use of low quality seeds lead to crop failures in most cases. Farmers in remote villages are the worst affected as they are unable to get quality seeds in time.

With the extensive use of artificial manure, organic content of the soil has reduced affecting its water retention capacity and resulting in rapid loss of water from the soil. When monsoon rains fail in consecutive years, water stored in tanks and reservoirs is not sufficient to meet the demand and over exploitation of ground water takes place. Farmers could be provided with technical and financial assistance to use various micro irrigation facilities for optimal utilization of the limited amount of water available. Methods of conserving water also need to be introduced and the farmers encouraged through financial assistance.

Keeping in mind that the demand for surface water is increasing, it is necessary to undertake research programmes to develop drought tolerant crops using latest technology such as genetic engineering. Conflict in water usage for irrigation and domestic purposes could be eased with the promotion of rain water harvesting and supply of drinking water using bowsers.

Objectives:

- To minimize crop failure by introducing and promoting distribution of quality seeds in to farmers in drought prone areas, especially in remote villages;
- To promote drought tolerant agriculture methods and make ground water assessment maps available

To promote soil rehabilitation programmes, and use of micro irrigation facilities in drought prone areas;

To improve the management of drinking water supply

Time frame of implementation:

Year 1- 10 (2006-2015) - Short, Medium and Long term

Geographical area of implementation:

Anuradapura, Polonnaruwa, Putlum, Kurunegala, Hambantota districts

Activities:

- a. To promote research to develop drought tolerant crops and research on genetic engineering
- b. Train extension officers to transfer the research findings to farmers
- c. Develop a procedure to obtain quality seeds to distribute to farmers in time
- d. Identify potential ground water sources in 500 villages in drought prone districts and promote ground water for irrigation
- e. Strengthen extension service to assist farmers in remote villages of drought prone districts and ensure better growth by providing quality seeds on time.
- f. Develop and implement a programme to encourage farmers through an incentive scheme to produce and apply organic manure to rejuvenate the soil, reduce moisture stress and thereby reduce the crop loss.
- g. Develop a scheme to provide micro irrigation facilities along with agro-wells and other appropriate water resources
- h. Formation of user groups to control local water resources/tanks including maintenance of hand pumps
- i. Promotion of water conservation awareness
- j. Augment water supply through bowsering /dug wells
- k. Promote community/household rainwater harvesting structures for local drinking water security

Output:

- Soil rehabilitation programme in place; Micro irrigation schemes are in use in drought prone areas; Drought tolerant agricultural methods in use;
- Sustenance of minimum level of drinking water supply ensured;
 - Ground Water Assessment maps available

- Capacity of WRB enhanced to forecast hazardous ground regimes
- Hazardous ground water areas in NCP identified
- People are made aware of the effect of polluted ground water on health and the possible preventive actions
- Water purification kits given to 1000 most affected families

Budget:

Year 1-2 (2006-2007)	- SLR 50 million (USD 0.50 mi)
Year 3-5 (2008-2010)	- SLR 300 million (USD 3.0 mi)
Year 6-10 (2011-2015)	- SLR 100 million (USD 1.0 mi)
Total Budget	- SLR 450 million (USD 4.5 mi)

Funding status:

Local / International Funds Required.

Contact persons in lead and participating agencies:

Director - Department of Agriculture,
Chairman- Water Resources Board ,
Director- Agrarian Research Training Institute, DMC- Director-General

M-10 Enhancing Dam Safety

Agencies involved:

Ministry of Irrigation, Ministry of Power and Energy, MoDM	-(Activity a);
ID, CEB, MASL	-(Activities b,c,d,f,g,h)
CEB	-(Activity i)
NBRO, DMC	-(Activity c)
DS, Police, DMC	-(Activity g)
PC, LA, GN	-(Activity h)

Background and rationale:

Sri Lanka is predominantly an agricultural country with a proud history of building large irrigation systems including major reservoirs. Apart from a recent instance of a breached sluice gate in one of the major reservoirs (Kanthale), no major incidents have been reported in over a thousand years. However with the creation of major reservoirs for generating electricity impounding major rivers in the hilly terrain by high dams, disaster risk in the downstream of these reservoirs has increased. Presently three government agencies are responsible for the maintenance of reservoirs. Although data on some of the reservoirs and dams are available with these institutions, there is no list of areas that will be affected in case of release of excess water. Landslides of minor scale have been reported in steep slopes close to reservoirs. Therefore ensuring the safety of dams as well as the steep slopes of the reservoirs has become vital to mitigate disaster that could be caused due to uncontrolled release of water from reservoirs.

Objective:

- To ensure safety of dams through a proactive approach for regular maintenance
- To develop database on main dams, which can create flood vulnerability due to sudden release of water
- To list dams classified according to risk available
- To develop procedure for dam inspection and monitoring of reservoir induced landslides & earth quakes

Time frame of implementation:

- Year 1-2 (2006- 2007) - Short term
- Year 3-5 (2008- 2010) - Medium term

Geographical area of implementation:

All provinces

Activities:

Year 1-2 (2006-2007)

- a. Constitute an expert group for dam inspection and monitoring.
- b. Development of database on dams which can create flood due to sudden release of water
- c. Develop procedures for dam inspection and monitoring of dams and areas around the reservoir
- d. Assess all dams for spillway adequacy and other structural failures
- e. Undertake periodic dam inspection and monitor mitigation programme and recommend further safety measures

Year 3-5 (2008 - 2010)

- f. Prepare inundation maps for downstream areas of all major reservoirs and identify risk areas.
- g. Develop and introduce a proper warning mechanism
- h. Conduct awareness programmes for relevant officials, residents and children in vulnerable areas
- i. Introduce rubber gates instead of the flash boards presently used at Castlereigh reservoir

Output:

Database on major dams that can create flood vulnerability due to uncontrolled release of water

List of dams classified according to risk available

Procedure for dam inspection and monitoring of reservoir induced landslides and earthquakes

Budget:

Year 1-2 (2006-2007)	- SLR 8.5 million (USD 0.085 mi)
Year 3-5 (2008-2010)	- SLR 171 million (USD 1.71 mi)
Total Budget	- SLR 179.5 million (USD 1.795 mi)

Funding status:

Local / International Funds Required.

Contact persons in lead and participating agencies:

Disaster Management Centre	- Director-General
Ministry of Irrigation	- Secretary
Ministry of Power and Energy	- Secretary
Irrigation Department	- Director Irrigation
Ceylon Electricity Board	- Chairman
Mahaweli Authority of Sri Lanka	- Chairman

M-11 Risk transfer Mechanisms

Agencies involved:

Lending Institutions and Insurance Sector; DMC, SLRCS

Background and rationale:

The government has been spending large sums of money for payment of compensation to victims of disasters every year. Over the last few years damages to life and property due to natural disasters have been on the rise. In most occasions infrastructure belonging to the private sector is insured against fire and civil unrest but not against natural disasters. However individual houses and small business are not covered by any insurance policy.

International insurers charge high premium for re-insurance, which leads to high premium for local insurance and therefore people are reluctant to insure properties. Government should encourage the banking and insurance sector agencies and micro credit facilitators to develop innovative schemes as effective financial and economic tools to reduce losses and damages. Special incentive packages and capacity building programmes should be organized.

Objectives:

To introduce effective economic and financial tools aiming at reduction of losses and damages through increased participation of private sector in risk management activities.

Time frame of implementation :

Year 3-5 (2008-2010) - Medium term

Geographical area of implementation

The entire country

Activities

- a. Organize seminars for banking sector insurance sector and micro credit facilitators
- b. Establish a resource group for developing schemes suited to government sector institutions and general public in Sri Lanka

- c. Facilitate the participation of stakeholders in international networking events
- d. Improve micro-finance and micro-insurance for DM
- e. Encourage revision of lending procedures for development activities such as mini-hydro projects, human settlement development projects etc., to integrate risk management interventions (e.g: set up limits for loans , making compulsory a report from a competent authority for granting loans)
- f. Make available insurance schemes for development projects in hazard prone areas.

Outputs:

Risk transfer mechanism and safety nets (Insurance/ Incentive schemes) established to reduce losses.

Budget:

Year 1-2 (2006-2007)	- SLR 1.8 million (USD 0.018 mi)
Total Budget	- SLR 1.8 million (USD 0.018 mi)

Funding status:

Additional Funding Required

Contact in lead and participating agencies

DMC - Director General; Lending Insurance sector institutions,
State & Private Banks - Chairmen/CEOs

M-12 Research and Development in Disaster Risk Reduction

Agencies involved:

DMC, Universities, Scientific and Technical Institutions

Background and rationale

The lack of coherent and consistent 'losses' and 'damages' data for immediate recovery planning and lack of information on existing and emerging patterns of disaster risk for longer term preparedness and mitigation measures had previously been identified as a major constraint faced by policy and decision makers in Sri Lanka. Systematic disaster inventories that capture time-series, local-level impacts of disaster events can be very useful in discerning trends in emerging disaster risks and in making policy, programme design and resource allocation decisions to manage those risks.

Research will help strengthening the data base on disaster information as well as in the disaster risk assessment studies in prone areas. As proposed in the integration of DRM in university education, Masters and Bachelor Degree students will be encouraged to select Disaster Risk Management related themes for dissertations. Important and urgent research studies can be entrusted to R&D agencies dealing with these subjects; and also relevant departments of universities, either as specific studies to the staff or by providing grants for PhD or Masters theses with proper supervision by the staff. Publication of research findings also will be promoted.

For the government, the availability of accurate, comprehensive, time-sensitive data on disaster-affected populations is critical for operational efficiency, planning and transparency. Information from research will help regular updating of the DMC website and the database.

Objectives:

To encourage technical and scientific institutions and universities to undertake Research & Development activities in DRR

To initiate a programme for Research and Development in DRR

Time frame of implementation:

Year 3-5 (2008-2010) - Medium term

Geographical area of implementation:

National level and focusing on districts prone to various disasters

Activities:

- a. Identification of needs
- b. Undertaking priority research and development programs

Outputs:

Technical and scientific institutions and universities encouraged to undertake Research and Development activities in DRR

Programme initiated to undertake Research and Development in DRR

Budget:

Year 3-5 (2008-2010) - SLR 1 million (USD 0.01 mi)

Total Budget - SLR 1 million (USD 0.01 mi)

Funding status:

Additional Funding Required

Contact persons in lead and participating agencies:

Director General, Disaster Management Centre
Universities, Scientific and Technical Institutions

M-13 Reducing Health Risks due to Polluted Ground Water

Agencies involved:

Water Resources Board (WRB) , Ministry of Health (MoH), PC, LA, GN - (Activities a,b); MoH, MDTU, PC, LA, WRB (Activity d); MoH, GN, DS, LA, WRB (Activity c);

Background and rationale:

Sri Lanka is a tropical country where water is a major constraint for development. Traditional practice maintains a fragile balance between water resources and the demand for agriculture and domestic use. The rapidly developing society and use of modern technology compounded by the climatic changes is disturbing the historical balance. Limited availability of surface water in the North-Central, North-Western part of Southern and Northern provinces of Sri Lanka has resulted in the rapid exploitation of ground water. Use of poor quality ground water has caused serious health problems like kidney failures and skeletal fluorosis in these parts of the country. The government has to spend large sums of money to provide medical facilities in these areas to save the affected people.

Objective:

To reduce the health risk of people in identified villages in North-Central province due to use of hazardous ground water for drinking.

Time frame of implementation:

Year 1-2 (2006-2007) - Short term

Year 3-5 (2008-2010) - Medium term

Geographical area of implementation:

The Entire Country

Activities:

Year 1-2 (2006-2007)

- a. Enhancing the forecasting capability on hazardous aspect of ground water regimes
- b. Identification of hazardous ground water areas in North-Central province
- c. Conduct awareness programmes on the quality of drinking water and the adverse effects of dissolved chemicals along with preventive measures

Year 3-5 (2008-2010)

- d. Issue water purifications kits to 1000 most affected families

Output:

Capacity of WRB enhanced to forecast hazardous ground regimes
Hazardous ground water areas in NCP identified
Water purification kits given to 1000 most affected families
People are made aware of the effect of polluted ground water on health and the possible preventive actions

Budget:

Year 1-2 (2006-2007)	- SLR 23 million (USD 0.230 mi)
Year 3-5 (2008-2010)	- SLR 17.5 million (USD 0.175 mi)
Total Budget	- SLR 40.5 million (USD 0.405 mi)

Funding status:

Local / International Funds Required.

Contact persons in lead and participating agencies:

Water Resources Board	- Chairman
Medical Officer of Health Anuradhapura	- MoH Anuradapura
North Central Provincial Council	- Chief Secretary
Local authority	- Mayor/Chairman

M-14

Construction of By-pass Road Down-stream of 'Kantale Dam'¹**Agencies involved:**

Road Development Authority, Irrigation Department, Divisional Secretary

Background and rationale:

Kantale dam once breached is identified as a vulnerable dam due to heavy traffic passing over it. Due to the current weak condition of the dam, Irrigation Department was of the firm view that heavy traffic over the bund was to be limited to 20 metric tonnes. The heavy trucks that transport flour from Prima factory and cement from Mitsui Company exceed the allowable load of 20 metric tonnes, sometimes threefold. Irrigation Department has requested RDA in January 2005 to prohibit heavy traffic over the dam and limit the weight to the allowable maximum. In spite of a special gazette notification published accordingly in June 2005, up till now the RDA and the Police could not implement the limitations given in the gazette notice due to various reasons. One main impediment is the non-existence of an alternate road.

Inhabitants of down stream of the dam too agitate from time to time, to limit the traffic flow as they had a bitter experience earlier and are still living with fear.

To impose the weight limitations recommended by the Irrigation Department it is necessary to provide an alternate road down stream of the bund for which the RDA has already submitted a proposal with plans and an estimate.

Objective:

To reduce the risk of failure of the Kantale dam by re-routing heavy traffic along the bund

Time frame of implementation:

Year 1-2 (2006-2007) - Short term

Geographical area of implementation:

Kantale

Activities:

Design, Tender Documents and Tender Procedure, Construction

Output:

An alternate road down stream of the Kantale dam constructed to reduce traffic on the road along the dam.

Budget:

Year 1-2 (2006-2007) - SLR 40 million (USD 0.4 mi)

Total Budget - SLR 40 million (USD 0.4 mi)

Funding status:

Local / International Funds Required.

Contact persons in lead and participating agencies:

Road Development Authority

Chief Engineer

Road Development Authority

Inner Harbour Road

Trincomalee

Tel: 026-2221009

Irrigation Department

Director General of Irrigation

011-2584984, id_dgi@solaris.gov.lk

Divisional Secretary (for acquisition of lands if any)

M-15**Drinking Water for Coastal Divisions of Hambantota District and other Select Districts by Providing Desalination package plants****Agencies involved:**

M/DM&HR, DMC, LAs, NWS&DB

Background and rationale:

Population in drought prone divisions of Hambantota district do not have adequate drinking water for consumption and they are supplied with drinking water using bowsers once a week or so. In several other areas salinity is present in ground water again resulting in shortage of potable water. The NWS&DB policy in water supply is to provide 200 litres per capita / day in densely populated areas. In rural drought prone areas and in areas where potable water is scarce, this has been reduced to 25 litres per capita / day for drinking considering the availability of other sources of water for bathing, washing and other purposes. It is necessary to carry out a study to assess the drinking water requirement.

An alternative method of supply of drinking water in these areas would be by desalination of sea water or brackish water, for which desalination package plants are available in different capacities and can be selected depending on the water demand. As this system requires uninterrupted power supply generators, solar power plants may also be required.

The proposal is to assess the requirements in affected areas, feasibility of use of desalination package plants including cost of operation and maintenance, initially set up desalination plants with other supportive equipment, in Hambantota district and subsequently in other districts.

Objectives:

To improve the quantity of available drinking water supply to affected divisions of Hambantota district and subsequently in other districts and provide water supply using desalination plants.

Time frame of implementation:

Year 1-2 (2006-2007) - Short term

Geographical area of implementation:

Initially Hambantota district and other districts subsequently

Activities:

- i. Assessment of potable water requirements in affected areas
- ii. Assessment of feasibility of this method including cost of O&M
- iii. Augment water supply through desalinisation plants

Output:

Drinking water supplied to affected divisions of Hambantota district and subsequently in other districts

Budget:

Year 1-2 (2006-2007)	- SLR 600 million (USD 6.0 mi)
Total Budget	- SLR 600 million (USD 6.0 mi)

Funding status:

Local / International Funds Required.

Contact persons in lead and participating agencies:

Director General- DMC, Local Authorities, NWS&DB

M-16**Provision of Solid Waste Disposal Systems as a Solution to the Solid Waste Hazard in Urban Areas****Agencies involved:**

M/DM&HR

Disaster Management Centre (DMC)

Provincial Councils (PCs)

Local Authorities (LAs)

Sri Lanka Institute of Local Governance (SLILG)

Provincial Commissioner of Local Governance (PCLGs)

Background and rationale:

Solid waste disposal has been a problem for several years now and with the rapid development and the changing living styles of citizens this will in time take disastrous proportions. It is necessary to curtail this trend on one side with awareness creation among the general population and on the other, finding a solution to the rapidly increasing quantities of solid waste, especially in urban areas. The solid wastes generated by different sources are of different physical and chemical characteristics. Generally city wastes would consist of elements such as, ferrous and non metals, coarse and fine earth, stone, bricks, glass, ceramics, paper / cardboard, wood, rags, rubber and leather, plastics etc. Hospital wastes and wastes generated by some specific productions may be even lethal and thus need incineration. The general city solid wastes are not so and could be disposed of in alternative eco friendly ways. Particularly for large quantities of city wastes, incineration may not be environmentally friendly, but can be adopted in specific cases when quantities are small and no alternative method can be found. City solid waste is generally categorised as wet and the process takes a longer time and the fuel consumption for incineration is higher, which facts also has to be considered. In cases where incineration method is selected arrangements for O&M cost need to be made.

The most suitable eco friendly method of disposal would be composting coupled together with recycling of non-biodegradable elements of the wastes. Paper could be recycled for very good uses. Small industrialists can be motivated for undertaking recycling projects for metals, glass, ceramics, paper / cardboard, rubber, leather, plastics etc.

For composting of solid waste what is mainly required is the land free of cost, which would be around 15 acres for 100 tons/day of solid waste. For example, at present Colombo MC generates solid waste around 600 tons/day which can increase with time. Total solid waste generation of Kotte, Dehiwala-Mt. Lavinia and Moratuwa MCs and Maharagama UC taken together may be around the same.

In Sri Lanka and in the region there are companies undertaking such composting ventures on Build-Own-Operate-Transfer (BOOT) basis, the terms of which would be very beneficial to LAs. For example their conditions for a given city may be such as, a land in a suitable location at around 15 acres for 100 tons/day of solid waste, collecting and transporting the solid waste to the given land as per the agreement. There is no payment by the client authority to the company involved, other than the land to be provided and the solid waste transported to the location. A land in the dry zone would be most suitable for the process of composting, and still more convenient if close to a railway track, so that the waste can be transported by rail. Government land in selected areas may be obtained on 99 year lease basis. In case of small LAs private land may be obtained on some conditions. Even coconut land is suitable without harming the cultivation. In locations such as Dambulla, where the waste is predominantly biodegradable, this sort of arrangement will be very apt.

The company can decide what they do with the compost produced and other by products. Sorting of waste, recycling of non-biodegradable elements etc. will be the responsibility of the company. At the same time they may agree to sell the compost to the client LA at a lower price if the client wishes to, which can be included in the agreement.

In this context it may be viable to assess the situation in selected large MCs and UCs and decide on the method to be adopted and call for specific proposals, either composting or incinerating.

With respect to funds, in the case of incinerators initial funding will be required with O&M cost borne by the respective LAs. In case of composting, after obtaining state land, funding is required for establishing the infrastructure - transportation system to the site, after which monthly operational cost could be borne by the respective LAs.

Objective:

To reduce the hazardous situation arising from the improper management of solid waste and prevent it taking disastrous proportions in time to come

Time frame of implementation:

Year 1-10 (2006-2015) Short, medium and long term

Geographical area of implementation:

Stage I	MCs and major UCs	40 LAs
Stage II	Other selected UCs and major PSs	30 LAs
Stage III	Other selected UCs and PSs	30 LAs

Activities:

Year 1-2 (2006-2007) : Stage I

- a. Assessment/survey of different LAs for quantities and type of waste (May be already available with most LAs)
- b. Decide whether to go for composting or incinerators considering the quantities and type of waste
- c. In case of composting solution, decide on locations of land for different LAs considering the distances and mode of transport
- d. In case of incinerators decide on the numbers and specifications for supply coupled with recruitment of the needed operators and training for them.
- e. Implement for most urgent LAs selected under Stage I

Year 3-5 (2008-2010)

- f. Carry out activities a) to e) as above for LAs selected under Stage II

Year 6-10 (2011-2015)

- g. Carry out activities a) to e) as above for LAs selected under Stage III

Output:

Strategy for solid waste disposal decided and implemented in LAs in a phased out manner

Budget:

Year 1-2 (2006-2007) - SLR 1200 million (USD 12.0 mi)

Year 3-5 (2008-2010) - SLR 1000 million (USD 10.0 mi)

Year 5-10 (2011-2015) - SLR 800 million (USD 8.0 mi)

Total Budget - SLR 3000 million (USD 30.0 mi)

Funding status:

International / Local Funds Required

Contact persons in lead and participating agencies:

M/DM&HR, Director General- Disaster Management Centre (DMC)

Director, Sri Lanka Institute of Local Governance (SLILG)

Provincial Councils (PCs), Local Authorities (LAs) and Provincial Commissioners of Local Governance (PCLGs)

Chapter 7

Community-based Disaster Risk Management

7.1 Key Issues

Communities bear the primary impact of disasters, yet the first and continued response to disasters comes from community members. Well prepared and protected communities are the first line of defence against disasters and a key to reducing vulnerability and increasing disaster resilience. Having a well resourced and sustainable programme to advance Community-based Disaster Risk Management (CBDRM) is therefore a key strategy to achieve a safer Sri Lanka.

However, so far there has been insufficient coordination between the efforts of the Government at District and Divisional level action planning and the interventions of NGOs at the community level. After the devastating tsunami, there is significantly greater acceptance within the country (and among international donors) of the country's relatively high vulnerability to disasters. A result of this is a greater willingness to invest resources in pre-disaster preparedness and mitigation, especially at the community level. This represents a significant opportunity for initiating and undertaking a national programme on CBDRM.

7.2 Strategy

Sri Lanka has 25 districts, 325 divisions, about 14016 GN Divisions and about 40,000 villages. Several districts and divisions face multiple hazard risks. Over 50 percent of these communities are prone to one or more natural hazard risks. This component aims to establish a sustained national programme to build the resilience and community level capacity for natural disaster risk management and conflict resolution and peace building in each vulnerable community at risk. This will be achieved in a phased manner over the next 10 years through establishing:

Community DRM teams in 20,000 villages over 2500 GN divisions

- An effective national network of local level volunteers for DRM
- Effective coordination mechanisms between Government and NGOs at the National, Provincial, District, Division and GN division levels
- CBDRM resource centres in 25 districts
- Shared methodologies for CBDRM implementation and training
- Small grants programme for community teams to support community level DRM projects
- Development of micro-finance schemes for vulnerability reduction and mitigation
- Applied research grants for community level programmes
- Training of key state and non-state actors at the local level in mediation,
- Promoting mechanisms for communities to seek accountability and express grievances
- Empower local administration to assume greater responsibility for disaster management

Priority programmes to be taken up in the first 2 years (2006-2007) are:

- Community DRM teams in 5,000 villages over 500 GN divisions with a network of volunteers; Estimated budget: USD 5 million
- CBDRM resource centres in 10 districts; Estimated budget: USD 2 million
- Small grants programme awarding up to 500 grants to community teams to support community level DRM projects; Estimated budget: USD 6 million

To implement a programme on this scale, a range of stakeholders is required, primarily NGOs working with LG and community authorities. It is expected that the primary responsibility for supporting the establishment of community DRM teams and implementing CBDRM programmes will lie with NGOs, CBOs and the SLRCS working closely with local agencies. It will also provide suitable opportunities for government institutions, technical agencies and universities to undertake CBDRM applied research work. The anticipated role of the DMC is to facilitate coordination of geographical areas for undertaking programmes, supporting linkages between CBDRM teams and NGOs with GN Division, the division and district officials and as well as to establish and administer the small grants programme and applied research grants programme.

The government is implementing a strategy of poverty alleviation through the Samurdi programme and the risk management approaches can be integrated with community-based infrastructure projects, micro-credit schemes, and cash for work programmes initiated by the Samurdi movement. One of the key strategies would be to identify areas where CBDRM practices can be integrated into Samurdi and Gemipubuduwa programme activities.

i. Community DRM Teams in 20,000 Villages over 2500 GN Divisions

This sub component seeks to establish community teams for DRM in a phased manner in all at-risk communities in the country. These community DRM teams will be responsible

for EW, preparedness, response and mitigation.

The sub-component will support the establishment of these teams, provide initial orientation and training, support undertaking of village level hazard, vulnerability and capacity assessments, preparation of response and evacuation plans, and identification of micro projects on mitigation. The teams will be provided periodic training and will be expected to conduct periodic drills and rehearsals.

An effective linkage of CBDM groups will be established with divisional and GN DM committees and DM plans. The first phase of the programme over a 2 year period of 2006 to 2007 will target 5000 villages in 500 GN divisions in 10 districts.

ii. *An Effective National Network of Local Level Volunteers for DRM*

This sub-component seeks to establish a national scheme of community disaster response volunteers. These volunteers will support dissemination of EW, assist in evacuation, search and rescue, provide first aid and medical first response, and support the running of camps. They will be active members of the CBDRM groups. The component will support registration of volunteers in a database and also the maintenance of this database available at the GN Division, DS Division and District offices. A suitable scheme for providing recognition, probably in the form of certificates and identity cards will be established. A standardised curriculum and large scale programme of training of these volunteers is to be undertaken. The sub-component will build on the ongoing efforts of DMC to deploy District DM coordinators and identify community leaders to take the lead in EW dissemination and evacuation, as well as the well established Red Cross Volunteer framework of SLRCS, where a major expansion is planned.

iii. *Establishing CBDRM Resource Centres in Each District*

This sub-component will establish CBDRM resource centres in each district. These resource centres are expected to play the role of facilitator for CBDRM activities and teams in the district, provide technical support, support the District Secretaries in maintenance of database, as well as undertake documentation and dissemination of CBDRM's experience. It is proposed to identify agencies at the District level (universities, technical institutions, NGOs, Divisional Secretary's offices) who are willing to take on this role and support them in strengthening their capacities to serve this function. In some districts, these may need to be set up afresh. The sub-component will fund the establishment of these centres, and provision of staff and equipment as well as some initial funding for activities.

iv. *Small Grants Programme*

It is planned to create a CBDRM Small Grants Programme to support the implementation of priority community preparedness and mitigation projects by community DRM teams in

high risk villages and GN Divisions. Priority project will cover assessment of local hazards, vulnerabilities, and capacities, preparedness planning, procurement of response equipment, resource mobilisation, capacity building and implementing small mitigation projects. 500 grants are expected to be awarded in the first two years.

v. *Applied Research Grant Scheme for Government Agencies to Implement Community Level Risk Management Programmes*

It is planned to establish a fund in the DMC to award annual applied research grants to government institutions, local government institutions, universities, academic institutions, and professional bodies to implement mitigation and risk management programmes at the community level in partnership with at-risk communities.

vi. *Develop a Micro-Finance Scheme to Reduce Vulnerability at Household Level and Promote Alternative Livelihood Options*

This sub-component will work with Sri Lankan micro-finance institutions to support the establishment of schemes to enable vulnerable communities in hazard prone locations to identify and take up alternate and additional livelihood options, as well as invest in mitigation measures to improve the disaster resilience of household and livelihood assets.

vii. *Training of key State and Non-state Actors at the Local Level in Mediation*

Through the sub-component the capacity of key actors at the local level such as Grama Sevakas and local citizen's committee will be strengthened in the area of conflict resolution and peace building through mediation training.

viii. *Promoting Mechanisms for Communities to seek Accountability and Express Grievances*

An independent and effective redress mechanism for complaints/grievances in relation to disasters will be created in close collaboration with the Human Rights Commission.

ix. *Empower Local Administration to assume Greater Responsibility in Disaster Management*

This sub-component aims to strengthen local government and participatory democracy as envisaged by the Commission on Local Government Reform, 2000, in order to revitalise and empower local government to respond to emerging challenges relating to DRM.

7.3 Project Proposals

The following are priority projects to be implemented in a phased manner over the next 10 years with regard to community based disaster management:

- | | |
|--------|---------------------------------|
| CBDM-1 | Promotion of CBDRM Volunteerism |
| CBDM-2 | Establishing Resource Centres |

- CBDM-3 Preparedness and Mitigation through Small Grants Programmes
- CBDM-4 Development and Implementation of Micro-Finance Schemes
- CBDM-5 National CBDRM Programme
- CBDM-6 Applied Research Grant Scheme for CBDRM
- CBDM-7 Landmines and Unexploded Ordnances
- CBDM-8 Alternative and Informal Dispute Resolution Mechanisms and Improving Services from State Actors
- CBDM-9 Facilitation of the Creation of Local Citizens Committees
- CBDM-10 Strengthening Participatory Democracy- Local Government
- CBDM-11 Creating a Special Disaster Response Ombudsman
- CBDM-12 Issues of Subsidiarity in Situations of Emergency
- CBDM-13 Strengthening Human Rights in Tsunami Recovery

CBDM-1

Promoting Community Volunteerism

Agencies involved:

DMC, District Secretaries and DM Committees, Divisional Secretaries, LAs in collaboration with CBOs and NGOs, SLRCS

Background and rationale:

Disaster survivors and community members are the first responders in most disaster situations. Despite the fact that many villages in Sri Lanka have faced disasters in the past, the community based initiatives for disaster preparedness and response are limited to a few pockets in the country. Community-based disaster preparedness plans need to be developed for vulnerable villages. There is a need to identify volunteers and train them on different DM components. The vulnerable communities are not properly linked with government mechanism, due to lack of institutional capacity at local levels.

This will help in development of disaster resilient community programmes, with focus on more sustainable livelihood patterns. A number of organisations such as the SLRCS, ITDG, CARE etc, are currently implementing disaster mitigation programmes in various parts of the country. However coordination among these agencies needs to be improved, to enable better utilisation of resources for a multi-hazard approach. Coordination is also required to prevent duplication of some activities in the same area and to ensure equitable distribution of their services.

It is necessary to promote community disaster response volunteers and establish community teams for DRM in a phased manner in all at-risk communities in the country and a system of registration of volunteers with districts / divisions / local authorities. A database of volunteers needs to be developed and maintained. A sustainable system must be established to maintain volunteers' skills through training and motivation.

Objectives:

To develop a strategy for increased participation of volunteers and commitment of at-risk communities in risk reduction interventions in vulnerable geographies.

To establish community DRM teams in all at-risk communities.

To establish and maintain a volunteer database for use in emergencies

Time frame of implementation:

Year 1-2 (2006 to 2007) - Short-term - 500 GN. Divisions

Year 3-5 (2008 to 2010) - Medium term - 1000 GN. Divisions

Year 6-10 (2011 to 2015) - Long-term - 3000 GN. Divisions

Geographical area of implementation:

The disaster prone GN divisions in the 10 districts of Galle, Matara, Hambantota, Ampara, Trincomalee, Gampaha, Ratnapura, Puttlum, Badulla and Nuwara Eliya. These districts have been selected taking into consideration tsunamis, cyclones, floods, drought, landslides and coastal erosion as potential hazards. The selection of vulnerable GN divisions will be done according to information furnished by the National, District & Divisional level institutions and LAs. This will be based on historical records of disasters as well.

Activities:

- a. Establishing community DRM teams in each 'at-risk community' to undertake Village level activities of EW, preparedness, response and mitigation
- b. Developing volunteer facilitators inclusive of their capacity building and training.
- c. Identifying and selecting volunteers to serve in vulnerable communities during disaster events (first aid, Search and Rescue (SAR), camp maintenance, etc.)
- d. Providing training to selected volunteer groups
- e. Conducting periodic drills and rehearsals linked with SLRCS branch activities.
- f. Establishing revolving funds at community level
- g. Establishing a database of volunteers at National level, in each district, and GN areas and at the LA level.
- h. Provide Identity Cards / support local recognition

Outputs:

- Community DRM teams established in all at-risk communities
- Volunteer database established and maintained for use in emergencies
- Volunteers from a specified number of GN divisions from 10 districts trained and stationed in respective villages, with their roles specified in Community-based disaster preparedness plans

Budget:

Year 1-2 (2006-2008)	-SLR 500 million (USD 5.0mi)
Year 3-5 (2008-2010)	-SLR 1000 million (USD 10.0mi)
Year 6-10 (2011-2015)	-SLR 3000 million (USD 30.0mi)
Total budget	-SLR 4500 million (USD 45.0 mi)

Funding status:

New Funding Required.

Contact persons in lead and participating agencies:

Director General, Disaster Management Centre

Tel: 011-2441570 /73 Fax: 011-2441571

Email: dmcs1@sltnet.lk dgdmcsl@gmail.com

District Secretaries, Divisional Secretaries, Local Authorities

Sri Lanka Red Cross Society and branches at district and divisional levels,

Heads of National & International NGOs

UNDP, Practical Action (ITDG), CHPB

CBDM-2**Establishing CBDM Resource Centres****Agencies involved:**

DMC, District Secretaries in collaboration with CBOs and NGOs, Universities, technical institutions

Background and rationale:

Establishment of CBDRM resource centres in Sri Lanka is a relatively new activity. But as a country which faces disasters repeatedly a resource centre is essential. Presently a large number of NGOs are working on DM but the concept of establishing a resource centre has not yet been implemented.

The purpose of a resource centre is not only to make available information on technology/ models available to communities and NGOs, but also to improve adaptation of communities to new knowledge and improve ownership of community based programmes through building on coping mechanisms, using local wisdom and higher participation. The concept involves picture display or demonstration models of good practices, new or improved technology, theme parks, “How to” manuals, etc.

Objectives:

To increase access to information on community based initiatives for sharing of experience and lessons learnt.

To set up CBDM Resource Centres in each district, consisting of picture display or demonstration models of best practices, new or improved technology, theme parks, “How to” manuals, awareness materials and publications etc.

To facilitate research activities on CBDRM encouraging research on the application of CBDRM concepts at the grassroots level in collaboration with development agencies (government and non-government)

Facilitate monitoring and evaluation of various CBDRM activities

Time frame of implementation:

Year 1-2 (2006 to 2007) - Short term - 10 Districts
 Year 3-5 (2008 to 2010) - Medium term - 10 Districts
 Year 5-10 (2011 to 2015)- Long-term - 5 Districts

Geographical area of implementation:

10 districts have been selected in the first phase and a resource centre is to be established first in each district and subsequently in the whole country.

Activities:

- a. Identify agencies at district level (Universities, technical institutions, NGOs, Divisional Secretariats) willing to take on role of facilitator, technical support provider, and support to maintenance of data base, as well as documentation and dissemination of experience
- b. Provide recognition and support to these agencies
- c. Involve leaders in Disaster Management committees set up at various levels.
- d. Organize periodic Networking events and joint Drills
- e. Development of database through a registration system of CBOs, NGOs and community teams for effective networking
- f. Organize exchange programmes for sharing experience among volunteer groups within the district, within the country and worldwide if possible

Output:

Resource centres developed in 25 districts

Budget:

Year 1-2 (2006-2008)	-SLR 200 million (USD 2.0 mi)
Year 3-5 (2008-2010)	-SLR 200 million (USD 2.0 mi)
Year 6-10 (2011-2015)	-SLR 100 million (USD 1.0 mi)
Total budget	-SLR 500 million (USD 5.0 mi)

Funding status:

New funding required.

Contact persons in lead and participating agencies:

Director General, Disaster Management Centre

Tel: 011-2441570 / 73 Fax: 011-2441571

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Following to be identified in the process:

Technical Institutions at district level

District Secretaries, Divisional Secretaries, LAs

Heads of National and International NGOs

SLRCS and branches in districts

UNDP, Practical Action (ITDG), Seva Lanka / Sarvodaya, Care Sri Lanka

Plan International, Rain Water Harvesting Forum, CHA

CBDM-3**Preparedness and Mitigation through Small Grants Programmes****Agencies involved:**

DMC, District Secretaries, Divisional Secretaries, Local Authorities, GN Divisions, NGOs and CBOs

Background and rationale:

Communities usually develop their coping mechanisms over a period of time, to respond to disasters and mitigate its impacts on them, their livestock, property and environment. However, there is a need to support communities to invest their time and resources in maintaining and improving their environment and reducing the risks of natural / man made hazards. There are instances worldwide that reflect the fact that community participation in developments projects not only helps in reduced costs of the intervention, but also sustainability, on account of operations, and maintenance, due to higher levels of ownership.

A link between disasters and development may be found at community level planning. Measures to reduce vulnerability are often a community's first priority, which government administration and other stakeholders facilitate from their development budgets. This helps improve the community's capacities and also links it to mainstream development plans. Such measures require a paradigm shift in programme planning and all round capacity building, in order to encourage community mobilisation, and to initiate programme design and implementation.

In this context the introduction of a programme to provide guidance and financial support would greatly benefit the communities in enhancing their preparedness and resilience.

Objectives:

- To encourage community DRM teams to actively implement preparedness and mitigation projects
- To implement small grants programme through DMC, to support such projects
- To encourage CBOs and other community groups to be involved in DM programme planning
- To promote disaster resistant sustainable livelihood options to encourage development among the most vulnerable communities

Time frame of implementation:

Year 1-5 (2006-2010) - Short and Medium term

Geographical area of implementation:

All vulnerable areas in the country, based on hazard specific risk analysis.

Activities

Phase I: (2006-2007) : 500 projects

- a. Develop framework to assess risk profile of communities from identified vulnerability mapping.
- b. Develop guidelines and have coordination meetings with District Secretaries, CBOs and NGOs
- c. Establish small grants programme for community teams
- d. Discuss and encourage undertaking of pilot projects in high risk villages based on proposals from community teams, facilitated by DSs, LAs, Red Cross and NGOs.
- e. Pilot projects to cover assessment of local hazards, vulnerabilities, and capacities, preparedness planning, resource mobilization, capacity building and implementing small mitigation projects.
- f. Monitoring and knowledge sharing, for wider dissemination of good practices.

Phase II: (2008-2010) : 750 projects

- g. Expand the scope of these activities in all vulnerable areas
- h. 750 projects in Phase II

Output:

Small grants programme framework established and implemented through DMC, to support Community DRM teams in high risk villages and GN Divisions, to actively implement preparedness and mitigation projects; encourage CBOs and other community groups to get involved in DM programme planning; and to promote disaster resistant sustainable livelihood options of development among the most vulnerable communities.

500 projects in Phase I and 750 projects in Phase II implemented.

Budget:

Year 1-2 (2006-2008)	-SLR 600 million (USD 6.0mi)
Year 3-5 (2008-2010)	-SLR 1000 million (USD 10.0mi)
Total budget	-SLR 1600 million (USD 16.0 mi)

Funding status:

Additional Funding Required.

Contact persons in lead and participating agencies:

Director General, Disaster Management Centre

Tel: 011-2441570/73 Fax: 011-2441571

Email: dmcs@sltnet.lk dgdmcs@gmail.com

District Secretaries, Divisional Secretaries, Local Authorities, GN Divisions, Sri Lanka Red Cross, UNDP, NGOs and CBOs

CBDM-4**Development and Implementation of Micro-Finance Schemes****Agencies involved:**

DMC in partnership with LAs, aid agencies in collaboration with banks, NGOs and technical institutions.

Background and rationale:

The community coping mechanisms, supported by institutional safety nets provide enough opportunities for people to reduce the loss of productive time, efforts and resources, caused by natural or manmade hazards. This helps bring about an improvement in the environment as also the economic status, by enabling them to utilise their own and their family members' spare time in diversified/ supportive income generation activities and improvement in. Providing micro-finance facilities of these vulnerable people by introducing alternative livelihood options available will largely help them in capacity building.

Objectives:

To develop a scheme providing micro-finance facilities to help increase participation of at-risk communities in risk reduction through implementation of CBDRM projects and through government-sponsored Samurdi programmes in hazard-prone areas, in partnership with and technical support from technical, academic and LG institutions.

Time frame of implementation:

Year 3- 5 (2008-2010) - Medium term

Geographical area of implementation:

In Phase I country wide, where community based DRM is being implemented and in Phase 2, communities with low income and moderate risk to disasters.

Activities:

1. Meeting with LAs, representatives of NGOs and CBOs, to discuss community vulnerabilities and principal and supportive livelihood options.
2. Develop and disseminate a scheme for selection and grant of awards including criteria for selection and approval of projects. (indicative size of grant SL Rs 0.5 million to 5 million)
3. Establish guidelines and introduce new alternative livelihood options for vulnerable

communities and for Samurdi projects in hazard prone areas.

4. Organise micro-finance facilities through community centered organisations.
5. Develop case studies based on the lessons learnt for wider dissemination, and expand the scope of these activities in other vulnerable geographies.

Outputs:

Micro-finance facilities made available for capacity building of vulnerable people and alternative livelihood options introduced

Micro-finance for household level mitigation measures made possible, through community revolving funds.

Budget:

Year 1-3 (2008-2010) 1000 projects	- SLR 500 million	(USD 5.0 mi)
Total budget	- SLR 500 million	(USD 5.0 mi)

Funding status:

Initial Capital through Banks and Aid Agencies.

Contact persons in lead and participating agencies:

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Tel: 011-2441570/73 Fax: 011-2441571

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Aid agencies in collaboration with Banks, Sanasa, SLRCS, SEEDS, NGOs, Technical institutions, CBOs

CBDM-5**National Community-based Disaster Risk Management Programme****Agencies involved:**

DMC, District Secretaries, Divisional Secretaries, LAs, relevant NGOs and CBOs

Background and rationale:

In most disaster prone countries there is an involvement of NGOs and local community organisations, in community development projects, mostly localised in nature and scope of implementation. At times, risk reduction in one area may lead to increased risk in another, an argument usually given against big dams. A macro-level analysis of such small scale projects at National/ District levels provides opportunities for government institutions to guide local implementing partners in highlighting the consequences of one project over another, and thus avoid such interventions. This calls for a mechanism to be developed to ensure that NGO programmes are coordinated, and are focused in reducing overall vulnerability, and improving community resilience.

There is a need to identify focal persons at District and Local levels, who will coordinate vulnerability/ risk assessment data with organisations who wish to involve in risk reduction measures through community level interventions, and will keep an overview of overall impact of such interventions on a regular basis, in line with the DMC framework.

Objective:

To have a smooth operational coordination to implement National Programme on CBDRM.

Time frame of implementation:

Year 3-5 (2008-2010)- Medium Term

Geographical area of implementation:

National level, District level and LA level coordination system.

Activities:

1. To identify focal persons at National, District and Divisional levels, and with LA for the programme
2. To develop a mechanism for periodic meetings with organisations carrying out a small scale mitigation/ preparedness programme.

3. Support identification of risk factors and appropriate methodologies for risk management at various levels.
4. Support impact analysis of such interventions on other communities and selection of best options.
5. Documenting good practices and sharing among CBOs, NGOs and other organisations involved in DM activities in Sri Lanka
6. To have a common training curriculum on CBDRM
7. Support finalisation of programmes, geographical areas, methodologies as required.

Output:

National CBDRM Programme and a national coordination mechanism established between DMC, local administration and NGOs to promote CBDRM

Budget:

Year 1-3 (2008-2010)	- SLR 10 million (USD 0.10 mi)
Total budget	- SLR 10 million (USD 0.10 mi)

Funding status:

New Funding Required

Contact persons in lead and participating agencies:

Director General, Disaster Management Centre

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District Secretaries, Divisional Secretaries, Local Authorities, Relevant NGOs and CBOs

CBDM-6**Applied Research Grant Scheme for Community-based Disaster Risk Management****Agencies involved:**

DMC in partnership with academic institutes/ professional bodies, LAs, agencies, governmental organisations and NGOs working on CBDRM.

Background and rationale:

Participation of private and professional sections of the society, especially academicians, researchers, private sectors and individual enthusiasts, remain weak in the absence of an institutional framework. The best practice examples worldwide on community based programmes highlight the importance of the role this sector plays, in bringing non-conventional ways and methods of doing things, or technologies which are people / environment friendly.

To promote involvement of professionals and private sector, there is a need to initiate and invest small grants, aimed at research in community level risk reduction measures.

Objectives:

To implement risk management projects at the community level by government institutions, LG institutions, and professional bodies in partnership with at-risk communities through applied research grants

To promote research studies on technical as well as sociological aspects on DM

To encourage organisations to apply them in DM activities.

Time frame of implementation:

Year 3-5 (2008-2010) - Medium term

Geographical area of implementation:

Nation-wide intervention, based on vulnerability and interest by professional bodies.

Activities:

1. Develop a scheme for selection and grant of awards, including criteria for selection, approval of projects. (Indicative size of grant 0.5 - 5.0 Million SLR)
2. Organise sharing opportunities among participants to enhance the effectiveness.
3. Develop case studies based on lessons learned for wider dissemination.
4. Expand the scope of the intervention for all vulnerable areas.

Output:

Increased participation of at-risk communities in risk reduction activities through the implementation of CBDRM projects with technical support from technical, academic and LG institutions.

Budget:

Year 1-3 (2008-2010) - SLR 200 million (USD 2.0 mi)
Total budget - SLR 200 million (USD 2.0 mi)

Funding status:

Initial Capital through Banks and Aid Agencies.

Contact persons in lead and participating agencies:

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Email: dmcsl@sltnet.lk dgdmsl@gmail.com

Academic Institutes/ professional bodies, Local authorities agencies, Governmental and non-government organisations working on CBDRM

CBDM 7**Landmines and Unexploded Ordnances (UXO)****Agencies involved:**

M/DM&HR, Ministry of Nation Building, Armed Forces, National and International Organisations involved in Mine Action/ Risk Education

Background and Rationale:

Landmines and UXO are security issues affecting returnees and IDPs in the North-East. Over six hundred communities are known to be affected by mines, with 1290 civilian victims (1099 injured, 191 killed). The presence of landmines and UXO not only prevents the return of IDPs, but also renders land unusable for agricultural, commercial and industrial purposes. Accordingly, landmines and UXO reinforce poverty by denying safe access to land. It further leads to destruction and disruption of infrastructure such as transportation, irrigation systems becoming unusable, exhaustion of medical and rehabilitation services, destruction of the environment, and the economic cost of humanitarian de-mining. Further, land mines have an adverse impact on livelihoods.

In conflict-affected areas where health facilities are poor or sometimes non-existent, the provision of immediate medical assistance for mine injuries is minimal. Further, survivors suffer long-term physical, psychological and economic consequences as a result of mine injuries. Children amount to almost 30% of mine casualties. In addition to physical disabilities sustained in a mine blast, children also suffer severe psychological trauma and continue to require special care for several years. The use of landmines and their effect on children violates the Convention on the Rights of the Child (CRC), ratified by Sri Lanka.

In certain cases disability carries a stigma that can deny a young man or woman the possibility of marriage, education or employment. It is therefore important to design rehabilitation programs that promote individual, family and social healing, recovery, understanding and social reintegration. These programs should empower the survivors so that as they play an active and decisive role rather than a dependent 'victim' role. Families of survivors, and the community as a whole, need to be counseled in dealing with disabled persons and assisting them in the reintegration process.

Several activities have been initiated by the Government and other stakeholders under the National Steering Committee for Mine Action (NSCMA). Sri Lanka's comprehensive humanitarian Mine Action Programme was launched in 2002. The *Strategy for Mine Action Sri Lanka*, drafted by the Ministry of Nation Building and Development, is focused on resettlement and reconstruction.

Objectives:

- Reduction and elimination of the use of landmines and UXOs
- To mitigate harm caused by the use of landmines and UXOs, and enhance support services available to landmine victims and families

Time Frame for Implementation:

Year 3-5 (2008-2010) - Medium Term

Geographical Areas of Implementation:

Conflict affected areas of the country mine zones

Activities:

- The ongoing process of demining should be accelerated, with additional funds and resources directed to demining efforts.
- Mine Risk Education should be intensified, targeting welfare centers and IDP camps in addition to their usual education activities in order to inform communities. Mine Risk Education should be provided to IDPs prior to their return or resettlement.
- Educate and build awareness in communities, as survivors need the help of the community in order to successfully reintegrate.
- Assistance to mine survivors should incorporate both physical and psycho-social rehabilitation and social and economic reintegration. Community-based Rehabilitation Programs should be encouraged to seek to achieve socio-economic reintegration of disabled persons by changing societal structures, ensuring their inclusion and participation in mainstream development and welfare, and promoting and protecting their rights through equalization of opportunities. There should be scope for income generation projects, assistance delivery and social welfare benefits.
- Educate children on the landmine problem in Sri Lanka.
- Emergency financial assistance scheme should be made available for those injured and their families. The duration may depend on the extent of injury and the economic status of the injured
- There should be a surveillance system introduced to monitor injury caused by landmines

Outputs:

- Mine Risk Education programmes designed for welfare centres and IDP camps
- Development of Community-based Rehabilitation programmes for landmine survivors

- Emergency Financial Assistance Scheme for landmine victims and families
- Monitoring and recording mechanism for injuries caused by landmines

Budget:

Year 3-5 (2008-2010)	- -
Total Budget	- -

Funding status:

New Funding Required - Local / International Funding

Contact person in lead and participating agencies:

M/DM&HR - Secretary
Ministry of Nation Building, Armed Forces, National and International Organisations involved
in Mine Action/ Risk Education

CBDM 8 **Alternative and Informal Dispute Resolution Mechanisms and Improving Services from State Actors**

Agencies involved:

M/DM&HR, Ministry of Nation Building, Armed Forces, National and International Organisations involved in Mine Action/ Risk Education

Background and rationale:

Local disputes, be they ethnic, religious, political, commercial or even family, have the ability to disrupt and impair social relations and community links. Local disputes also have the potential for large-scale violence, particularly when they prey on existing social cleavages. The need for alternative and informal dispute resolution mechanisms has long been recognized and utilized, especially given the constraints and limitations of law enforcement and judicial authorities in Sri Lanka and the implications of some of the disputes. Currently a host of actors serve as dispute resolution mechanisms, including traditional mechanisms such as village elders and religious committees; governmental actors such as the Grama Sevaka or the police; local government politicians and other political actors; and NGO-established committees, which often use and strengthen already existing structures, be they local village elders or religious committees.

While recognizing the critical role these mechanisms serve, there is a clear need to evaluate the capacity of these mechanisms to function and to resolve disputes, and their long-term impact. In particular, the role these mechanisms can and do play in addressing macro-structural problems, including ethnic relations, needs to be examined. In addition, given the delays and constraints of the legal and judicial system, the opportunities for addressing disputes that these mechanisms present, and their limitations to do so should be investigated in order to develop strategies for strengthening the capacity of these mechanisms.

At present there are a number of programs to strengthen and consolidate existing mechanisms. In some instances there are efforts to create new mechanisms such as the mediation boards, so as to ease the burden of the judicial system and to provide faster service to disputants. The mediation boards have received training and financial assistance from key multilateral agencies. In others, there are efforts to create and strengthen networks between key mechanisms such as the NGOs in the Eastern Province, which have facilitated efforts to address land and other disputes. Other NGOs, religious institutions and the like, who have a presence in particular villages, have attempted to strengthen the village-level committees through training and financial assistance to help them address local disputes.

Finally, there is a need to explore the work that is already being done with regard to community policing and mediation by other organizations and to ensure that there is no duplication.

Objective:

To improve the ability of local actors to address local problems locally.

Time frame for implementation:

Year 1-2 (2006-2007) Short Term

Geographical area of implementation:

The Entire Country; with special emphasis on war-affected districts

Activities:

-The main activity is to provide mediation training for identified key local actors. This, however, has to be augmented by additional training and information sessions, and as a part of a wider structural program where relevant.

- The Grama Sevaka plays a critical role at the community level, and as a part of his/her multiple duties has to address local disputes. Providing them training and information courses in mediation and the law (particularly with regards to people's rights and changes in the law) would ensure that the GS could provide a better service and that disputes could be better managed.
- The Police are often expected to intervene in a dispute and provide interim solutions and to reduce tensions. The role the police play is particularly important in disputes that involve violence or have the potential for violence, as it may have to play the role of mediator, in order to contain a conflict and to facilitate a return to normalcy. Thus, a critical tool that is required is mediation training, which needs to be supplemented with human rights training so as to ensure that the police is sensitive to, and responds professionally to, civilians.

A more systematic rethinking of police-civilian relations is also required. Adopting a more community-policing approach that ensures greater interaction between the community and the police would better strengthen the police and the social peace. Creating a Citizens' Police Monitoring Committee is a key step in this. This committee would have two primary duties:

- To monitor police activities for which the police would have to be responsible, would allow for better relations between civilians and the police and an improvement in services. In

particular, monitoring issues such as human rights abuses, including those by the police, is critical,

- To liaise with the public, particularly during times of tension and violence the committee could play a vital role in this.
- Community policing is an urgent requirement, in the North-East in particular. It could be a vital step to improve the human rights situation, particularly with regards to obtaining redress and to contain ethnic violence, which manifests itself in the form of localized violence and killings. An effective and accessible community policing system can be especially useful in such situations. Models used in other conflict zones, such as Northern Ireland, may prove helpful in designing such a system.

Outputs:

- Mediation training relevant to specific sectors.
- Increased access to information and skills training for officials.
- Citizens' Police Monitoring Committees

Budget:

Year 1-2 (2006-2007) - SLR 35 mi (USD 0.35 mi)
Total Budget - SLR 35 mi (USD 0.35 mi)

Funding status:

New Funding Required - Local / International Funding

Contact person in lead and participating agencies:

M/DM&HR - Secretary

Institutions identified for mediation training including Police, Gram Sevakas and Ministry of Justice

CBDM 9**Facilitation of the Creation of Local Citizens Committees****Agencies involved:**

M/DM&HR, Ministry of Local Government, Provincial and Local Government Institutions, NGOs and religious leaders in the districts.

Background and Rationale:

The Ministry of Disaster Management and Human Rights would consider facilitating the creation of Citizens Committees to deal with tensions, disasters and emergency situations, facilitating linkages with local government institutions and other governmental and non-governmental sectors. The independence and autonomy of such committees must be respected.

The Citizen's Committees could also have a wider mandate - dealing with issues of ethnic and religious tensions that might occur, encouraging citizen participation in local and community development etc. A special effort should be made to involve women's participation in Citizens' Committees.

The Ministry could offer support for the activities of Citizen's Committees if they request such assistance. The assistance could be in the form of training programmes in disaster preparedness, conflict resolution and peace studies.

Objectives:

- To encourage citizen involvement, vigilance and partnership to deal with human disasters;
- To promote inter-ethnic and inter-religious harmony and understanding and respect for pluralism;

Time frame of implementation:

Years 1-2 (2006-2007) Short term

Geographical area of implementation:

The Entire Country; with priority in tsunami affected areas, and districts with a multi-ethnic character.

Activities:

- Develop a programme to facilitate the establishment of Citizen's Committees.
- Develop a programme for the mandate of the committees.
- Facilitate the activities of committees needing assistance.

Outputs:

A network of Citizens' Committees organized and focused to deal with human disasters.

Budget:

Year 1-2 (2006-2007)	- SLR 30 mi (USD 0.30 mi)
Total Budget	- SLR 30 mi (USD 0.30 mi)

Funding status:

New Funding Required - Local / International Funding

Contact person in lead and participating agencies:

M/DM&HR - Secretary
Ministry of Local Government, Provincial and Local Government Institutions, NGOs and religious leaders in the districts.

CBDM 10**Strengthening Participatory Democracy -
Local Government****Agencies involved:**

M/DM&HR, Local Government, Provincial and Local Government Institutions, and civil society organisations.

Background and rationale:

The Ministry would, in a step that is related to the wider governance and subsidiarity issues, revive debate on the issue of strengthening local government. A Special Presidential Commission on Local Government was established in the late 1990s and it published a comprehensive report that included proposals for reform. A public debate should be encouraged on these recommendations with an additional focus- the role of local government in disaster management and response. In the debate on constitutional reform that has taken place in the country since 1994, the focus of attention has understandably been on the provincial/regional tier of government as a second level of government. Local Government or the third tier of government is extremely important too and indeed in the plural north and east of the country will have to play an important role in protecting the rights of regional minorities.

The powers of local government institutions in Sri Lanka when compared with institutions in other democracies are relatively weak despite the fact that Sri Lanka has a long tradition of local government. There is a need for radical law reform to revitalize local government, equip such a reenergized local government regime to respond to modern demands and challenges including the response to disasters, and give them legal protection from unjustified encroachment on their powers from the first two tiers of government.

As a general policy, when initiating discussion on issues, rather than embarking on a process that has a “reinventing the wheel approach”, the Ministry would always stress the importance of institutional memory and a non-partisan approach to the issue by building on existing studies, reports and moving ahead, rather than starting at the beginning. Such an approach particularly in the areas of local government reform, media reform and on a freedom of information bill is important as there are many excellent reports and proposals on these subjects produced in the mid to late 1990s which remain unimplemented.

Objectives

- To strengthen local government and participatory democracy;
- To facilitate constitutional reform for conflict resolution;
- To implement the proposals of the Commission on Local Government Reform- 2000

Time frame for implementation

Year 1-2 (2006-2007) - Short term

Geographical area of implementation:

The Entire Country

Activities:

- Engage in a literature survey of studies on local government, reform proposals.
- Conduct a series of seminars on the Commission Report 2000.
- If necessary have a supplementary study to consider more specifically and in greater detail- the electoral system, women's participation and disaster management with reference to local government.

Outputs:

Strengthened local government institutions and increased public participation in local government reform.

Budget:

Year 1-2 (2006-2007)	- SLR 12 mi (USD 0.12 mi)
Total Budget	- SLR 12 mi (USD 0.12 mi)

Funding status:

New Funding Required - Local / International Funding

Contact person in lead and participating agencies:

M/DM&HR - Secretary
Local Government, Provincial and Local Government Institutions, and Civil Society Organisations

CBDM 11**Creating a Special Disaster Response Ombudsmen****Agencies involved:**

M/DM&HR, Ministries of Constitutional Affairs and Justice, the Human Rights Commission, the Ombudsman

Background and Rationale:

Many countries have in recent times moved in the direction of creating specialist Ombudsmen (Ombudsmen). In Sri Lanka too after many years of dependence on a general Ombudsman, specialist Ombudsmen in areas such as tax and insurance have been established. Given the fact that in Sri Lanka disasters, both natural and human, are not isolated events but continuing events that have to be prepared for, an Ombudsman to deal with such issues, respond to complaints, grievances, help in the provision of information, who develops an expertise in the area, will be useful. Such an Ombudsman should be independent and have the necessary capacity and experience to perform his/her functions.

The creation of such a specialized Ombudsman is in no way meant to undermine the powers of existing institutions such as the Human Rights Commission which deal with allegations of discrimination and injustice. The Special Disaster Response Ombudsman will focus on a particular set of issues, develop expertise and experience in dealing with the kinds of issues that arise in situations of conflict and disaster and relieve the Human Rights Commission of some time consuming work so that it can concentrate on its larger mandate more effectively. In any event, a citizen will have the option of applying direct to the Human Rights Commission or pursuing other options as well. There is a need to explore the feasibility of mechanisms such as the Disaster Relief Monitoring Unit (set-up as an auxiliary body to the Human Rights Commission for dealing with tsunami aftermath) as well as to ensure minimum duplication between the work of the Ombudsman and such mechanisms.

Objectives:

To provide an independent and effective redress mechanism for complaints/grievances in relation to disasters.

Time frame for implementation:

Year 1-2 (2006-2007) Short Term

Geographical area of implementation:

The Entire Country

Activities:

- Study the viability to creating the special ombudsman by engaging in a comparative study of specialist ombudsmen.
- Draft legislation

Outputs:

A specialized grievance /dispute resolution mechanism that has capacity to deal with issues of a particular nature that arise due to natural and human disasters

Budget:

Year 1-2 (2006-2007)	- SLR 10 mi (USD 0.10 mi)
Total Budget	- SLR 10 mi (USD 0.10 mi)

Funding status:

New Funding Required - Local / International Funding

Contact person in lead and participating agencies:

M/DM&HR - Secretary
Ministries of Constitutional Affairs and Justice, the Human Rights Commission,
the Ombudsman

CBDM 12**Issues of Subsidiarity in Situations of Emergency****Agencies involved:**

M/DM&HR, Ministry of Provincial Council and Local Government, Local Administration, Provincial Councils, RADA, Civil Society Groups

Background and rationale :

Recent governments of Sri Lanka have been committed to devolution of power. However, over the years there has been also a trend towards the recentralisation of power at the center. As Sri Lanka continues its search for a political solution to the island's ethnic conflict based on devolution of power and power sharing, it will be useful to examine the country's political culture and responses to challenges to ascertain whether devolution of power is viable and practicable in reality.

The response to the tsunami should be critically assessed with a view to learning lessons about responding to national calamities in the context of a constitutional architecture that provides for devolution of power and subsidiarity. At a more specific level, and as an example of the more general crisis of governance that exists in the country, the Ministry would, in a spirit of constructive criticism, review the post tsunami governmental response from a governance perspective. Some of the serious criticisms of the post-tsunami policy response were-

- a) That it was a top-down, highly centralized response that undermined principles of subsidiarity.
- b) That there was little, if any, people's consultation, opportunities for the victims of the tsunami to participate in the design of their rehabilitation programmes and that indeed many officials in TAFREN and other governmental agencies saw an opportunity for top-down social engineering in the form of model tourist centers, modern towns etc. with little or no concern for the people who lived in those areas. (See the People's Consultation Report of December 2005 facilitated by MONLAR)
- c) Policies such as those relating to the so-called Buffer Zone caused confusion, were incompatible with human rights, and caused delays with respect to the construction of houses.

Objectives:

To develop a disaster management response that is efficient, responsive and in keeping with constitutional values and devolution of power.

Time frame of implementation:

Year 1-2 (2006-2007) Short Term

Geographical areas of implementation:

The Tsunami-affected areas

Activities:

- Study the immediate post tsunami-responses in Sri Lanka and other affected countries;
- Engage in a comparative study of disaster responses in India, Indonesia with particular reference to devolution of power and principles of subsidiarity;
- Develop an action plan for future responses that involves the second and third tiers of government.

Outputs:

- A more devolution-sensitive response to national disasters.
- Deliberation on a sensitive and important issue that will have a bearing on future constitutional reform for conflict resolution

Budget:

Year 1 - 2 (2006-2007) - SLR 10 mi (USD 0.10 mi)
Total Budget - SLR 10 mi (USD 0.10 mi)

Funding status:

New Funding Required - Local / International Funding

Contact person in lead and participating agencies:

M/DM&HR - Secretary
Ministry of Provincial Council and Local Government, Local Administration, Provincial Councils,
RADA, civil society groups

CBDM 13 Strengthening Human Rights in Tsunami Recovery

Agencies involved:

M/DM&HR, Ministry of Disaster Management and Human Rights, Human Rights Commission and RADA.

Background and rationale:

The post-tsunami scenario has brought various human rights issues into the forefront. While issues like resettlement, compensation, transitional and permanent housing and livelihood recovery are distinct rehabilitation priorities; they each also have human rights dimensions and human rights implications to them. These aside, there are specific human rights concerns of the more vulnerable among the tsunami-affected, such as women, children, the elderly, the disabled and the conflict-affected. Furthermore, there are issues relating to the rights of affected-persons to information, consultation, access and access to redress with regard to the rehabilitation work being carried-out in their name by the state, INGOs, NGOs and CBOs. Finally, there are issues relating to ensuring that this rehabilitation work is being carried out with sensitivity to human rights, in a participatory, equitable, non-discriminatory, transparent and accountable manner by all persons.

There is considerable and innovative work being done by several human rights organizations on many of the issues raised above. However, there is still a tremendous need and tremendous potential for strengthening human rights in relation to tsunami recovery in the country in the following realms:

- To ensure, protect and advance the human rights of the tsunami-affected throughout the recovery phase
- To ensure, protect and advance the human rights of the most vulnerable within the affected populations, e.g. women, children, disabled, conflict-affected etc.
- To respond to, investigate and redress the human rights concerns and complaints of the tsunami-affected in a systematic and timely manner.
- To further develop the capacities of recovery stakeholders (public, civil and private sectors) to carry out their work in more rights-friendly and rights-based ways.
- To further develop the capacities of the affected people to play a more meaningful role in their own recovery.

Objectives:

- Capacities of the duty-bearers (in this instance, recovery actors in public, civil and private sectors) to advance human rights and to adopt rights-based approaches in their recovery work developed
- Capacities of the claim-holders (in this case, those persons affected by the tsunami) to ensure, protect and advance their rights in the recovery process developed

Time Frame of implementation:

Year 1-2 (2006-2007) Short Term

Geographical area of implementation:

The Tsunami-affected Districts

Activities:

- Human Rights Help-Desks in Tsunami-affected districts
- Capacity Development of Duty-Bearers
- Capacity Development of Claim-Holders (Recovery Watch)

Output:

Effective mechanism for addressing grievances and sharing information in place and fully functional

Budget:

Year 1-2 (2006-2007) - SLR 50 mi (USD 0.5 mi)

Total Budget - SLR 50 mi (USD 0.5 mi)

Funding status:

New Funding Required-- Local / International Funding

Contact person in lead and participating agencies:

M/DM&HR - Secretary

Ministry of Disaster Management and Human Rights, Human Rights Commission and RADA

Chapter 8

Public Awareness, Education and Training

8.1 Key Issues

An important aspect of any disaster risk management programme is to anticipate the requirements for disaster related public awareness, education and training. The planning process will only be effective if those who are the ultimate beneficiaries know how to mitigate disasters, respond in times of disasters and develop capacities to cope in their aftermath. For this reason, an essential part of a disaster risk management plan is the education of those who may be threatened by potential disaster events.

At present, many government organisations, NGOs and CBOs conduct DRM related training. Efforts are often duplicated and training is conducted without appropriate resources (in terms of training materials and tools). Moreover, there is no apparent coordination with regard to the relevance of training and consistency of content.

There is no proper needs analysis and systematic target audience segmentation, and hence no customised training to bring out relevant learning outcomes amongst people who serve in different capacities. There is currently no capacity enhancement initiative for DRM trainers locally and a general lack of coordinated allocation of available regional training opportunities for sustaining the capacity enhancement of trainers.

8.2 Strategy

Probable solutions in the short-medium term are as follows:

- i. There is a need to formulate a policy which brings together all DRM trainings under the supervisory role of the DMC and creates a corresponding need for MOUs with partner organisations to implement training.
- ii. A mechanism for quality assurance of DRM training can be ensured and the evaluation of effectiveness made mandatory as an institutional endeavour to be achieved by partners undertaking this activity for the sector.

- iii. Development of partnerships with regional institutions and universities to upgrade the training material and for development of a cadre of trainers on different subjects will be useful as a quick solution. Participation of local professionals in regional training events conducted by such institutions as well as having a program for institutionalization of some of the regional training courses at national level with suitable modifications will be an appropriate strategy.
- iv. The manuals and guidelines developed under technical subject areas such as construction in hazard prone areas, land use planning etc can serve as training and awareness material. Developing a culture for web based information sharing can address some of the other needs which cannot be met through the traditional capacity building programs.

Establishment of the 'National Disaster Safety Day' annual commemorations as a high level event in the annual government calendar is one of the approaches that can bring about a coordinated and effective public awareness campaign. It can be an annual event organised by the DM ministry and all stakeholders including school children and community members can actively participate in such an event. In establishing an integrated educational training programme, it should be recognised that education is often a two-way process in the field of disaster preparedness. The main programmes identified under the theme of public awareness, training and education are:

- i. *Promote Public Awareness at National Level*
This can be done through effective implementation of a National Public Awareness Programme for disaster preparedness.
- ii. *Promote Awareness among School Children*
This can be achieved through the introduction of DM related subjects in the school curriculum, and through awareness and resource materials in all 3 languages .
- iii. *Promote Awareness and Train University Graduates through Integration of DRR in University Curriculum*
The integration of DM subjects at university level in disciplines such as urban planning, civil engineering, architecture would help promote awareness. Integration of DM subjects at university level in these disciplines has already been implemented in some universities. In Ruhuna University DM subjects have been integrated in the Geography Department. In other departments of all other universities too, this must be promoted.
- iv. *Increased Awareness of DM Related Subjects among School Children*
DM would not be a new subject area in the curriculum. The content will be integrated into existing subjects instead. The integration of DM in the Geography Syllabus in 2004 as a joint venture between National Institute of Education (NIE) and Sri Lanka Urban

Multi-hazard Disaster Mitigation Project (SLUMDMP) may need re-visiting. NBRO has developed a series of books to introduce landslide related issues to school children which can be used as additional reading material/ activity series for different grades.

v. *Promote Awareness among Professional Groups, Key Decision Makers through Training and Short Courses*

This would involve training on disaster preparedness and reduction in entry level, refresher and in-service training of government employees at various levels.

vi. *Increase Capacity among Key Institutions through Training of Officials and Training Aids/Tools*

vii. *Integrate DM Training Curriculum in Continuing Education*

DM has to be integrated into development initiatives. Professionals who are involved in planning, implementation, financial management etc. need to understand the implications of DM to sustain development efforts.

viii. *A National Event under the Patronage of the President and Council Members of the NCDM to Launch Countrywide Awareness Programmes*

In other countries in the region a National Disaster Safety Day has been declared by the governments as an effective way of creating awareness with the participation of the general public and school children. Various activities can be implemented in such an event, and events carried out as awareness programmes.

ix. *Nationwide Awareness Campaign on Public Safety*

8.3 Project Proposals

The following are the main projects identified under the theme of public awareness, training and education to be implemented over the next 10 years:

- PA-1 Awareness through Disaster Safety Day
- PA-2 National Public Awareness Programme
- PA-3 Awareness through schools and school children
 - PA-3.1 Integration of DRM into school curriculum
 - PA-3.2 School children awareness program
- PA-4 Awareness through University Curriculum and Continuing Education
 - PA-4.1 Integration of DM in graduate and post-graduate curriculum in university education
 - PA-4.2 Awareness by integrating DM training in continuing education
- PA-5 Training for Government Employees
- PA-6 Training for Emergency Preparedness and Response
- PA-7 Enhancing Training Capacities
- PA-8 Special Awareness Programmes
- PA-9 Nationwide Awareness Campaign on Public Safety

PA-1

Awareness through Disaster Safety Day (26 Dec)

Agencies involved:

DMC, MoE, DM line agencies, Provincial and District Administration, Police and Armed Forces, Fire Brigade, ITN, and other television media, SLBC, print media, SLRCS and NGOs in DM

Background and rationale:

A National Disaster Safety Day event is an effective way of creating awareness with the participation of the general public and school children. Street / stage drama, processions, public meetings, seminars, awards and other various techniques can be used during such an event.

SLUMDMP in collaboration with Ratnapura Municipal Council and Sabaragamuwa Provincial Council organised Disaster Safety Day programmes on three occasions during its project period to create public awareness. Although a recommendation was proposed to declare a National Disaster Safety Day it was not successful as DRM did not have a legal backing at the time.

It is noteworthy to mention that in some countries of the region a National Disaster Safety Day has been declared and events are organised throughout a week or a fortnight starting from the National Disaster Safety Day. In Nepal for instance the National Disaster Safety Day falls on 15th January of every year in memory of the people killed in a major earthquake in 1934. In Bangladesh, the National Disaster Safety Day is celebrated on 31st March every year.

It is proposed to initiate this national event under the patronage of HE the President and council members of the National Council for Disaster Management (NCDM) to launch countrywide awareness after declaring the National Disaster Safety Day. A suitable day may be 26th December every year in memory of the people killed in the devastating Tsunami. It is also proposed to solicit participation of stakeholders and to appreciate inputs through national awards.

Objective:

To create awareness and emphasise importance of disaster preparedness; Nationwide awareness of the importance of disaster management through a National Disaster Safety Day

Time frame:

Year 1-2 (2006-2007)

Year 3-5 (2008-2010)

Year 6-10 (2011-2015)

Annual event starting 2006. Date to be finalized.

Geographical area of implementation:

Initially in the capital, Colombo, and may be rotated among other cities.

Activities:

Year 1 - 2 (2006 - 2007)

- a. Issuing of a gazette notification on establishment of “National Disaster Safety Day”
- b. Establish a National Committee for the event convened by the DMC
- c. Implement a National Award Scheme for disaster management initiatives and best practices at various levels (such as school competitions, institutional initiatives for preparedness, mitigation and response)
- d. Evaluate year round activities for national awards
- e. Organization of the national disaster safety day to create awareness under the patronage of HE the President and NCDM
- f. Carry out evaluations through independent personnel

Year 3 - 5 (2008 - 2010)

Annual event as above

Year 6 - 10 (2011 - 2015)

Annual event as above

Output:

“National Disaster Safety Day” annual commemorations established as a high level event in the government calendar

National awards to catalyze DM activities

Budget:

Year 1 - (2006)	- SLR 3.0 million (USD 0.03 mi)
Year 2-10 - (2007-2015)	- SLR 18.0 million (USD 0.18 mi)
Total budget	- SLR 21 million (USD 0.21mi)

Funding status:

New Funding Required.

Contact persons in lead and participating agencies:

Director General, Disaster Management Centre

Tel: 011-2441570 /73

Fax: 011-2441571

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National Committee for National Disaster Day

PA-2

National Public Awareness Program

Agencies involved:

DMC, DM line agencies, Provincial and District Administration, MoE, Media Channels, NSF, NGOs, Samurdhi Network, Private Sector, SLRCS

Background and rationale:

An informed public is better prepared to adapt and respond to danger. A well-planned public education programme can make the disaster warning process more effective. SLUMDMP carried out public awareness programmes in its demonstration city districts and provinces. National Disaster Management Centre of the then Ministry of Women's Empowerment and Social Welfare conducted awareness programmes throughout the country for SLAS officers (District / Divisional Secretaries, Social Services Officers, Grama Niladharis etc.) and the general public. In this context it is proposed to initiate a well organized public awareness programme.

Objectives:

To effectively implement a National Public Awareness Program to build a culture of safety from disasters focused on a multi hazard scenario:

Time frame of implementation:

Year 1-2 (2006-2007) - Short term
Year 3-5 (2008-2010) - Medium term
Year 6-10 (2011-2015) - Long term

Geographical area of implementation:

Nation-wide campaign; hazard-specific community-based campaigns in disaster-prone areas

Activities:

Year 1 - 2 (2006 - 2007)

- a. Carry out appropriate and relevant awareness to targeted disaster-prone communities
- b. Create awareness among general public on importance of preparedness and mitigation
- c. Facilitate the disaster warning process to be more effective.
- d. Help the public and all stake holders to understand better the basic, practical measures for prevention, mitigation, and preparedness and to do the right thing when disasters strike.
- e. Serve to dissipate some of the traditional fatalism about natural calamities.

- f. Instill the willingness to live with the likelihood of disasters in communities
- g. Implement campaign(s)
- h. Carry out evaluations through selected independent personnel

Year 3 - 5 (2008 - 2010)

- i. Implement campaign(s)
- j. Evaluate campaign and identify future needs, formulate follow up campaign

Year 6 - 10 (2008 - 2010)

- k. Implement follow up campaign
- l. Evaluate campaign and identify future needs

Outputs:

Situation analysis and need analysis reports

Audience segmentation

Campaign programmes with details of implementation

Campaign material, posters, video material, audio material, , print based material etc implementation schedules.

Evaluation reports

Budget:

Year 1-2 (2006-2007)	- SLR 50 million (USD 0.50 mi)
Year 3-5 (2008-2010)	- SLR 45 million (USD 0.45 mi)
Year 6-10 (2011-2015)	- SLR 50 million (USD 0.50 mi)
Total Budget	- SLR 145 million (USD 1.45 mi)

Funding status:

Departmental budget required; Donor and collaborator funding to be sought for campaign design and implementation

Contact persons in lead and participating agencies:

DMC:

Director General, Disaster Management Centre

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PA-3.1

Integration of DRM into School Curriculum

Agencies involved:

NIE, MoE, DMC, GTZ, ADPC, ADRC

Background and rationale:

Disaster Risk Management would not be a separate subject area in the curriculum. Instead the content will be integrated into existing subjects as relevant. For example, integration will be into subjects such as Geography, Environment, History, Science etc. It can be in subjects such as even languages (e.g., essay topics, poetry), drama etc. The DM curriculum integrated to Geography Syllabus in 2004 as a joint venture between NIE and SLUMDMP may need re-visiting here. Under this project another activity was including Disaster Management as a topic for developing projects and assignments by students at GCE(AL), under which the AL teachers were provided initial training. This was in collaboration with the NIE and was introduced around 5 years back. Refresher teacher training will be required which needs to be a regular activity. These will lead to increased awareness of DM related subjects among school children and this will help create generation of knowledge about DRM and preparedness among children in the future generations too. This is especially vital with regard to very infrequent but very destructive hazards such as tsunami or major dam related hazards.

Objectives:

To assist and continue the ongoing integration of DM content into school curriculum with all related activities including teacher training

Time frame of implementation:

Year 1-2 (2006-2007) -Short term

Year 3-5 (2008-2010) - Medium term

Year 6-10 (2011-2015) - Long term

The chronology of content integration will merge with NIE time frame of curriculum revision. Similarly the process of printing school material will adhere to current NIE practice.

Geographical area of implementation:

The Entire Country

Activities:

Carry out following activities in a phased out manner as appropriate to suit the NIE programme

- a. Through NIE and Ministry of Education to integrate Disaster Management content into existing subjects as relevant.
- b. In the process review Disaster Management curriculum integrated to the Geography Syllabus in 2004 by NIE and SLUMDMP
- c. Develop school curriculum for Disaster Management and its implementation
- d. Collate print and video materials available with UN, USAID, GTZ, ISDR, FEMA, ADRC, ADPC and other disaster management institutes and screen for suitability of use within schools.
- e. Continue the activity where DM was included as a topic for developing projects and assignments by students at GCE(AL)
- f. Training of Teachers for DM teaching subjects where curriculum is integrated and for GCE(AL) projects and assignments
- g. Carry out evaluations after implementing different phases of activities

Outputs:

School text books on different subjects with disaster management content integrated and DRM included in school teaching curriculum

Teacher training manuals

Supplementary material for class rooms

Budget:

Year 1-2 (2006-2007)	- SLR 21 million (USD 0.21 mi)
Year 3-5 (2008-2010)	- SLR 05 million (USD 0.05 mi)
Year 6-10 (2011-2015)	- SLR 50 million (USD 0.50 mi)
Total Budget	- SLR 76 million (USD 0.76 mi)

Funding status:

On-going activities covered by GTZ. Additional funding required.

Contact persons in lead and participating agencies:

Lead Agencies:

Director General, Disaster Management Centre

Director General, NIE ; GTZ

PA-3.2

School Children Awareness Programme

Agencies involved:

Disaster Management Centre, National Science Foundation (NSF), NIE, MoE, Dept. of Probation & Child Care, UNICEF, Save the Children, SLRCS, other partner agencies

Background and rationale:

SLUMDMP has already carried out a pilot project in community animation through school children which has clearly established the potential for such work. Under this activity 15 schools were selected where school societies were formed and children were encouraged to carry out various activities related to disasters prevalent in the surrounding areas. Activities included rain fall monitoring with rain gauges, information gathering related to landslide or flood disasters which had taken place earlier, etc. which increases awareness as well as sharpen their knowledge about DRM.

The National Disaster Management Centre of the then Ministry of Women's Empowerment and Social Welfare also conducted school awareness programmes in selected schools of the country and conducted essay and art competitions.

The initiatives could be replicated in other severely prone areas initially and subsequently in other areas making them mandatory in collaboration with the MoE. These could be enriched with awareness material in print, video and multimedia. These can be supplemented with half-day awareness programmes focusing on preparedness for possible disasters in the area, community based mitigation, and other selected titles decided upon by the DMC, MoE and NIE. District-wise or all-island Essay and Art competitions, Drama competitions, debates are other possible activities under organised campaigns.

One major activity under this initiative is development of School Emergency Response Plan. The higher grade children can be involved in the development of School Emergency Response Plans based on guidelines provided by DMC and under supervision of the staff. Training on these has to be provided to staff. DM can be an extra curricular activity in schools through Scout and Girl Guide movements for training on Medical First responders and SAR parties.

These will lead to increased awareness of disaster management related issues among school children and this will help create generation of knowledge about DRM and preparedness in the future generations too. With regard to infrequent but very destructive hazards such as tsunami or major dam related hazards etc, this is especially vital.

Objectives:

To create awareness in the younger generation and to achieve community animation through school children

To introduce school risk management clubs for activities by children related to DRM

To develop School Emergency Response Plans making them mandatory

Time frame of implementation:

Year 1-10 (2006-2015) - Short, Medium and Long term

Geographical area of implementation:

The Entire Country

Activities:

Year 1 - 2 (2006-2007)

- a. Community animation through school children (eg: SLUMDMP).
- b. Propose school risk management clubs/ societies and activities under extra curriculum activities.
- c. School based community outreach through school societies
- d. Production of pamphlets, posters, brochures
- e. Production of appropriate videos for awareness and instruction
- f. Conducting training courses, seminars, workshops for school children and teachers
- g. Introduce development of School Emergency Response Plan in phase I as demonstration activities in selected schools

Year 3 - 5 (2008-2010)

- h. Interactive CDs
- i. Conducting training courses, seminars, workshops for school children and teachers
- j. Introduce development of School Emergency Response Plan; Replicate demonstration activities of phase I in other selected schools

Year 6- 10 (2011-2015)

- k. Interactive CDs
- l. Conducting training courses, seminars, workshops for school children and teachers
- m. Introduce development of School Emergency Response Plan; Replicate demonstration activities of phase I and II in all schools making it mandatory

Outputs:

School societies established and made sustainable
A generation of young community animators for disaster reduction in place
Good practices documented on video and print; Awareness material
School awareness campaign details for regular implementation with improvements
Guidelines for School Emergency Response Plans
School Emergency Response Plans

Budget:

Year 1-2 (2006-2007)	- SLR 5 million (USD 0.05 mi)
Year 3-5 (2008-2010)	- SLR 20 million (USD 0.20 mi)
Year 6-10 (2011-2015)	- SLR 30 million (USD 0.30 mi)
Total Budget	- SLR 55 million (USD 0.55 mi)

Funding status:

Local funding required from DMC budget, from NSF and;
Additional International funding required

Contact persons in lead and participating agencies:

Director General, Disaster Management Centre
Chairperson, NSF

PA-4.1**Integration of DM in Graduate and Post-Graduate Curriculum in University Education****Agencies involved:**

DMC, UGC, Universities

Background

After integrating DM content into the school curriculum it is mandatory to provide opportunity to continue it in tertiary education. Under the SLUMDMP initiatives Faculty of Architecture of University of Moratuwa has already integrated the subject initially into its post graduate courses followed by the degree courses in Town Planning, Architecture and Building Economics. University of Ruhuna has also completed the integration in the Department of Geography, in general and special degree courses in Geography. University of Peradeniya has already commenced a post graduate Masters course in DM. There must be support to these endeavours in terms of providing expertise and other resources for their sustainability.

At the same time integration has to be promoted in other departments of all universities. This could be taken up in a phased manner also incorporating lessons learned in the above mentioned integrations. The integration must be followed up by promoting the degree and PG students in selecting DRM related projects and assignments in their course works and final theses. In the Faculty of Architecture of University of Moratuwa this is already taking place.

In addition, universities must be encouraged to take up research work in this subject area by associating them in activities of DMC and partner agencies.

Objectives:

- To integrate disaster risk management in university education of various disciplines in courses which have not been taken up so far in a phased out manner
- To promote degree and PG students in selecting DRM related projects and assignments in their course works and final theses
- To organize short courses for university staff, undergraduate / post graduate students
- To provide resource inputs for all above courses
- To provide training in local / regional programmes of institutions such as ADPC and ADRC for selected staff members of selected universities under each phase

Time frame of implementation:

Year 1- 10 (2006-2015) - Short, Medium and Long term

Geographical area of implementation:

The Entire Country

Activities:

Year 1 -2 (2006-2007)

- a. Discussion with the UGC and university authorities on integration of DRM subjects in existing under-graduate level courses.
- b. Initiate integration in universities / departments who have already shown willingness to share materials and modules from other departments which have already completed integration
- c. Provide resource inputs
- d. Provide training for selected staff members

Year 3 -5 (2008-2010)

- e. Initiate integration in other universities / departments
- f. Continue training for other staff members
- g. Development of short courses or integration of course material in existing courses
- h. Provide resource inputs.

Year 6- 10(2011-2015)

- i. Initiate integration in other universities / departments that were not covered under Phases I or II
- j. Continue training for other staff members
- k. Continue short courses
- l. Post graduate / post doctoral studies for capacity building in Disaster Preparedness, GIS in disaster zones, Seismology, Modeling, Oceanography, Marine biology, Coastal engineering, and other health related issues

Outputs:

Disaster management curricula and study material available for different departments / universities

Curricula and materials for short courses available

Selected staff trained in local and regional programmes

Budget:

Year 1-2 (2006-2007)	- SLR 15 million (USD 0.15 mi)
Year 3-5 (2008-2010)	- SLR 15 million (USD 0.15 mi)
Year 6-10 (2011-2015)	- SLR 20 million (USD 0.20 mi)
Total Budget	- SLR 50 million (USD 0.50 mi)

Funding status:

International funding required for experts and resources

Contact persons in lead and participating agencies:

DMC

Director General, Disaster Management Centre;

UGC, Universities, NISD

PA-4.2

Awareness by Integrating DM Training in Continuing Education

Agencies involved:

DMC, SLIDA, CHPB, SLILG

Background and rationale:

DM has to be integrated into development initiatives. Professionals who are involved in planning, implementation, financial management etc. need to understand implications of DM to sustain development efforts.

CHPB has already commenced natural disaster mitigation training for technical categories of personnel under the SLUMDMP project activities. These were organised as short courses (varying from 2 to 7 days). Participants from professions such as town planning, architecture, engineering, and finance have participated in these programmes. SLIDA had been selected as the training agency for administrative and finance category of staff and conducting training on annual basis. CHPB also integrate DRM in its other course such as Construction Management and custom designed courses for various agencies (RDA, NHDA)

It is suggested to review earlier training materials and develop courses with curricula and materials and organize a training programme utilizing these agencies with monitoring by the DMC.

Objectives:

To create awareness on DRM issues in professional groups

Time frame of implementation:

Year 1-5 (2006-2010) - Short and Medium term

Geographical area of implementation:

District, Provincial, and National level focus

Activities:

Year 1 -2 (2006-2007)

- a. Discussion with the authorities from relevant agencies
- b. Carry out a need and relevancy analysis for different professional groups
- c. Review training curricula and materials of courses already conducted by various agencies

- d. Develop short training courses, training of trainers
- e. Conduct training courses on pilot basis
- f. Evaluate the courses and review and revise curricula / materials

Year 3 - 5 (2008-2010)

- g. Continue short training courses
- h. Integration of course material in existing courses of different training agencies. Provide resource inputs.
- i. Evaluation, modifications and ensuring sustainability

Outputs:

Needs analysis reports
 Training modules
 Implementation schedules
 Numbers of professionals trained
 Evaluation reports

Budget:

Year 1-2 (2006-2007)	- SLR 10 million (USD 0.10 mi)
Year 3-5 (2008-2010)	- SLR 10 million (USD 0.10 mi)
Total Budget	- SLR 20 million (USD 0.20 mi)

Funding status:

International Funding Required

Contact persons in lead and participating agencies:

DMC: Director General, Disaster Management Centre
 Professional training institutes - SLIDA, CHPB, SLILG

PA-5

Training of Government Employees

Agencies involved:

DMC with National Training Partners- CHPB, SLIDA, SLILG, National Institute of Social Development (NISD) etc., Service Training Institutes of various Ministries, MDTUs, NGOs, SLRCS, Management Development & Training Centres (MDTC) of PCs, MCs, Fire Brigade, Police and Armed Forces

Background and rationale

Institutional preparedness and response planning to be in place. CHPB has already commenced natural disaster mitigation training for technical categories of personnel under the SLUMDMP project activities. SLIDA had been selected as the training agency for administrative category of staff and conducting training on annual basis. NDMC formerly under the Ministry of Social Services and Social Welfare also conducted training for administrative officers. Resource persons of these agencies were given training as trainers for these programmes. Under the DMC programme SLILG, National Institute of Social Development (NISD), Provincial Councils Training Units have been identified as training institutes for DRM training for different personnel.

It is suggested to review earlier training materials and develop courses with curricula and materials and organize a training programme utilizing these agencies with monitoring by the DMC.

Objectives:

To create awareness on DRM issues among government employees

Time frame of implementation:

2006-2010: Short and Medium term: 5 years

Geographical area of implementation:

District, Provincial, and National level focus

Activities:

Year 1 -2 (2006-2007)

- a. Discussion with the authorities from relevant agencies
- b. Carry out a need analysis and relevancy for different professional groups
- c. Review training curricula and materials of courses already conducted by various agencies

- d. Add modules in in-service training of all government officials.
- e. Develop short training courses, training of trainers
- f. Conduct training courses on pilot basis
- g. Evaluate the courses and review and revise curricula/ materials
- h. Develop partnership with Regional DM institutions and adapt material in local context

Year 3 - 5 (2008-2010)

- i. Develop new training modules to meet additional demands.
- j. Continue short training courses from Phase I
- k. Integration of DRM in existing courses of different training agencies. Provide resource inputs.
- l. Evaluation, modifications and ensuring sustainability

Outputs:

Training on disaster preparedness, mitigation and response at entry level, refresher and in-service training of government employees at various levels

Training modules

Implementation schedules, trained numbers of professionals

Budget:

Year 3-5 (2008-2010) - SLR 10 million (USD 0.10 mi)

Year 6-10 (2011-2015) - SLR 10 million (USD 0.10 mi)

Total Budget - SLR 20 million (USD 0.20 mi)

Funding status:

International Funding Required

Contact persons in lead and participating agencies:

DMC: Director General, Disaster Management Centre

Professional training institutes - SLIDA, CHPB, SLILG

Other partners, line agencies

PA-6

Training for Emergency Preparedness and Response

Agencies involved:

DMC, MoDM, Donor Agencies, UN Agencies and programmes such as APELL, NWSDB, Provincial Health Departments

Background and rationale:

The recent disasters have made it very clear that the country must have good emergency preparedness and response systems in place to respond when disasters strike. In the aftermath of the 2003 landslide and flood disaster District Disaster Preparedness and Response Plans were developed with the intervention of the UNDP with the Ministry of Women's Empowerment and Social Welfare. Presently such plans are being developed in other districts and divisions as well. These plans require personnel with different skills and also various response groups who have been identified have to be given training.

While in some areas training can be provided utilizing the resources available with selected NGOs for some areas of activities no capacity is available to impart training. For example, in some MCs even when they have the fire fighting machines they do not have trained operators or trained firemen for fire fighting.

Therefore, institutional capacity must be developed to sustain preparedness and response to be in place as required.

Objectives:

- Institutional Capacity Enhancement for preparedness and response by
 - Establishing a multi-disciplinary fire & rescue training centre
 - Training officials in emergency preparedness and response

Time frame of implementation:

Year 1-2 (2006-2007) - Short term

Geographical area of implementation:

The Entire Country

Activities:

Year 1 -2 (2006-2007)

- a. Establishing national training center for emergency response
- b. Training courses for operational staff including fire brigades outside Colombo
- c. Training of public/ private sector organizations and Volunteer Emergency -Response Teams

Outputs:

Needs analysis reports, Training modules available

National Training Centre established Training systems for Emergency Preparedness and Response established

Budget:

Year 1 -2 (2006-2007) - SLR 70 million (USD 0.70 mi)

Total Budget - SLR 70 million (USD 0.70 mi)

Funding status:

International Funding Required

Contact persons in lead and participating agencies:

DMC

Director General, Disaster Management Centre

PA-7

Enhancing Training Capacities

Agencies involved:

DMC, MoDM, Donor Agencies, Regional and international training and capacity building institutions

Background and rationale:

Various agencies such as SLIDA, CHPB, NBRO, and NDMC have conducted training related to DRM in the past eight years or so. However the quality of training is not very consistent. Therefore these agencies need enhancement of capacities by way of enhancing resources and skills of trainers. ADPC has developed with national agencies such as SLIDA, CHPB, NBRO, and NDMC, various training courses under Asian Urban Disaster Mitigation Programme (AUDMP) such as Natural Disaster Mitigation (NDM), Community Based Disaster Risk management (CBDRM), courses on Construction in Disaster Prone Areas, courses on Land use Planning in Disaster prone areas.

Also currently ADPC is in discussions with SLILG to conduct training related to Urban Governance and DRM. In the past several medical doctors and health sector professionals have attended courses related to public health and emergencies. However all such training courses are usually limited to project based activities and need to be institutionalised as national courses. ADPC could help the selected training agencies in enhancement of capacities by way of provision of resource inputs, training curriculum development and enhancement of skills of trainers.

Objectives:

To increase capacity of faculty members to obtain knowledge on the state of the art technology and skills related to DRM subject and to enhance resources for training

Time frame of implementation:

Year 1-2 (2006-2007) - Short term

Geographical area of implementation:

The Entire Country

Activities:

Year 1 -2 (2006-2007)

- a. Discussion with International Training and capacity building institutions for more training opportunities.

- b. Develop partnership arrangement with Regional Institutions regularly used to conduct DM training courses at regional level.
- c. Conduct needs assessments
- d. Develop a fellowship scheme for developing a competent cadre of trainers.
- e. Regular TOT programs at regional and national level
- f. Enhance resources for training by improving the curriculum of existing courses and developing new courses.
- g. Increase the capacity of faculty members through knowledge enhancement on the state of the art technology and skills related to DRM subject

Outputs:

Training capacities of existing training organizations enhanced

Budget:

Year 1 - 2 (2006- 2007) - SLR 200 million (USD 2.0 mi)

Total Budget - SLR 200 million (USD 2.0 mi)

Funding status:

International Funding Required

Contact persons in lead and participating agencies:

DMC

Director General, Disaster Management Centre

PA-8

Special Awareness Programmes

Agencies involved:

DMC, Donor Agencies, Regional and international training and capacity building institutions

Background and rationale:

Even though Sri Lanka has faced various disastrous situations in the past, the December 2004 Tsunami has made it very clear that the country is also prone to infrequent, potential high consequence events. At any given point of time the country could face an event such as forest fires, oil spills including inland and marine oil spills, radiological emergencies, nuclear disasters, air and maritime hazards, pandemics, epidemics etc.

Therefore special awareness programmes must be conducted to make relevant segments of population ready to respond to them.

Objectives:

To gather and collate information on various aspects of infrequent potential high consequence events and their avoidance

To increase awareness on infrequent, potential high consequence events

Time frame of implementation:

Year 3-8 (2008-2012) - Medium and Long term

Geographical area of implementation:

The Entire Country

Activities

Medium and long term activities to include:

- a. Constitute a specialist group to obtain information on various aspects of avoidance of infrequent potential high consequence events
- b. Develop guidelines for transportation, storage, handling of sources (chemicals, gas, explosives, radio-active elements, etc)
- c. Create public awareness
- d. Develop module on industrial safety to be used in various training and capacity building programs.

Outputs:

Special awareness programs developed on infrequent potential high consequence events (such as forest fires, oil spills including inland and marine oil spills, radiological emergencies, nuclear disasters, air and maritime hazards, pandemics, epidemics etc)

Budget:

Year 1-5 (2011-2015)	- SLR 15 million (USD 0.15 mi)
Total Budget	- SLR 15 million (USD 0.15 mi)

Funding status:

International Funding Required

Contact persons in lead and participating agencies:

DMC - Director General, Disaster Management Centre

PA-9 Nationwide Awareness Campaign on Public Safety

Agencies involved:

DMC, with guidance from Ministry of Disaster Management and Human Rights

Background and rationale:

Globally the incidents of terrorism are becoming more and more frequent, and many countries are taking the issue very seriously and creating awareness among their public on precautions to be taken. In Sri Lanka, the people have been living with three decades of conflict, and numerous instances when their safety is put at risk.

It is essential that a concerted and nationwide awareness campaign is carried out which will educate the vulnerable population on the safety precautions that need to be taken- such as avoiding suspicious objects, or unclaimed luggage and reporting to the nearest authority. Similarly, the campaign could also address the issue where sections of the public are incited against each other, and tackle the issue without resorting to violence.

Objectives:

To enhance awareness among the people of Sri Lanka on safety measures and precautions to be observed to protect lives and property.

Time frame of implementation:

Year 1-5 (2006-2010) Short and Medium term

Geographical area of implementation:

The entire country

Activities:

- a. Develop a nationwide public awareness campaign to enhance public safety- (do's and don'ts) through a consultative process
- b. Carry out pilot tests in select districts and improve the design of the campaign; develop awareness materials- brochures, flyers, banners, billboards, hoardings, radio and television clips as appropriate
- c. Involve various stakeholders- government, private sector and civil society in carrying out the awareness campaign

Outputs:

- Nationwide Public Awareness campaign on public safety
- Awareness materials

Budget:

Year 1-2 (2006-2007) - SLR 100 mi (USD 1.0 mi)
Year 3-5 (2006-2007) - SLR 200 mi (USD 2.0 mi)
Total Budget - SLR 300 mi (USD 3.0 mi)

Funding status:

New Funding Required - Local / International Funding

Contact persons in lead and participating agencies:

M/DM&HR- Secretary

DMC

Director General, Disaster Management Centre

Tel: 011-2441570 / 73 Fax: 011-2441571

Email: dmcsl@sltnet.lk dgdmcsl@gmail.com

Other partner agencies:

Police, Armed Forces, Ministry of Public Security, Law and Order, Civil Society, Private Sector

Chapter 9

Implementation Arrangements for the Road Map

9.1 Introduction

The success of the Road Map for DRM in Sri Lanka will depend on the adoption of effective arrangements for implementation and monitoring. With the technical support of the DMC, the M/DM&HR will take the overall responsibility for the implementation of the Road Map. The relevant line ministries, departments and agencies, the provincial authorities, the United Nations system, the other international organisations, the SLRC, civil society and the private sector will support the implementation of the Road Map in accordance with their specific mandate and area of specialisation.

9.2 Implementation Arrangements

The Road Map will be rooted in and adhere to the principles of good governance. Key elements of the implementation arrangements include the following:

9.2.1 National Steering Committee

An oversight mechanism in Colombo in the form of a Steering Committee will provide strategic guidance and advice to oversee and monitor results, and to ensure that lessons are captured. The committee will meet once in two months. Committee members will include representatives from line ministries, provincial government, the UNDP, the SLRCS, the private sector and civil society.

9.2.2 Technical Advisory Committee

The Technical Advisory Committee will include the Government (central and provincial) and representatives from academia and national research institutes. The Committee will have experts on all the seven thematic areas covered in the Road Map and will provide technical inputs to the DMC for the implementation of the Road Map.

9.2.3 Implementing Bodies

Implementation of the Road Map, which covers a wide range of activities related to DRM will require flexibility and partnerships with a range of national and international institutions. Emphasis will be placed on implementation structures with key partners taking responsibility for the ultimate success of the Road Map. For each of the seven thematic areas in the Road Map a lead agency will be identified. The DMC on behalf of M/DM& HR will provide the overall coordination and information management support. Emphasis will be on achieving timely and efficient implementation combined with capacity development at all levels to sustain DRM efforts in the country over a longer term.

9.2.4 Financial Management

The Road Map's financial resources will be managed through a series of controls at various levels. All financial transactions will be monitored, recorded, analysed and reported through transparent financial systems. UN-assisted projects will be subject to annual audits, normally done by the Government's finance and development agency or in some cases the finance audit agency. Implementing agencies can engage with third party organisations and institutes to monitor aid effectiveness, and to generate information on how funds channelled by them are translating into impacts for affected populations and local institutions on the ground. This information will feed into the Road Map's development and refinement, and will complement the monitoring system.

The External Resources Division of the Ministry of Finance will coordinate and manage international funds received in support of the Road Map. Analysis of assistance provided to different thematic and geographical areas will be produced from time to time as required. This will ensure greater donor alignment and harmonisation with the priorities identified in the Road Map.

9.3 Monitoring and Evaluation

A monitoring and evaluation mechanism will ensure effective multi-stakeholder monitoring of activities supported under the Road Map. It will also foster accountability and transparency in the use of Road Map resources. Monitoring activities will include on-site surveillance, regular reporting, and financial expenditure tracking. Results indicators will be developed jointly by Road Map partners. The overall progress of the Road Map activities will be regularly reviewed by the National Steering Committee and reported by the MoDM to NCDM. In addition, teams of national and international United Nations Volunteers (UNVs) will support the DMC in effective monitoring at the District and Division levels.

Implementation of the Road Map will entail the regular collection and processing of information and analysis on key outputs. The DMC website will post the Road Map document, related programme documents, progress reports and briefs on best practices. The website will be regularly updated and linked with the websites of partner agencies. ICT and printed materials will be prepared for different target groups (e.g. government, the public, practitioners, experts and donors) on lessons learned and other aspects of Road Map implementation.

Annex 1

Gazette Notification of
Ministry of Disaster Management and Human Rights

The Gazette of the Democratic Socialist Republic of Sri Lanka

EXTRAORDINARY

No. 1433/11 – MONDAY, FEBRUARY 20, 2006

(Published by Authority)

PART I : SECTION (I) — GENERAL

Government Notifications

NOTIFICATION

IT is hereby notified that the notification issued by me in the exercise of powers vested in me under paragraph (1) (a) of Article 44 of the Constitution of the Democratic Socialist Republic of Sri Lanka, and published in Gazette Extraordinary No. 1422/22 of 08.12.2005 and amended from time to time is further amended with effect from the date of this Notification in the manner set out below :

MAHINDA RAJAPAKSA,
President.

Presidential Secretariat,
Colombo 01,
20th February, 2006.

- (a) by the substitution in the Notification of the Heading “Minister of Disaster Management” and all the items under the said heading for the following Heading and the items in Column I and Column II hereto :

Minister of Disaster Management and Human Rights

Column I	Column II
Departments/Institutions	Subjects and Functions
National Disaster Management Council	Formulation and Implementation of policies, programmes and Projects for disaster mitigation, response and recovery
Disaster Management Centre	Formulation of National Disaster Management Plan and the National Emergency Operation Plan based on the national policy
Department of Meteorology	Administration and operation of Sri Lanka Disaster Management Act, No. 13 of 2005.
	Initiate and coordinate foreign aided projects for disaster mitigation, response and recovery
	Liaising with Ministries, Government authorities and agencies, private sector agencies, NGOs and INGOs and all other relevant agencies to ensure timely execution of such responsibility

Coordination and Management of relief activities pertaining to natural and man-made disasters

Coordinating awareness programs on natural disasters and man-made disasters

Early warning systems

Supervision of the activities of non-governmental organizations and social welfare voluntary agencies in relation to disaster management, provisions of relief and promotion of human rights,

Facilitation of and assistance to non-governmental organizations and social welfare voluntary agencies, in the fields of disaster management and human rights.

Promotion of Human Rights

Coordination with UN High Commissioner for Human Rights and Other international and Regional Human Rights Bodies

Meteorological Surveys and Research

- (b) By the deletion of the words "Department of Meteorology" appearing in Column I and "Meteorology Surveys and Research" appearing in Column II under the Heading "Minister of Science and Technology" in the said Notification.

04-401/2

Annex 2

Sri Lanka Disaster Management Act No.13 of 2005



PARLIAMENT OF THE DEMOCRATIC
SOCIALIST REPUBLIC OF
SRI LANKA

SRI LANKA DISASTER MANAGEMENT
ACT, No. 13 OF 2005

[Certified on 13th May, 2005]

Printed on the Order of Government

Published as a Supplement to Part II of the Gazette of the Democratic
Socialist Republic of Sri Lanka of May 13, 2005

PRINTED AT THE DEPARTMENT OF GOVERNMENT PRINTING, SRI LANKA

TO BE PURCHASED AT THE GOVERNMENT PUBLICATIONS BUREAU, COLOMBO 1

Sri Lanka Disaster Management
Act, No. 13 of 2005

[Certified on 13th May, 2005]

L. D. — O. 56/90.

AN ACT TO PROVIDE FOR THE ESTABLISHMENT OF THE NATIONAL COUNCIL FOR DISASTER MANAGEMENT; THE DISASTER MANAGEMENT CENTRE; THE APPOINTMENT OF TECHNICAL ADVISORY COMMITTEES; THE PREPARATION OF DISASTER MANAGEMENT PLANS; THE DECLARATION OF A STATE OF DISASTER; THE AWARD OF COMPENSATION AND FOR MATTERS CONNECTED THEREWITH OR INCIDENTAL THERETO.

WHEREAS human life, property and the environment of Sri Lanka is being threatened and endangered due to certain disasters taking place within the territory of Sri Lanka:

Preamble.

AND WHEREAS it has become necessary to protect human life and property of the people and the environment of Sri Lanka from the consequence of these disasters, by effectively dealing with them from a national perspective by the preparation of a national policy and a plan and by the appointment of centrally co-ordinated committees and institutions to give effect to such policy and plan :

NOW THEREFORE be it enacted by the Parliament of the Democratic Socialist Republic of Sri Lanka as follows :—

1. This Act may be cited as the Sri Lanka Disaster Management Act, No. 13 of 2005, and shall come into operation on such date (hereinafter referred to as the “appointed date”) as the Minister may appoint by Order published in the Gazette.

Short title.

2. (1) There shall be established a body called the National Council for Disaster Management (hereinafter in this Act referred to as the “Council”).

Establishment of the National Council for Disaster Management.

(2) The Council shall by the name assigned to it by subsection (1), be a body corporate and shall have perpetual succession and a common seal and may sue and be sued in such name.

2 – PL 000093 — 5650 (02/2005)

Constitution of
the Council.

3. (1) The Council shall consist of —
- (a) the President, who shall be the Chairman of the Council (hereinafter referred to as the “Chairman”);
 - (b) the Prime Minister, who shall be the Vice-Chairman of the Council;
 - (c) the Leader of the Opposition;
 - (d) the Ministers in charge of the following subjects :—
 - (i) Social Welfare ;
 - (ii) Rehabilitation and Reconstruction ;
 - (iii) Environment ;
 - (iv) Home Affairs ;
 - (v) Health ;
 - (vi) Science and Technology ;
 - (vii) Housing ;
 - (viii) Coast Conservation ;
 - (ix) Irrigation ;
 - (x) Power ;
 - (xi) Defence ;
 - (xii) Police ;
 - (xiii) Finance ;
 - (xiv) Land;
 - (xv) Fisheries and Aquatic Resources ;
 - (xvi) Foreign Affairs;
 - (xvii) Water Supply;
 - (xviii) Highways;
 - (xix) Urban Development
 - (xx) Education;
 - (e) the Chief Ministers of every Provincial Council established by Article 154A of the Constitution :

Provided that in case where the Provincial Council is not elected for any Province, the Governor appointed for such Province; and

(f) the persons referred to in subsection (3).

(2) The Council shall appoint a person to be the Secretary to the Council, and the person so appointed shall also be a member of the Council.

(3) The Speaker shall in consultation with the Leader of the Opposition, nominate five persons from amongst the opposition Members of Parliament to be members of the Council.

(4) The Council may from time to time co-opt as a member of the Council, any Minister in charge of any other subject for such period as it may consider necessary.

(5) Where a subject referred to in subsection (1) is a subject which the President has assigned to himself or is a subject which has been assigned to the Prime Minister, a person nominated by the President or the Prime Minister, as the case may be, shall represent the President or the Prime Minister at the Council.

4. The functions of the Council shall be—

Functions of the Council.

- (a) to formulate a national policy and program on the management of disasters which shall provide for—
 - (i) the protection of life of the community and environment from disaster and the maintenance and development of disaster affected areas ;
 - (ii) the effective use of resources for preparedness, prevention, response, relief, reconstruction and rehabilitation ;
 - (iii) the enhancement of public awareness and training to help people to protect themselves from disasters ;

- (iv) capacity building, among persons living in areas vulnerable to disaster, in relation to risk management and the application of disaster management and mitigation practices ; and
 - (v) pre-disaster planning, preparedness and mitigation while sustaining and further improving post-disaster relief, recovery and rehabilitation capabilities ;
- (b) to prepare and formulate the National Disaster Management Plan and the National Emergency Operation Plan based on the national policy and program formulated under paragraph (a), in order to ensure —
- (i) preparedness for disasters and any other emergencies ;
 - (ii) risk prevention ; and
 - (iii) the prevention and mitigation of disaster ;
- (c) to monitor the implementation of the National Disaster Management Plan and the National Emergency Operation Plan and to submit such plans to the Cabinet of Ministers for its approval ;
- (d) to facilitate emergency response, recovery, relief, rehabilitation and reconstruction in the event of any disaster ;
- (e) where it considers appropriate, to take all steps necessary to counter any disaster or impending disaster, in accordance with the National Disaster Management Plan or in accordance with such measures as may be decided by the Council for such purposes ;

- (f) to direct, co-ordinate and monitor the activities of the Disaster Management Centre established under section 8 and the appropriate organizations designated under section 21, and to ensure that available resources are used effectively by such Centre and organizations in the discharge of their functions ;
- (g) to ensure that adequate publicity is given to the National Disaster Management Plan and the National Emergency Operation Plan;
- (h) to specify guidelines to be complied with by every Ministry, Government Department and public corporation in the preparation of Disaster Management Plans under section 10;
- (i) to facilitate and support local and community self reliance in the event of any potential or actual disaster ;
- (j) to promote public awareness campaigns relating to disaster management and funding of research and development on disaster management ;
- (k) to facilitate liaison with organizations and persons pursuing hazard, vulnerability and risk reduction studies and implementing action programmes and commissioning such studies and action programmes;
- (l) to assign functions and responsibilities to the Disaster Management Centre established under section 8;
- (m) to initiate programmes relating to prevention and mitigation of disaster and the provision of relief, rehabilitation and reconstruction;

- (n) to appraise the Cabinet of Ministers on all relevant matters connected with any potential and actual disasters;
- (o) to recommend the allocation of funds for disaster management from the relevant authorities and bodies and the Reconstruction and Rehabilitation Fund, established by the Reconstruction and Rehabilitation Fund Act, No. 58 of 1993.

Meeting of the Council.

5. (1) The Council shall meet as often as may be necessary, but not less than once in every three months.

(2) The Chairman shall, if present preside at all meetings of the Council. In the absence of the Chairman from any such meeting of the Council, the Vice-Chairman shall preside at such meeting.

(3) Where both the Chairman and the Vice-Chairman are not present at any meeting of the Council a member elected by the members present at the meeting from among themselves, shall preside at such meeting.

Quorum at meetings.

6. (1) The quorum for any meeting of the Council shall be one-third of its total membership.

(2) The Council may regulate the procedure in regard to the meetings of the Council and the transaction of business at such meetings.

Seal of the Council.

7. (1) The seal of the Council shall be determined and devised by the Council and may be altered in such manner as may be determined by the Council.

(2) The seal of the Council shall be in the custody of the Secretary to the Council.

(3) The Seal of the Council shall not be affixed to any instrument or document except with the sanction of the Council and in the presence of two members of the Council who shall sign the instrument or document in token of their presence.

(4) The Council shall maintain a register of the instruments and documents to which the seal of the Council has been affixed.

8. (1) There shall be established for the purposes of this Act, a Disaster Management Centre headed by a Director-General and such number of other directors as may be determined by the Council. The Director-General and other Directors shall be appointed by the Council in consultation with the Minister.

Establishment of
Disaster
Management
Centre.

(2) The functions of the Centre established under subsection (1) shall be as assigned by the Council, and shall include the following :—

- (a) assisting the Council in the preparation of the National Disaster Management Plan and the National Emergency Operation Plan and proposals for upgrading the same when it becomes necessary ;
- (b) taking responsibility for the implementation of the National Disaster Management Plan and the National Emergency Operation Plan, and upon the declaration of a state of disaster to direct and co-ordinate the implementation of the National Emergency Operation plan;
- (c) ensuring that the various Disaster Management Plans prepared by Ministries, Government Departments or public corporations conforms to the National Disaster Management Plan ;
- (d) based on Disaster Management Plans prepared by various Ministries, Government Departments and public corporations under section 10, preparing and implementing programmes and plans for disaster preparedness, mitigation, prevention, relief, rehabilitation and reconstruction activities and coordinating of organizations which implement such

programmes and plans and obtain financial assistance from the Treasury for such activities and release the same to the relevant regions and monitor and evaluate these activities ;

- (e) issuing instructions and guidelines to appropriate organizations, non-governmental organizations, district secretaries and divisional secretaries on activities relating to disaster management and initiating and implementing work programmes in co-ordination with such organizations and secretaries ;
- (f) promoting research and development programmes in relation to disaster management and setting up and maintaining a data base on disaster management; and
- (g) submitting reports to the Council from time to time and whenever required by the Council in regard to its activities.

Appointment of
Technical
Advisory
Committees.

9. (1) In the discharge of their functions under this Act, the Council and the Disaster Management Centre shall be assisted by such number of Technical Advisory Committees as shall be deemed necessary by the Council, consisting of professionals and experts having expertise in relation to the respective functions and responsibilities, as the case may be, of the Council.

(2) The members of the Technical Advisory Committees shall be appointed by the Council.

(3) The Chairmen of the Technical Advisory Committees constituted under subsection (1), shall be appointed by the Council.

Disaster
Management
Plan.

10. (1) It shall be the duty of every Ministry, Government Department and public corporation to prepare a Disaster Management Plan with respect to such Ministry,

Government Department, or public corporation, to counter any disaster or impending disaster, based on the National Disaster Management Plan and in accordance with such guidelines as may be specified by the Council.

(2) The Disaster Management Centre shall, if requested by a Ministry, Government Department or public corporation referred to in subsection (1), extend all necessary assistance to such Ministry, Department or Corporation, as the case may be, in the preparation of its Disaster Management Plan.

(3) Every Ministry, Government Department and public corporation shall on or before such date as shall be determined by the Council by Order published in the Gazette, submit to the Centre, a detailed Disaster Management Plan relating to the disaster counter-measures proposed to be taken by such Ministry, Government Department, public corporation, as the case may be, to counter any disaster or impending disaster.

(4) The Centre shall submit every Disaster Management Plan received by such Centre under subsection (3), to the Council for its approval.

11. (1) If at any time, the extent or severity of a disaster or impending disaster is or is likely to be so great, that any counter-measures that may become necessary to counter such disaster or impending disaster are beyond the resources or means normally available to the administration, the President may, on President's own motion or on the advice of the Council, by Proclamation declare that a state of disaster exists, either in respect of any area or areas specified in such proclamation, or of the whole country.

Declaration of
state of disaster.

(2) Subject to the provisions of subsection (3), a Proclamation made under subsection (1) shall come into force on the date on which such Proclamation is made and shall, remain in force for a period of two months from the date of the making of the Proclamation, and may thereafter, if necessary, be extended for further periods not exceeding two months at a time.

(3) A Proclamation made under subsection (1), shall be placed before Parliament at its first sitting immediately after the date of declaration of the Proclamation, to be approved by a resolution of Parliament.

(4) If Parliament does not approve any Proclamation placed before it, such Proclamation shall, immediately upon such disapproval, cease to be valid and have no force in law, but without prejudice to anything lawfully done thereunder.

Procedure to be followed upon the declaration of a state of disaster.

12. (1) Upon the declaration of a state of disaster by the President, the President shall direct any one or more appropriate organizations designated by the Council under section 21, to take immediate action to —

- (a) direct, co-ordinate and use all available resources as may be necessary within the area or areas in respect of which a Proclamation has been made under subsection (1) of section 11, to counter the effect of the disaster or the impending disaster or to mitigate the effect of such disaster or impending disaster ;
- (b) direct, co-ordinate and use additional resources, if and when they become available, in accordance with such arrangements as may be made in respect of its allocation ; and
- (c) take all necessary measures provided for in the National Disaster Management Plan or the National Emergency Operation Plan as the case may be, and in accordance with such directions that may be issued to such appropriate organization by the President.

(2) Notwithstanding the provisions of subsection (1), upon the declaration of a state of disaster by President under section 11, it shall be the duty of every Ministry, Government Department or public corporation, to take all measures necessary for the immediate implementation of their Disaster Management Plans prepared under section 10 within their respective Ministry, Department, or Corporation, as the case may be.

13. (1) Notwithstanding the provisions contained in section 12, where a state of disaster is declared under section 11, the Council may, wherever it considers necessary or appropriate, obtain the assistance of any Non-Governmental organization, being a non-governmental organization whose activities are not detrimental to national independence and sovereignty, to assist any appropriate organization in the discharge of its duties under section 12.

Council to obtain assistance of non-governmental organizations.

(2) Where any assistance is obtained under subsection (1) from a non-governmental organization, such organization shall act in accordance with instructions issued by the appropriate organization it is assisting and shall, for service rendered be paid by the Council out of the Fund of the Council, such amount as shall be determined by the Council.

14. (1) It shall be the duty of an appropriate organization directed to take any action under section 12, to —

Duties of an appropriate organization.

- (a) enter any place where such appropriate organization believes on reasonable grounds that it is necessary to enter for the purpose of saving human life or for the prevention of injury to human life or for the rescuing of persons whose lives are endangered or to facilitate the carrying out of any other urgent measures with respect to relief from suffering and distress of affected persons ;
- (b) evacuate people, property and animals from affected or vulnerable areas ;
- (c) close traffic on any road, street (whether public or private) right of way or in any public place, for the implementation of disaster counter-measures until the police and the armed forces arrive ;
- (d) remove any obstruction impeding the implementation of disaster counter-measures with the assistance of the police or the armed forces ; and

12 Sri Lanka Disaster Management
Act, No. 13 of 2005

- (e) do any other act as such appropriate organization may consider reasonably necessary for the purpose of implementing effectively any disaster counter-measures or to perform any act preliminary or incidental to any action directed to be taken by such appropriate organization under section 12.

(2) The duties entrusted under subsection (1) on any appropriate organization shall be performed by such organization only within the area or areas in which such organization has been authorized to operate by the Council, in performing its duties under subsection (1) of section 12.

Award of
compensation.

15. (1) Any person who suffers loss or damage to his or its property by reason of any act, omission or default in taking any action by an appropriate organization under subsection (1) of section 12 or in the performance of its duties under section 14 or by a non-governmental organization assisting an appropriate organization under section 13, or a police officer or member of the armed forces, shall be entitled to compensation in respect of any loss or damage caused, of an amount determined by the Divisional Secretary of the Division within which such property is situated.

(2) The Divisional Secretary may, for the purpose of determining the compensation payable under subsection (1), obtain the assistance of a government assessor.

(3) The amount of compensation paid for any loss or damage caused to property shall, in case of dispute, be determined by the District Court within the jurisdiction of which the property is situated, on application made in that behalf by the person who suffered such loss or damage, by way of summary procedure.

16. The initial capital of the Council shall be ten million rupees. The amount of this initial capital shall be paid out of the Consolidated Fund and shall be credited to the Fund established under section 17.

Capital of the Council.

17. (1) The Council shall have its own Fund. There shall be credited to the Fund of the Council—

Fund of the Council.

- (a) money received from the Consolidated Fund, as initial capital of the Council ;
- (b) all such sums of money as may be received by the Council in the discharge of its functions ; and
- (c) all such sums of money as may be received by the Council by way of loans, donations, gifts or grants from any lawful source whatsoever, whether in or outside Sri Lanka.

(2) There shall be paid out of the Fund of the Council all such sums of money as may be required to defray any expenditure incurred by the Council in the discharge of its functions under this Act.

18. (1) The financial year of the Council shall be the calendar year.

Accounts and audit.

(2) The Council shall cause proper books of accounts to be kept of the income and expenditure, assets and liabilities and all other transactions of the Council.

(3) The provisions of Article 154 of the Constitution relating to the audit of the accounts of public corporations shall apply to and in relation to the audit of the accounts of the Council.

19. The provisions of Part II of the Finance Act, No. 38 of 1971, shall mutatis mutandis, apply to the financial control and accounts of the Council.

Application of Part II of the Finance Act, No. 38 of 1971.

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Staff of the
Council.

20. (1) The Council may appoint such number of officers, servants and agents as it considers necessary for the discharge of its functions and for the administration and implementation of this Act.

(2) The officers, servants and agents appointed under subsection (1) shall be remunerated in such manner and at such rates and shall be subject to such conditions of service as may be determined by the Council.

(3) At the request of the Council, any officer in the public service may with the consent of that officer and the Secretary to the Ministry of the Minister in charge of the subject of Public Administration, be temporarily appointed to the staff of the Council for such period as may be determined by the Council with like consent or be permanently appointed to such staff with like consent.

(4) Where any officer in the public service is temporarily appointed to the staff of the Council, the provisions of subsection (2) of section 14 of the National Transport Commission Act, No. 37 1991 shall, mutatis mutandis, apply to and in relation to him.

(5) Where any officer in the public service is permanently appointed to the staff of the Council, the provisions of subsection (3) of section 14 of the National Transport Commission Act, No. 37 of 1991 shall, mutatis mutandis, apply to and in relation to him.

(6) Where the Council employs any person who has entered into a contract with the Government by which he has agreed to serve the Government for a specified period, any period of service with the Council by that person shall be regarded as service to the Government for the purpose of discharging the obligations of such contract.

Designation of
appropriate
organizations.

21. (1) Whenever the Council considers it appropriate, the Council may designate any Ministry, Government Department, Public Corporation or the Disaster Management

Centre as an appropriate organization (in this Act referred to as an “appropriate organization”) which will be required to carry out and implement the National Disaster Management Plan or the National Emergency Operation Plan, as the case may be, and generally assist the Council in the discharge of its functions.

(2) Notwithstanding the provisions of subsection (1), an appropriate organization shall also be required to perform any duties that it may be called upon to do under subsection (1) of section 12, and in general to assist the Council in the discharge of its functions under this Act.

(3) The Council shall determine and specify the functions which an appropriate organization should discharge in order to carry out and implement the respective plans referred to in subsection (1), and where necessary issue guidelines for the same.

(4) Where an appropriate organization is designated by the Council under subsection (1), the Council shall by Order published in the Gazette, specify the area or areas in which each such appropriate organizations, shall carry out its implementation activities.

(5) An appropriate organization may exercise its powers under this Act, only through such of its officers as are especially assigned in writing in that behalf by such organization.

22. (1) The Chairman may, subject to such conditions as may be specified in writing delegate all or any of his powers, duties or functions under this Act to any member or officer of the Council.

Delegation of powers, duties and functions by the Chairman.

(2) Notwithstanding any such delegation under subsection (1) , the Chairman may exercise, perform or discharge any power, duty or function so delegated.

(3) A member or an officer of the Council to whom any power, duty or function has been delegated under subsection (1) shall, in the exercise, performance or discharge of such power, duty or function, comply with such directions or conditions as the Chairman may from time to time communicate in writing to such member or officer, as the case may be.

(4) A member or an officer of the Council to whom any power, duty or function has been delegated under subsection (1) shall have the power to do, all acts and things that are incidental to the power, duty or function that is so delegated.

Protection for
action taken in
good faith.

23. No suit shall lie against a member of the Council or any appropriate organization authorized by the President under section 12, or police officer or a member of the armed forces for any action which is done in good faith, in the performance of any duty imposed upon such member, appropriate organization, police officer or a member of the armed forces as the case may, under this Act.

Offences and
penalties.

24. Every person who assaults, obstructs, threatens, intimidates, abuses or insults any person exercising any power or discharging any duty conferred on or imposed on such person by this Act, shall be guilty of an offence under this Act and shall on conviction after summary trial before a Magistrate be liable to imprisonment of either description for a term not exceeding two years or to a fine not exceeding twenty five thousand rupees, or to both such imprisonment and fine.

Interpretation.

25. In this Act, unless the context otherwise requires —

“disaster” means the actual or imminent occurrence of a natural or man-made event, which endangers or threatens to endanger the safety or health of any person or group of persons in Sri Lanka, or which destroys or damages or threatens to destroy or damage any property, and includes—

- (a) a landslide;
- (b) a cyclone;

- (c) a flood;
- (d) a drought,
- (e) an industrial hazard;
- (f) a tsunami (seismic wave);
- (g) an earthquake;
- (h) an air hazard;
- (i) a maritime hazard;
- (j) a fire;
- (k) an epidemic;
- (l) an explosion;
- (m) air raids ;
- (n) civil or internal strife ;
- (o) chemical accident;
- (p) radiological emergency;
- (q) oil spills including inland and marine oil spills;
- (r) nuclear disaster;
- (s) urban and forest fire;
- (t) coastal erosion; and
- (u) tornados, lightening strikes and severe thunder storms;

“disaster counter-measures” means measures that are necessary or desirable to avert, minimize or counter the effect of an impending disaster or consequent to a disaster, to mitigate the effect of such disaster on members of the public or any property belonging to an individual or the State, and includes the conduct of, or participation in, training for such purposes ;

“public corporation” means any corporation, board or other body which was or is established by or under any written law with funds or capital wholly or partly provided by the Government from the Consolidated Fund by way of grant, loan or otherwise; and

“resources” includes manpower or animals, vehicles, boats, plant, apparatus, implements, earthmoving equipment or other equipment of any kind, finance, storage facilities, movable and immovable property considered essential for the life of the community.

Sinhala text to
prevail in case
of inconsistency.

26. In the event of any inconsistency between the Sinhala and Tamil texts of this Act, the Sinhala text shall prevail.

Annex 3

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