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National Disaster Management Plan 2022-2030

**Democratic Socialist Republic of Sri Lanka
Ministry of Defence
State Ministry of National Security and Disaster Management
Disaster Management Centre
2022**

National Disaster Management Plan

ISBN

Published by: The Disaster Management Centre, State Ministry of National Security and Disaster Management

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..... Jan 2022

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Executive Summary

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Ministers Message

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Secretary's Message

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Director General's Message

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Table of contents

1. Introduction	1
1.1. Disaster Management Overview in Sri Lanka.....	1
1.2. Policy and Legal framework for the Development of the National Disaster Management Plan (NDMP).....	1
1.2.1. Post Tsunami era of disaster risk management	2
1.2.2. Overview of Road map.....	4
1.2.3. Overview of National Disaster Management Plan (2013-2017) and Sri Lanka Comprehensive Disaster Management Programme (2014-2018)	4
1.3. Priorities for the next decade of disaster risk management	6
1.4. Disaster Risk Management Framework in Sri Lanka.....	7
1.5. The National Disaster Management Plan (2022-2030).....	8
1.6. Strategic direction of Disaster Risk Management in Sri Lanka 2022-2030	9
1.6.1. Aim.....	Error! Bookmark not defined.
1.6.2. Goal	9
1.6.3. Overall Objective	9
1.6.4. Key Objectives	Error! Bookmark not defined.
1.7. Scope of the plan and structure	9
1.8. Future revisions and upgrading the National Disaster Management Plan.....	10
1.9. Disaster management Plans for different levels and sectors in Sri Lanka.....	10
1.10. Other important Plans.....	Error! Bookmark not defined.
2. Understanding Disaster Risk	12
2.1. Hazard, Vulnerability and Risk Assessment	13
2.1.1. Hazard Assessment and Hazard Mapping	13
2.1.2. Vulnerability Assessment.....	15
2.1.3. Risk Assessment.....	15
2.2. Data for Risk Assessment.....	16
2.3. Research and Development	17
3. Strengthening Disaster Risk Governance to Manage Disaster Risk.....	18
3.1. Global Frameworks for Disaster Risk Management	18
3.1.1. Asia Regional Plan for Implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030	19
3.1.2. Paris Agreement on Climate Change	19
3.1.3. Sustainable Development Goals	20
3.1.4. National Development Policy “Vistas of Prosperity and Splendour”	20
3.2. Institutional Framework for Disaster Risk Management	21
3.3. Legal Powers of different layers of government and Institutional Mandates for various types of Hazards	22
3.3.1. Decentralization of Disaster Management	22
3.3.2. Enforcement of existing policies of different sectors.....	22
3.3.3. Responsibilities of various Ministries in Disaster Risk Management	22
3.3.4. Responsibilities of Government Departments and Agencies	22

3.3.5.	Responsibilities of Provincial Councils (PCs) and Local Authorities (LAs)	22
3.4.	District, Divisional and Grama Niladhari Administrations	23
3.4.1.	Disaster Management Committees at National Level	23
3.4.2.	Technical Advisory Committees (TAC).....	23
3.4.3.	National Disaster Management Coordination Committee (NDMCC)	24
3.4.4.	Emergency Response Committee.....	24
3.5.	Disaster Management Committees functioning at sub-national levels.....	24
3.5.1.	Convening and Coordinating Meetings of Disaster Management Committees	25
3.6.	Coordination with national and international development partners.....	25
4.	Investing Disaster Risk Reduction for Resilience	26
4.1.	Disaster mitigation, Climate Change Adaptation and mainstreaming into development.....	27
4.1.1.	The National Strategy for Disaster Risk Reduction mainstreaming into Development	27
4.1.2.	Disaster Mitigation Strategies for Risk Reduction	28
4.1.3.	Implementing Specific Mitigation Projects.....	29
4.1.4.	Retrofitting / Strengthening of existing structures for resilience.....	29
4.1.5.	Mainstreaming disaster risk reduction in urban areas	29
4.1.6.	Disaster Risk Reduction by Controlling the use of Natural Resources	30
4.1.7.	Livelihoods Development and Poverty Reduction as a Mitigation Measure	31
4.1.8.	Disaster Mitigation Action Plan	31
4.2.	Reducing Vulnerabilities to industrial and technological hazards	31
4.2.1.	Industrial Accidents, Traffic Accidents, Animal Attack and Health Hazard	32
4.2.2.	Radiological Accidents.....	32
4.2.3.	Oil spill and maritime hazards.....	32
4.3.	Consideration of Existing Public Services in Areas of New Development.....	33
4.4.	Risk Transferring and Financing	33
4.5.	Climate Change Adaptation (CCA).....	35
4.5.1.	Climate Change Adaptation (CCA) and Disaster Risk Reduction (DRR)	36
4.5.2.	Disaster Risk Management for food and water security.....	36
4.5.3.	National Adaptation Plan for Climate Change Impacts in Sri Lanka: 2016-2025	36
4.6.	Collaboration of international agencies and development partners in mainstreaming DRR in Development	37
5.	Enhancing Disaster Preparedness for Effective Response and to "Build Back Better" in Recovery, Rehabilitation and Reconstruction	39
5.1.	Disaster Preparedness and Recovery Planning.....	39
5.1.1.	Preparation of Disaster Preparedness Plans in Different National and Provincial Ministries /Departments /Institutes /Agencies.....	40
5.1.2.	Preparation of Disaster Management Plans at Sub-national Levels.....	41
5.1.3.	Community Based Disaster Management (CBDM).....	42
5.1.4.	Involvement of SAR Teams of the Armed Forces and Police for Disaster Response Activities.....	42
5.1.5.	Private Sector Preparedness	43
5.1.6.	Volunteerism in disaster management.....	43
5.1.7.	Standard Operating Procedure (SOP).....	43
5.2.	Hazard Monitoring,Forecasting, Warning and Dissemination.....	44
5.2.1.	Technical Committee for Tsunami Early Warning	44
5.2.2.	Mechanism for Coordination with Relevant Early Warning Agencies – International, Regional and National	44

5.2.3.	Technical Institutions Responsible for Forecasting and Issuing Warning Alerts for Different Hazards; and their Roles and Responsibilities	45
5.2.4.	Standard Disaster Early Warning Messages and Bulletins	46
5.2.5.	Communication Systems for Early Warning Dissemination.....	46
5.2.6.	Role of Telecommunication Regulatory Commission, telecommunication service providers and media	47
5.3.	Emergency Operations	47
5.3.1.	National Emergency Operation Plan (NEOP).....	47
5.3.2.	Emergency Operation Centre (EOC) and readiness	48
5.3.3.	Emergency Operations Centers at District and Divisional Levels	49
5.3.4.	First Responders Teams for Man-Made Disasters	49
5.3.5.	Search & Rescue teams at National and District levels.....	49
5.3.6.	Coordination of Disaster / Emergency Response at different Levels.....	49
5.3.7.	Incorporation of Incident Command System (ICS) into Emergency Operations at different Levels	49
5.3.8.	Strengthening of Emergency Response Systems.....	51
5.3.9.	Emergency Response by Local Authorities.....	52
5.3.10.	Response to Other Specific Types of Emergencies.....	52
5.3.11.	Disaster Victim Identification (DVI).....	52
5.3.12.	Stakeholder Involvement in Emergency Operations.....	53
5.4.	Immediate Relief and Recovery	53
5.4.1.	Relief and Temporary Shelter Management.....	53
5.4.2.	Stakeholder Agencies Responsible for Immediate Recovery, Rehabilitation and Reconstruction.....	54
5.5.	Rehabilitation and Reconstruction	55
5.5.1.	Major Stakeholder Agencies	55
6.	Capacity building for effective implementaton of Disaster Risk Management Action Plan	56
6.1.	Training Needs Assessment	58
6.2.	Trainings on Disaster Management.....	58
6.2.1.	Training of Trainers in Disaster Risk Management	59
6.2.2.	Training Facilities and centers.....	59
6.3.	Awareness Programmes	60
6.3.1.	Specific Awareness for Different Government Officials at Sub-national Level:.....	60
6.3.2.	General Public Awareness.....	60
6.3.3.	Awareness for Communities for Livelihood Development and Poverty Reduction:	61
6.4.	School Education.....	61
6.5.	University Education.....	61
6.6.	Tertiary Education.....	61
7.	National Strategies and Action Plan for Disaster Risk Management 2022-2026.....	63
7.1.	Priority Area 1: Understanding Disaster Risk	63
7.2.	Priority Area 2: Strengthening Disaster Risk Governance	Error! Bookmark not defined.
7.3.	Priority Area 3: Investing in Disaster Risk Reduction for Resilience ...	Error! Bookmark not defined.
7.4.	Priority 4: Enhancing Disaster Preparedness for Effective Response to “Build Back Better” in Recovery, Rehabilitation, and Reconstruction	Error! Bookmark not defined.
8.	Implementation ,Financial Arrangement and Monitoring & Evaluation.....	2
8.1.	Implementation Arrangement.....	2

8.2. Resources Mobilization	3
8.3. Monitoring & Evaluation	3
Annexure	i
Annex A: Disaster Situation in Sri Lanka and Present Hazard Trends	i
Annex B: Major agencies that are responsible for hazard mapping / hazard information	viii
Annex C: Specific Reservoirs Falling within the Purview of Different Agencies	xi
Annex D: Mandates of Line Agencies	xii
Annex E: Reviewing mandates of Provincial Councils (PCs) and Local Authorities (LAs)	xiii
Annex F: NDMCC Member List.....	xiii
Annex G: Composition of Disaster Management (DM) Committees at Different Subnational Levels	xiii
Annex H: Mainstreaming of DRM in the Development Process and some Possible Areas	xvi
Annex I: SFDRR in Brief.....	xviii
Annex J: Major Stakeholder Agencies Responsible for Different Activities in Pre, During and Post Disaster Stages	xviii
Annex K: Consideration of Existing Public Services in Areas of New Development	xix
Annex L: Guideline of the preparation of Disaster Management Plans of Different National and Provincial Ministries / Departments / Institutes / Agencies	xx
Annex M: Technical Institutions Responsible for Forecasting and Issuing Early Warning Alerts for Different Hazards	xxiii
Annex N: National Level Response Structure on Occurrence of a Disaster	xxiv
Annex Q: Detailed actions and responsibilities of various stakeholder agencies after issue of early warning or on occurrence of a disaster.....	xxvii
Annex R: A matrix of major stakeholder agencies responsible for different activities in post disaster recovery, rehabilitation & reconstruction.....	xxvii
Annex S: Road Map for Implementation of DRR Strategies Sri Lanka (2022-2026).....	Error!

Bookmark not defined.

List of Figures

Figure 1: Disaster Risk Management Framework – Sri Lanka	8
Figure 2: Vertical and Horizontal Disaster Management Planning in Sri Lanka	11
Figure 3: Components of Disaster Risk.....	12
Figure 4: National Institutional Framework for Disaster Risk Managment	21
Figure 5: Establishment and Coordination of various Advisory Committees.....	23
Figure 6: Coordination of DM Committees at sub-national levels	24
Figure 7: Disaster Preparedness and Recovery Planning Framework.....	39
Figure 8: Coordinating Activities of Emergency Operations Centre of DMC with respect to Receiving Early Warning and Dissemination (need to change).....	Error! Bookmark not defined.
Figure 9: System of Dissemination of EW Messages to the Communities.....	46
Figure 10: Scope of the NEOP execution.....	Error! Bookmark not defined.
Figure 11: Structure of the National EOC.....	48
Figure 12: Provincial and District Emergency Operations Coordination Structure and Flow of Information.....	50
Figure 13: Major Functional Areas of the Incident Command System.....	51

Acronyms and Abbreviations

ADB	Asian Development Bank
AEA	Atomic Energy Authority
AMCDRR	Asian Ministerial Conference for Disaster Risk Reduction
CAT DDO	Catastrophe Deferred Draw-Down Option
CBDRM	Community Based Disaster Risk Management
CBOs	Community Based Organizations
CC&CRMD	Coast Conservation & Coastal Resource Management Department
CCA	Common Country Assessment
CCAP	Climate Change Adaptation Policy
CCS	Climate Change Secretariat
CEA	Central Environment Authority
CEB	Ceylon Electricity Board
CECB	Central Engineering Consultancy Bureau
CIMIC	Civil Military cooperation
CPC	Ceylon Petroleum Corporation
CRIP	Climate Change Resilience Improvement Project
DaLA	Damage and Loss Assessment
DDCMUs	District Disaster Management Coordinating Units
DDMCUs	District DM Coordinating Units
DPL	Development Policy Loan
DRR	Disaster Risk Reduction
DVI	Disaster Victim Identification
EOC	Emergency Operations Centre
EWS	Early Warning Systems
GFDRR	Global Facilitation for Disaster Risk Reduction
GIZ	German Agency for International Cooperation
GSMB	Geological Survey and Mines Bureau
HEC	Human Elephant Conflict
HFA	Hyogo Framework for Action
ICS	Incident Command System
IDPs	Internally Displaced People
INGOs	International Non-Governmental Organizations
IPCC	International Panel for Climate Change
LA	Local Authority
MASL	Mahaweli Authority of Sri Lanka
MDM&HR	Ministry for Disaster Management and Human Rights
MEPA	Marine Environment Protection Authority
MoDM	Ministry of Disaster Management
NACWC	National Authority for Implementation of Chemical Weapons Convention
NAITA	National Apprenticeship and Industrial Training Authority
NAP	The National Adaptation Plan
NAPA	National Adaptation Plan of Action

NARA	National Aquatic Resources Research and Development Agency
NBRO	National Building Research Organization
NCCAS	National Climate Change Adaptation Strategy
NCCAS	National Climate Change Adaptation Strategy
NCDM	National Council for Disaster Management
NCT	National Certificate in Technology
NDCs	Nationally Determined Contributions
NDMCC	National Disaster Management Coordination Committee
NDMCC	National DM Coordination Committee
NDMP	National Disaster Management Plan
NDT	National Diploma in Technology
NEOP	National Emergency Operations Plan
NIE	National Institute of Education
NITF	National Insurance Trust Fund
NPPD	National Physical Planning Department
NSDI	National Spatial Data Infrastructure
NSF	National Science Foundation
NWS&DB	National Water Supply & Drainage Board
NYSC	National Youth Services Council
PCs	Provincial Councils
PDNA	Post Disaster Needs Assessments
PRA	Participatory Risk Assessment
PRISM	Platform for Real-Time Information and Situation Monitoring
SD&CC	State Development and Construction Corporation
SDGs	Sustainable Development Goals
SEC	State Engineering Corporation of Sri Lanka
SFDRR	Sendai Framework for Disaster Risk Reduction 2015-2030
SLCDMP	Sri Lanka Comprehensive Disaster Management Programme
SLCG	Sri Lanka Coast Guard
SLDRN	Sri Lanka Disaster Resource Network
SLLRDC	Sri Lanka Land Reclamation & Development Corporation
SLPA	Sri Lanka Port Authority
SLRC	Sri Lanka Red Cross
SLRCS	Sri Lanka Red Cross Society
SOP	Standard Operating Procedures
TACs	Technical Advisory Committees
UDA	Urban Development Authority
UNDAF	UN Development Assistance Framework
UNDP	United Nations Development Programme
UNOCHA	United Nations Officer for Coordination of Humanitarian Affairs
VTA	Vocational Training Authority

1. Introduction

1.1. Disaster Management Overview in Sri Lanka

Disaster risk, hazards and impacts in Sri Lanka are on the increase due to a multitude of factors. Population dynamics, increasing demand for natural resources such as water and land, rapid and unplanned urbanization, development planning devoid of disaster risk and exposure are some of the key contributory factors in this regard. A recent study estimated that 87 % of Sri Lanka's population lives in moderate or severe hotspots for disasters¹.

During the past five years extensive disasters were prevalent. However few numbers of intensive disasters occurred especially in 2016 and 2017. The 40-year return drought in 2016 and 2017, floods and landslides in 2016 and 2017 in South-Western region are the most impactful events reported during this period. Floods and landslides in 2016, induced highest recorded rainfall in more than 18 years, inducing exceptional flooding in 24 of the 25 districts. Furthermore, the event affected nearly half a million people and caused a cumulative damages and losses of over US 600 million dollars (MoNPEA & MoDM, 2016). Floods and landslides in 2017, affected fifteen southern districts of the country (MoNPEA & MoDM, 2017)². The cost of 2017 floods and landslides amounted to approximately US 415.5 million dollars. The estimated recovery costs were at LKR 257.4 billion³.

Climate change brings forth unpredictable increases in hydro meteorological hazards, both in their occurrences and intensity. The 2021 Global Climate Risk Index Report lists Sri Lanka in the 30th place among the countries most affected by extreme weather events in 2018-2020.

It is evident that Sri Lanka must thrive on reducing the disaster risk to achieve the country's vision. In this context, the country needs to strive toward a holistic approach to reducing risk in all sectors to protect lives, livelihoods and properties, incorporating disaster risk into development planning. Thus, the Disaster Management Centre(DMC) under the State Ministry of Disaster Management focuses on continuing the National Disaster Management Plan (NDMP) with the incorporation of national priorities and international policy frameworks.

The NDMP aims to set the 2030 strategic direction for Disaster Risk Management in the country, in line with the national development vision of the Government, "Vistas of Prosperity and Splendour", also guided by the overarching disaster risk management direction provided by the Sendai Framework for Disaster Risk Reduction 2015-2030 (SFDRR) and the Sustainable Development Goals (SDG).

The NDMP 2022-2030 is built upon the historical experience and learning of the projects identified in the Sri Lanka Comprehensive Disaster Management Programme (SLCDMP). It considers potential climate impacts and the new and emerging hazards such as COVID-19 pandemic. Policy and Legal framework for the Development of the National Disaster Management Plan

In the aftermath of the Tsunami a Parliament Select Committee consisting of 21 members from all political parties represented in Parliament, was appointed by the government of Sri Lanka, to investigate the disaster risk management status of the country and make recommendations to minimize damages.

¹ World Bank 2018, *South Asia's Hotspots: The Impact of Temperature and Precipitation Changes on Living Standards*. South Asia Development Matters

² Post Disaster Needs Assessments (PDNA) in 2016 and 2017 by the Government of Sri Lanka

³ Sri Lanka Post Disaster Need Assessment 2016

After deliberations, the committee made some specific recommendations presented in the committee report[1].

The government introduced the legal framework for Disaster Management in May 2005 – Sri Lanka Disaster Management Act[2](SLDM Act). Hence the country will be prepared for frequent disasters in the future. The Act provides the legal foundation and strategic directions and proposes an institutional structure and coordination mechanism from national to local levels. The Act provides for establishing the National Council for Disaster Management (NCDM), a high-level inter-ministerial body chaired by H.E., the President. DMC was established as the executing agency of Disaster Risk Management by the directives of NCDM.

Subsequently, in November 2005, a separate Ministry for Disaster Management was established under the Hon Priminister. In January 2006, the Ministry of Disaster Management had renamed the Ministry for Disaster Management and Human Rights(M/DM&HR). Consequently, the subject of Disaster Management was functioned directly under Cabinet Ministers naming as Ministry of Disaster Management and later the Ministry of Irrigation Water Resources Management & Disaster Management, Ministry of Public Administration & Disaster Management & Livestock Development. The ministry currently functions under the cabinet Ministry of Defence and directly under the State Ministry of National Security and Disaster Management.

The National Disaster Management Policy 2013, National Disaster Management Plan 2013-2017, and National Emergency Operation Plan (NEOP) 2017 have been developed in accordance with the SLDM Act. The National Adaptation Plan (NAP) for Climate Change Impacts in Sri Lanka 2016-2025, Nationally Determined Contributions (NDCs) contain the commitments and action plans with reference to climate risk management, Flood Protection Ordinance, National Land Use Policy, National Physical Plan and Policy and several sector-specific policies are closely interlinked with disaster risk management in the country. Sri Lankan disaster management strategies are mainly governed by the National Disaster Management Policy approved by the Cabinet of Ministers on *28th December 2010*. Several other policies, such as National Climate Change Adaptation Policy, Water Conservation policy, Local Government Policy, etc., also contribute to Disaster Risk Management (DRM) in the country. They are based on the principles of creating a disaster risk-free environment for communities. There are several key documents that provide legal and policy frameworks for disaster management in the country.

When formulating the NDMP 2022-2030, following factors were given the main consideration:

- Previous Disaster Management Initiatives in Sri Lanka (see Annex A-B)
- Current Disaster Situation in Sri Lanka (see Annex A),
- Relevant Policy and legal frameworks related to Disaster Management in Sri Lanka
- Global Initiatives on Disaster Risk Management

1.1.1. Disaster Risk Management Initiatives in Sri Lanka

Since 2005 two main disaster management plans have been formulated and implemented: The Road Map for Disaster Risk Management - Towards a Safer Sri Lanka (2006-2016) and the National Disaster Management Plan (2013-2017). Sri Lanka Comprehensive Disaster

Management Programme (SLCDMP (2014 – 2018) was developed as the action plan for implementing the NDMP. Both plans were aligned with the Hyogo Framework for Action (HFA) 2005-2015 and the projects proposed in the ten-year Road Map.

Several key undertakings were initiated to support the implementation of the above plans. The “DesInventar” Disaster Information Management System established in 2007 consists of data and information on disaster occurrences and impacts from 1974 at the District, Divisional and GN levels. The system is maintained and updated regularly by DMC[1]. DMC in collaboration with the technical agencies focal for different hazards and the United Nations Development Programme (UNDP) developed the first “Hazard Profile of Sri Lanka”[2]. Further, international linkages were developed with Japan Aerospace Exploration Agency (JAXA), Indian Satellites, and UN system related programmes for guidance on hazard risk assessments.

With reference to policy and coordination, a National Policy for Disaster Management was approved in 2013 in sync with the HFA Priorities for Action. The National Disaster Management Coordination Committee (NDMCC), chaired by the Secretary Ministry of Disaster Management, was established as the multi-agency operational mechanism. Monthly NDMCC meetings were attended by over 60 agencies representing the UN, I/NGO, CSOs, Universities, Media etc. The NDMCC served as a multi-stakeholder platform to discuss preparedness planning for monsoons, response to disaster events and disaster risk reduction options in detail, and resources were pooled to meet the identified needs.

In collaboration with the relevant technical agencies, DMC has developed technical guides and conducted awareness and training programmes to support DRR mainstreaming into the key development sectors. These include guidelines on building design and construction, hazard resilient housing construction, school disaster safety, urban development planning, road development and agricultural practices resilient for flood and drought impacts. Disaster management was integrated into the school curriculum for grades 6-11 and the tertiary education system at the postgraduate level. Annex A contains a list of main guidelines and resource documentation developed.

Post Disaster Needs Assessments (PDNA) were conducted in 2010, 2016, and a Rapid Post Disaster Needs Assessment in 2017, applying the Damage and Loss Assessment (DaLA) methodology. A comprehensive Post Disaster Recovery Plan for floods and landslides was developed based on the 2016/17 PDNAs, following the Build Back Better principles. The plan included institutional and implementation arrangements to be applied in conducting the recovery process. A Community Resilience Framework and a National Disaster Recovery Framework have been developed align the the SFDRR. NEOP was adopted in 2017, and the Standard Operating Procedures (SOP) for main hazards affecting the country have been developed at National/District/Divisional/Community level. Updating the SOPs continues to be a work in progress, while SOPs for Flood, Landslide, Cyclone was updated in 2019. However, integral SOPs for the operationalization of NEOP is to be developed and tested for unified and coordinated response operations.

Colombo declaration of Multi-Hazard Early warning and Disaster Risk Reduction⁴, was adopted at an international symposium held in Colombo in December 2020. The declaration seriously concerns about the growing frequency and intensity of extreme climatic events and the continuing impact of disasters. Fifteen key priorities and actions have been set out for reflection of stakeholders to reduce disaster risk and impacts.

1.1.2. Overview of Road map

The first National Disaster Management programme of the country was “Road Map for Disaster Risk Management 2005-2015”, which was developed based on Hyogo Framework for Action, addressing the disaster risks in the country comprehensively.

The Road Map⁵ has focused on 109 projects under seven thematic components harmonizing the activities implemented under other mandated agencies in the field of disaster risk management and development planning.

An assessment conducted by the UNDP in 2010⁶ revealed following:

- The overall achievement is about 51% against total number of DRM projects listed in the Road Map.
- As an achievement of the implementation of Road Map, significant reduction of human casualties was observed.
- Road Map could not obtained sufficient investment for prevention and mitigation of disasters/hazards.
- Damage to infrastructure, economic losses and number of people affected continued to increase.
- Failure to establish an effective mechanism for the implementation and monitoring of Road Map for DRM

1.1.3. Overview of National Disaster Management Plan (2013-2017) and Sri Lanka Comprehensive Disaster Management Programme (2014-2018)

National Disaster Management Plan 2013-2017⁷, was formulated incorporating the projects identified under the “Road Map for Safer Sri Lanka” and based on the recommendation of the aforesaid assessment by UNDP in 2010.

The plan has aimed to provide the fundamental guideline for all relevant agencies in strengthening working relations and enhancing cooperation towards achieving “Safer Sri Lanka”. The Plan has focused on five result areas with 24 indicators, under the HFA priorities. Whilst approving the NDMP (2013-2017) by the Cabinet of Ministers, a directive was issued to develop a comprehensive disaster management programme together with an implementation modality which was further highlighted in the UNDAC mission report⁸ in 2011.

⁴ http://cabaret.buildresilience.org/2020_Symposium/img/outputs/Colombo%20DRR%20Declaration%2016-12-2020.pdf

⁵ <https://www.preventionweb.net/english/professional/policies/v.php?id=17955>

⁶ Unpublished report of UNDP on Road map Implementation Review 2010

⁷ <https://groundviews.org/wp-content/uploads/2018/12/NDMP.pdf>

⁸ <https://www.preventionweb.net/publications/view/24389>

In line with above, the Sri Lanka Comprehensive Disaster Management Programme (SLCDMP 2014-2018)⁹ was developed under the Ministry of Disaster Management focusing four (04) broader outcomes and eight (08) strategic areas in partnership with 45 Government institutions. The SLCDMP was aimed to ensure the safety of Sri Lanka by reducing the direct and associated potential risk of the country and minimising impacts on people, property and the economy. Its overarching objective is creating and facilitating an enabling environment for multi-hazard, participatory and partnership-oriented disaster management programmes which use risk knowledge as the base, in line with global conventions and frameworks. The four outcomes identified in the programme and proposed budget for outputs identified under outcomes are given in the Table 1.

Table 1: Proposed Budget for 05 years (2014-2018) of SLCDMP to achieve identified outcomes

Outcome item	Description of outcome	Proposed 05-year budget LKR in Million
i.	National and sub national level agencies are capable of assessing disaster risk and make decisions for short, medium- and long-term disaster management.	1419.60
ii	Key development sectors are able to incorporate Disaster Risk Management (DRM) in their respective development initiatives/ processes/ activities at different administrative levels	25,484.80
iii	Communities, Local Governments and sub national agencies have necessary capacities and mechanisms to respond to and recover from disasters.	2,074.00
Iv	A system in place for obtaining advises and continuous monitoring, learning and adapting to facilitate the on-going planning and implementation process.	94.00
Total		29,072.40

Total estimated value of projects amounts to LKR 29billion, as shown in Table 1. SLCDMP focused 83% for risk reduction investments and 6.9% for the preparedness for response and relief management, emphasising the interest to invest more in risk sensitive planning. However, the implementation was succeeded only around LKR 9 billion from the national consolidated funds through the National Planning Department (NPD). UNDP who was the key technical agency for the implementation of the SLCDMP invested additional LKR 100 million for various programmes and capacity strengthening activities through the Programme Management Unit of the SLCDMP.

Forty-Five (45) major activities identified under the SLCDMP, were categorized against the 04 priorities of SFDRR and the level of implementation was surveyed enrolling all stakeholders of the SLCDMP. Survey results have been summarized in Table 2 showing the lowest level of achievements recorded under SFDRR **Priority 1** and **Priority 3**; Understanding risk and Risk sensitive investment

⁹ <http://www.disastermin.gov.lk/web/images/pdf/slcdmp%20english.pdf>

for resilience, emphasizing more assurance is required on understanding risk and Risk sensitive investment for resilience.

Table 2: Comparison of SLCDMP against the SFDRR Priorities

Activities Under SFDRR Priority areas	Number of programmes	Level of Implementation (%)		
		High	Moderate	Low
PA 1. Understanding risk	11	0	18	82
PA 2. Strengthening Risk Governance	12	17	33	50
PA 3. Risk reduction investment	10	10	30	60
PA 4. Preparedness EW, response and recovery	12	17	42	41

1.2. Priorities for the Next Decade of Disaster Risk Management

Considering the policy approach of the SFDRR and vision of the National Disaster Management Policy towards achieving the goals of the national development agenda “**Vistas of Prosperity and Splendour**”, the NDMP derives its strategic direction towards building a resilient nation with a greater emphasis towards risk reduction and investments through the multi-sector approach.

It further builds on its priorities together with achievements of disaster risk management implementation during the past decade and considering the current and futuristic disaster context over the country and the region, covering all phases of the disaster continuum.

In line with these parameters, and with an extensive scale of stakeholder consultations, the plan focuses on the following key areas for the next phase of disaster risk management in the country from 2022-2030.

- Embrace national-level commitments together with an adequate policy and legal environment towards risk-sensitive development planning for building resilience
- Enforce regulations to streamline and empower sectoral agencies for integrated risk reduction investments and implementation
- Strengthen end-to-end, people-centric, multi-hazard early warning systems and climate services whilst building risk knowledge across the society for impact-based decision making at all levels
- Build planning process with embedded institutional capacities with strong scientific evidence through an understanding of vulnerabilities in physical, human, environmental, social and economic contexts
- Ensure disaster risk reduction regulatory provisions are in practice for national physical planning, zonation planning, land use planning, and major development projects in the country
- Forge equal opportunities and data sharing environment for every stakeholder from national to community level to take part in all stages of disaster risk reduction interventions

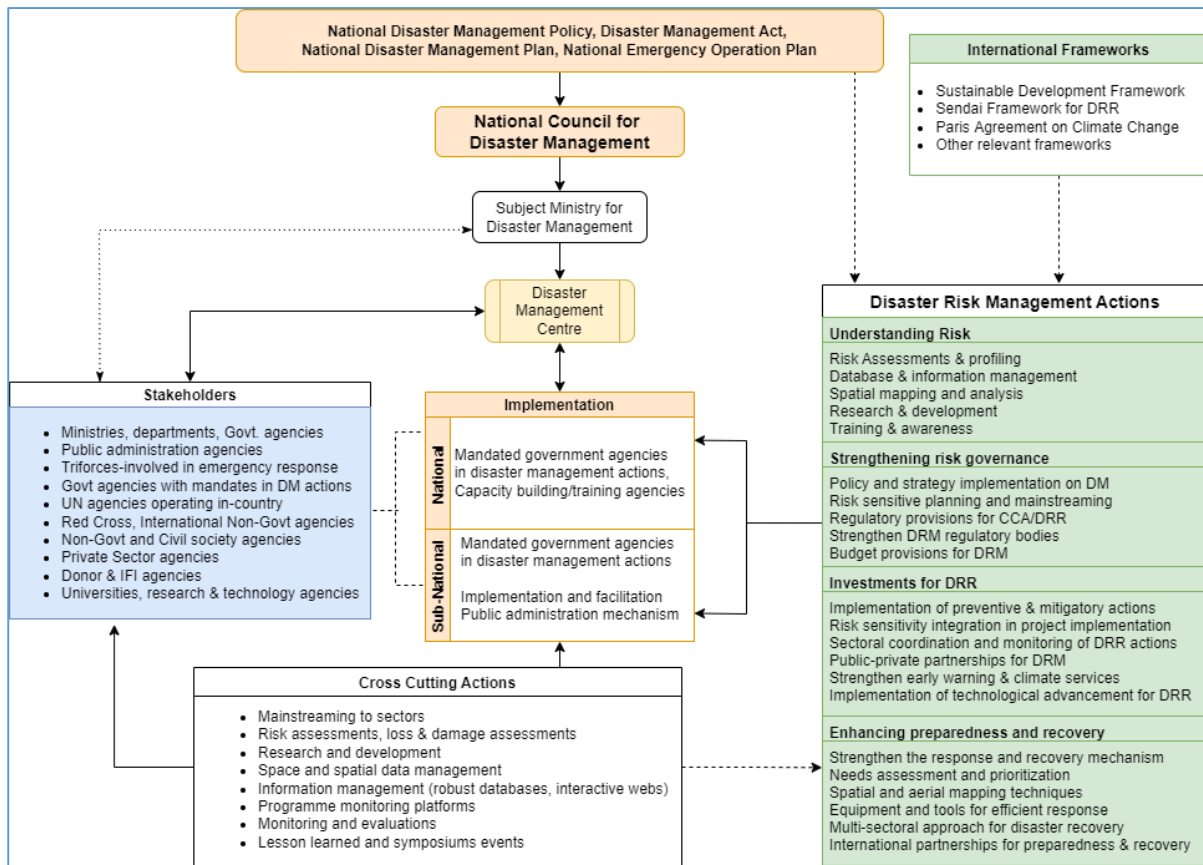
- Administer coordinated disaster response and relief operations under one umbrella to foster strong integration with social protection mechanisms in the country towards household food security
- Promote inclusive risk management planning at sub-national and local levels with leave no-one behind approach ensuring accountabilities and equity in gender and disability
- Build enabling environment for effective disaster recovery mechanism, including relocation, livelihood and infrastructure support
- Foster inter-agency relationships, harnessed planning and shared responsibilities towards optimal resource usage in implementing integrated disaster risk management projects to achieve resilience
- Demonstrate coordinated and harnessed approach in disaster risk management together with national and international stakeholders to foster partnerships in building resilience
- Assure effective use of monitoring and evaluation system in compliance with national monitoring frameworks with integrated data management and reporting mechanism under global and national frameworks

1.3. Disaster Risk Management Framework in Sri Lanka

The prevailing overall Country wide Disaster Risk Management Framework ensures the need for a multi-disciplinary, multi-sectoral, inter-ministerial and inter-agency approach, with the full involvement of all key sectors, as spelt out in the Act and the National Disaster Management Policy. Such a framework is illustrated in Figure 1. This framework considers that “Primary responsibility for dealing with disasters will rest with the national government, with the shared responsibility with all the stakeholders no one leave behind.

DMC, under the guidance of the NCDM and the subject Ministry, will coordinate and implement the Disaster Management Plan through a countrywide DRM mechanism, with the main DRM activities being implemented by the respective mandated national and international agencies.

Figure 1: Disaster Risk Management Framework – Sri Lanka



The framework for disaster risk management requires legal and institutional arrangements to address the need for each action displayed in the framework and identify the roles and responsibilities of the actors and the resources needed to put the framework into practice. The national disaster risk management framework conforms to the Parliament Select Committee Report¹⁰ guiding principles specified in the National Disaster Management Policy.

1.4. The National Disaster Mangement Plan (2022-2030)

The NDMP is the overarching development plan towards risk-sensitive development planning and building resilience under the national development agenda.

This plan guides all Ministries, Departments, Statutory bodies, officials of sub-national administrations (provincial Ministries and district divisional and local government); relevant officers and personnel

¹⁰ Report of Sri Lankan Parliament Select Committee on Natural Disasters, August 2005

from Governmental and UN Agencies, INGOs Non-Governmental organizations; civil-society organizations, private sector, and professional organizations in Sri Lanka.

This plan will be developed on par with the National Climate Change Adaptation policy and Plan, Sustainable Development policy and respective plan focusing related sectors covering the subjects indicated in the SLDM Act have been taken into consideration in preparing the plan to the maximum extent possible. Any lapses in consideration will be taken into account as and when identified during implementation.

1.5. Strategic Direction of Disaster Risk Management in Sri Lanka 2022-2030

1.5.1. Vision

The Vision of the NDMP 2022-2030 is “**To ensure substantial reduction of disaster losses and damages and strengthening resilience**”.

1.5.2. Goal

The Goal of NDMP is “Prevent New Risks, Reduce Existing Risks and Strengthen Resilience”

1.5.3. Objectives

Overall objective of NDMP is to establish a holistic disaster risk management approach by integrating disaster risk in all phases of development processes in all sector with improved risk knowledge on DRM following participatory approach.

Overall Objective will be accomplished through the following sub objectives;

1. Create a holistic disaster risk management approach empowered with appropriate laws and regulations by mainstreaming risk reduction into development planning
2. Establish a mechanism to incorporate disaster risk to all sectoral plans by undertaking analysis and disseminating risk knowledge at national and sub-national levels
3. Guide, implement and monitor, risk-sensitive development plans with adequate budgetary allocations in partnership with internal and external stakeholders ensuring a multi-sector, multi-agency approach
4. Build preparedness capacities for response at all levels to manage disasters, and establish a participatory disaster recovery mechanism nurturing build back better approach towards resilience communities

1.6. Scope of the Plan and Structure

This NDMP covers strategic approach, management arrangements, relationships, mechanisms and corresponding timeframes for action to establish the DRM framework and related implementing programmes in the country with a multi-disciplinary approach, i.e., multi-sectorial, inter-ministerial, and inter-agency multiple-stakeholder participation within a period of 2022-2030 covering the entire disaster management cycle.

The Plan envisages holistic disaster risk management process at all levels covering the following vital areas:

1. Pre-disaster Measures

- Disaster risk management needs to be based on an understanding of disaster risk in all its dimensions

- Coherence of national and local frameworks of laws, regulations and public policies that, by defining roles and responsibilities, guide, encourage to take action and address disaster risk
 - Public and private investment in disaster risk prevention and reduction through structural and non-structural measures to enhance the economic, social, health and cultural resilience
 - Disaster preparedness needs to be strengthened for more effective response and ensure capacities are in place for effective recovery
2. **During disaster:** Emergency Response Measures (Measures during and immediately after the disaster impact)
 3. **Post-disaster (short, medium and long term):** Relief and recovery; Loss and damage assessment; Rehabilitation; Relocation and Reconstruction; Long-term assistance to develop the community resilience through build back better approach.

Different aspects of DRM are discussed under multiple chapters, while support information and documents are given in Annexure. The proposed time frames of activities proposed are in Volume II of the plan.

1.7. Future Revisions and Upgrading the National Disaster Management Plan

The plan is generally targeting a decade of strategic focus from 2022-2030 following directives of the SFDRR. Further, it guides multi-stakeholder implementation for five years from 2022 to 2026 with a detailed action plan together with tentative budget and timeframe.

It will be the responsibility of DMC to upgrade the plan as and when the situation in the country demand so, i.e. either after a review in five year of implementation or after major disasters or in any other situation arise demanding change in the plan ensuring the participation of all stakeholders.

1.8. Disaster Management Plans for Different Levels and Sectors in Sri Lanka

Disaster Management is a cross cutting subject and having strong linkages with all sectors. Hence, disaster management should be integral part of all institutions and sectors. Hence, As per the SLDM Act all Ministries, Departments and statutory bodies should prepare disaster management plan according to their mandates following the guidance given in the NDMP to ensure the resilience society and sustainable development.

Figure 2 depict the inter-relationship with different disaster management plans at various levels. Administrations at Provincial, Local Authority (LA), District, Divisional and Grama Niladhari (GN) levels also will have their disaster management plans accordingly. All implementing authorities, IGOs, NGOs and grass root level organizations will have their operational plans in conformity with the NDMP¹¹.

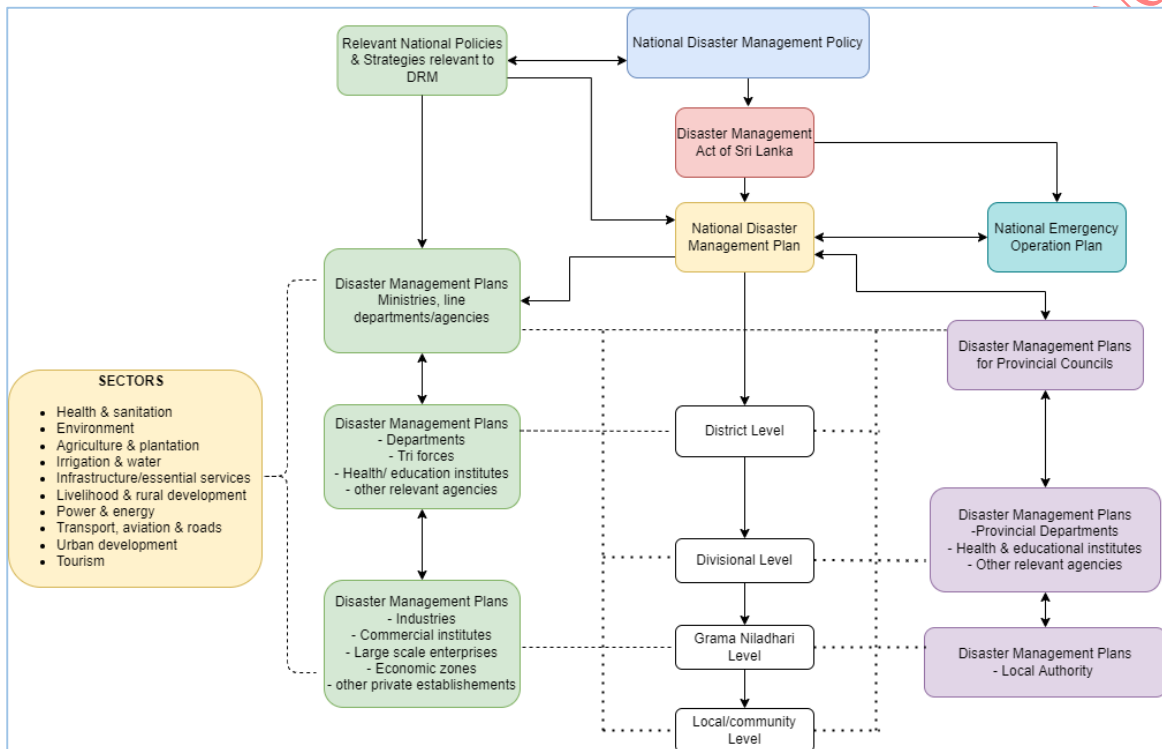
The NDMP directs all these plans at various levels and different sectors are to develop, which will consist of the following priority areas envisaged in the SFDRR:

- Understanding Disaster Risk
- Strengthen Disaster Risk Governance
- Risk Sensitive investment for resilience

¹¹ Section 10 Sri Lanka Disaster Management Act No.13 enacted in the Parliament of Sri Lanka in May 2005

- Disaster Preparedness for Emergency Response, Rehabilitation, Reconstruction and Recover for Build Back Better

Figure 2: Vertical and Horizontal Disaster Management Planning in Sri Lanka



There are several national development plans validating inter-alia relationships in disaster risk management vertically and horizontally. The NDMP will implement coherently with those plans under other mandated agencies which are very important to have synergies and also combined outputs towards achieving national vision. Such national plans are identified in NDMP and the respective implementing agencies need to look at cohesive interdependent elements of those for effective integration and resource allocation in their annual plans and budgetary frameworks.

2. Understanding Disaster Risk

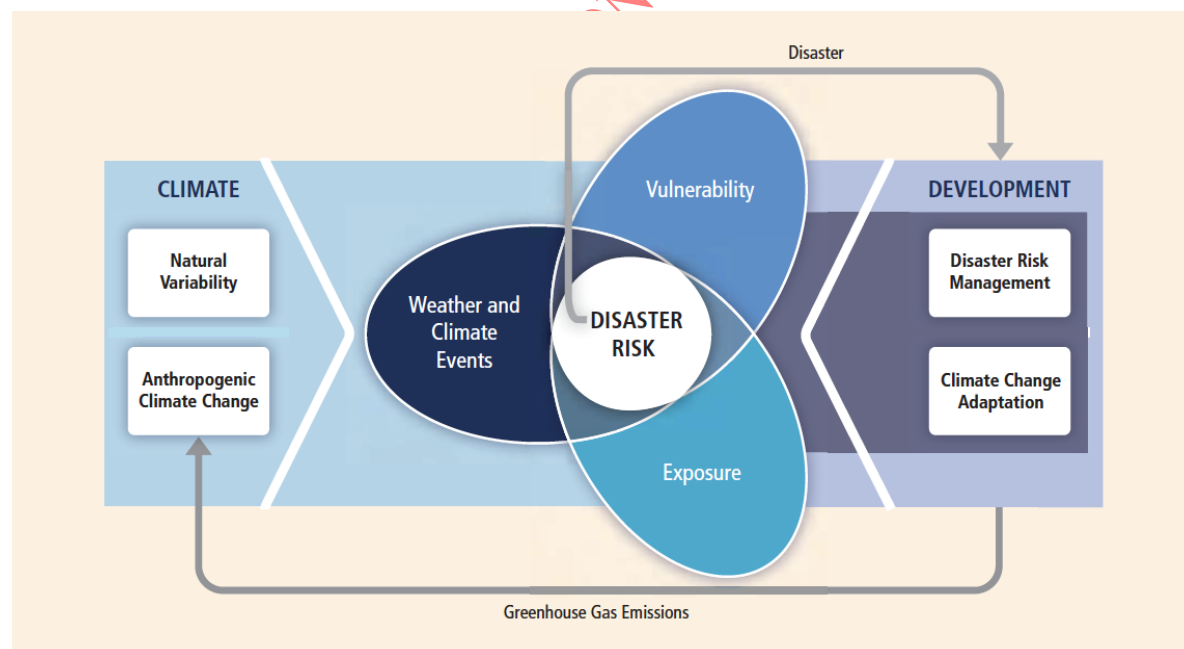
Understanding risk is the basis for any risk management intervention. Achievement of the national risk reduction goals, Sendai Framework targets and SDGs will heavily depend on better understanding of disaster risk including hazards, exposure, vulnerabilities and capacity gaps. Risk information should be readily available for all stakeholders so that informed decisions on risk reduction can be made leading to resource efficiency and effectiveness of the interventions. Tools and mechanisms for efficient sharing of risk information, harnessing on the new technological advancement in risk assessment, visualization and communication provides better opportunities for making risk information available and use for risk for development and risk reduction programs.

Such understanding on disaster risk will help determine acceptable levels of risk and appropriate DRM ensuring combination of measures to;

- (i) Reduce risk to acceptable levels through structural and non-structural investments
- (ii) Manage the residual risk through disaster preparedness measures, including actions to avoid loss of life (e.g., early warning)
- (iii) Ensure adequate and timely financing arrangements for disaster relief, early recovery and reconstruction (e.g., disaster reserves, contingency budget, and insurance)

Disaster risk is a function of the probability of occurrence of a hazard of varying severity in a particular location, the people and assets in that location and therefore exposed to the hazard, and the level of vulnerability of those people and assets to that hazard (Figure 3¹²).

Figure 3: Components of Disaster Risk ,Climate change and Development



Understanding this inter-relationship between hazards, on the one hand, and the exposure and vulnerability of the population, buildings, livelihoods, and infrastructure, on the other, are essential for

¹² ADB. 2014. Operational Plan for Integrated Disaster Risk Management. Manila.

decision making. It provides critical knowledge for use in decisions that reduce disaster risk of exposed population and assets in the present and avoid creating disaster risk in the future.

2.1. Hazard, Vulnerability and Risk Assessment

Sri Lanka is frequently affected by hydro-meteorological hazards such as floods, drought and high winds while flood is reported as the most common disaster. River floods and Urban floods are triggered by heavy rainfall and anthropogenic activities such as filling of low lands with water retention areas. Reservoir floods occur due to overflow/spilling, dam breaches, the rapid emergency release of water owing to heavy rains etc. have to be given extra consideration in hazard, vulnerability and risk assessment.

Being an Island nation with tropical climate condition, Sri Lanka is highly vulnerable to the impacts of climate change. Extreme weather events such as high-intensity rainfall followed by flash floods and landslides and extended dry spells resulting water scarcity for drinking and agricultural purposes. Even though Sri Lanka can do minimal to mitigate climate change, the adaptation capacity of people needs to be improved urgently.

The major hydro-meteorological and geo-physical disasters leading to loss of lives and property damage are floods, landslides, cyclones/high winds, drought, lightning, tornadoes, coastal inundation, and tsunami. In addition, health hazards, including epidemic-prone infectious diseases, vector-borne diseases, and diseases that may arise from environmental pollution, unsafe foods, and radiological events, pose a significant impact on public health, the economy, and society. Lessons learnt from COVID-19 global pandemic; the whole society impacted in numerous ways irrespective of their context.

Climate change triggers pest and disease attacks in crops resulting decrease in quality and quantity of yield. For example, Armyworm damage in Maize, reported in 2019, significantly affected poultry feed production. Moreover, Animal attacks such as elephant and wild boar may lead to loss of lives and crop damages leading to food insecurity in most vulnerable communities.

Hazards such as soil erosion and sedimentation, salinity intrusion, contamination of drinking water sources, and bush/forest fires should also receive more attention as they might create medium- and long-term adverse effects to the national economy. The probability of recurrence of these Natural hazards is bound to increase in future since uncertainties of weather due to climate change would further be aggravated by unplanned land use leading to environmental degradation, deforestation and desertification.

Although there are no records of earthquake occurrences in Sri Lanka, few earth tremors have been reported in the recent past. However, the existing technology is not capable of predicting earthquakes or earth tremors. Therefore, risk reduction and preparedness for response are vital to minimize potential damages.

2.1.1. Hazard Assessment and Hazard Mapping

Hazard assessment is the process of identifying possible dangerous events that may cause life losses and property damages and determining features inclusive of the degree of severity, duration, extent and impact of such events.

Hazard zonation mapping is essential for preparing vulnerability and risk maps for any given area. The leading technical agencies that are responsible for hazard information and mapping are indicated in Annex B. In addition, these agencies are responsible for developing and updating hazard maps periodically as appropriate.

2.1.1.1. Base Maps for use in Hazard Mapping

Survey Department is the national focal agency responsible for survey maps and would be one of the central locations for having base maps available. DMC in collaboration with other stakeholders, developed two disaster-related spatial and non-spatial data sharing systems (www.Riskinfo.lk & www.Desinventar.lk) addressing a grave need in the Disaster Management sector of Sri Lanka.

2.1.1.2. Hazard Mapping

At the national and local levels, hazard mapping must be initially undertaken by the respective responsible agencies shown in Annex B. Hazard map preparation will commence with the most devastating and common hazards, followed by less frequent and less harmful. Specialized agencies will support the agencies that do not have the required capacity. Appropriate scales for mapping would be as follows (Table 3).

Table 3: Required Hazard Map Scales

Scale	Coverage	Indicative Application (s)
Highly localized: 1:200–1:2000 (possibly to be supplemented by more detailed images)	Project or construction sites	Project or construction sites Detailed engineering design of infrastructure
Local: 1:2000–1:25000	Human settlements GN Level or part of Local government level /D.S. Division level assessment	Preliminary engineering or project design Contingency or disaster preparedness plans Basis for quantitative risk assessments
Medium 1:25000–1:100000	Local government level /D.S. Division level or small catchments assessment	Urban planning Urban transport/energy/ water project
Regional: 1:100000–1:500000	Large catchment areas Regions, provinces, Districts assessment	Design of larger, geographically spread infrastructure projects (e.g., rural roads, irrigation)

Source: Adopted from Van Western - Hazard mapping scaling guideline

In areas prone to multiple hazards, it will be the responsibility of the DMC to prepare integrated hazard maps coordinating with other agencies.

2.1.1.3. Hazard Mapping at Community Level

District Disaster Management Coordinating Units (DDCMUs) have already coordinated with CBO, INGO and NGO and commenced developing community-level hazard maps adapting Participatory Risk Assessment (PRA) tools and adhering to the guideline issued by DMC. The community maps should include risk areas, evacuation routes, safe areas and temporary shelters, etc.

Further, it is important to digitize these local level maps for scientific approach for effective risk reduction measures at local level. Thus, realistic GN level hazard maps showing areas prone to various hazards will be finally available, and could be integrated to GN level DM Plans.

2.1.2. Vulnerability Assessment

Vulnerability assessments are conducted to determine conditions that increase susceptibility to damage and assess the capacity of the population to manage the consequences. Vulnerability assessments combine the information from risk identification with an inventory of the existing (or planned) population, property and infrastructure (element at risk) exposed to hazards and help determine exposure, coping capacity and resilience of the physical structures and people. Social aspects of vulnerability consist of several vital determinants such as gender, age, abilities, access to resources i.e., income, knowledge and information, productive assets.

2.1.3. Risk Assessment

A holistic risk assessment that considers all relevant hazards and vulnerabilities, both direct and indirect consequences, and a route of risk will support to design the policies and investments in efficient and effective way.

The assessments would include diverse types of direct and indirect impacts of disaster – physical, social, economic, environmental and institutional. They would also provide information on the underlying drivers of risk – climate change, poverty, inequality, weak governance and unplanned urban development.

Government officials involved in public investment planning, including officials from ministries of planning, and planning units of line agencies and local government as well as private sectors investors is increasingly being called upon to undertake resilient development, in support of efforts to achieve the Sustainable Development Goals (SDGs).

Hence, Risk assessment is necessary as risk information and risk maps are required in implementing the main development and DRM activities such as:

- Prevention and Mitigation
- Planning for response and recovery
- Enhance community level DRM with livelihood development and poverty reduction
- Land-use zonation, development planning, physical planning, major infrastructure development

Risk analysis can be carried out at the national, local, community and project levels, and the level/scale of risk assessment depends on the objective. The data requirements and analytical approaches are then determined based on the purpose, as mentioned in **Table 4**.

Table 4: Level of Risk Assessment

	Level of Risk Assessment	Purposes
L1	National	Formulation of national policies, legislations, regulations, strategies, programmes, budget provisions
L2	Sub-national	Contingency and recovery planning, development and land use planning, DRR action planning
L3	Community	Risk awareness, disaster preparedness, engagement
L4	Specific Major Projects	Health & Safety, Critical infrastructure protection, implied risk

2.2. Data for Risk Assessment.

Data required for risk assessments can be accessed from national DRM agencies, government line agencies, statistical offices, specialized agencies (meteorological, hydrological or seismological), research institutes, universities, international development partners and local community groups. However, acquiring sufficient and appropriate data can be a challenge, as datasets will often be incomplete, outdated, or simply unavailable. In addition, the reluctance of certain major mainstream agencies to share information and data has also been identified as one of the critical drawbacks.

The historical Disaster Information System of Sri Lanka (DesInventar) has been operationalized and continuously being updated. Interested stakeholder agencies can access the web-based database at www.desinventar.lk. DMC further expand the data sharing for DRM, introducing Riskinfo Spatial data-sharing platform. DMC will continue and coordinate as appropriate activities of the National Level Emergency Information Database; Sri Lanka Disaster Resources Network (SLDRN). In addition, other data collection activities with other relevant agencies will continue updating.

DMC has also compiled drought hazards maps using Remote Sensing Techniques with the support of UNSPIDER. World Food Program has supported DMC and the Meteorological Department, providing a “Platform for Real-Time Information and Situation Monitoring” (PRISM) System for drought monitoring.

Further, DMC has taken initiatives to introduce online damage and loss reporting system enabling stakeholders to represent 13 sectors in the country in collaboration with the National Planning Department (NPD), Global Facilitation for Disaster Risk Reduction (GFDRR).

The government of Sri Lanka introduced a National Spatial Data Infrastructure (NSDI) program in 2016, intending to improve the use of spatial data and promote spatial information-based decision making. The primary focus of NSDI has been to create infrastructure and solutions for spatial data standardization, avoid data duplication, improve data quality, improve transparency in data sharing across departments and provide a technology platform for developing spatial data decision support tools. NSDI creates a platform where government and private sector organizations can collaborate to manage, improve and exchange spatial data and information. Complying with international standards like ISO and Open Geospatial Consortium guidelines, NSDI continues to institutionalize data sharing, standards, formats, policies, data creation, and update processes across Sri Lanka's Government (UNSPIDER 2019). Disaster management has been identified as a crucial pilot area under the NSDI. A specific model has been developed for disaster response compiling all required available data into one platform.

2.3. Research and Development

Disaster risk reduction measures identify risk at various spatial and temporal scales and construction techniques that strengthen the resilience of buildings and infrastructure to different types of hazards have been benefited through scientific research and innovations. However, after adopting the SFDRR, a collective consensus emerged that strategies for DRR require a more integrated approach that engages all scientists, engineers, and policy planners. Based on this more integrated policy perspective, policy guidelines should better integrate science and technology.

There have also been significant achievements in recognizing the role of higher education in disaster risk reduction, both as a specialized subject and by integrating disaster studies into a broader higher education curriculum. In addition to contributions from “hard” science or natural science, the importance of “soft” or social sciences has also gained prominence. A positive outcome attained from the analysis of many major disasters has been the realization that there needs to be a good balance between hard and soft technology and engineering and social solutions.

Several science-policy negotiations and multilateral dialogues need to be supported, encouraged and coordinate for effective DRR, which identified the need to bring science and technology into the policy and planning mainstream to achieve more effective risk reduction. With the integration of DRM in university education, Ph.D., Masters and Bachelor Degree students are now encouraged to select Disaster Risk Management related themes for dissertations. The relevant government agencies will undertake important and urgent research studies. These agencies may obtain assistance from 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 team.

Publication of research findings also will be promoted. Still, the country has not established National level Research Platform enabling to debate, discuss, and share data information and research findings with the communities. A database of references of research study reports and research papers can be kept as a page on the website. This has been identified as a prime requirement in many national forums. Section 8 of the National DM Act provide the provision for DMC to coordinate and facilitate Research on DRM.

The Plan encourages Government agencies, academia and research institutions to avail financial provisions for such research and bring findings to appropriate platform for informed decision making. The DMC will make necessary coordination and also create platform to discuss these research findings for appropriate incorporation in DRR measures. Further, it is important to motivate researchers for more engagement in the DRM sector with adequate grants and environment for effective use of research findings for developments.

3. Strengthening Disaster Risk Governance to Manage Disaster Risk

Disaster risk governance elucidates the way of coordinating the government authorities, private sector, civil societies, and other stakeholders at national and sub-national levels to reduce disaster risk. It confirms the availability of capacity and resources adequately for the prevention, management and recovery from disasters. Disaster Risk Governance is key in creating enabling environment to operationalize plans and strategies for disaster risk management. Hence, elements of disaster risk governance: include institutions, organizations, laws, regulations, norms and contributions from civil society and private sector actors that influence risk reduction.

3.1. Global Frameworks for Disaster Risk Management

In 2015, the Member States of the United Nations agreed on an encompassing and coherent 2030 Agenda for Sustainable Development. The Sendai Framework for Disaster Risk Reduction 2015-2030 (SFDRR), the Paris Agreement on Climate Change, the New Urban Agenda, the Addis Ababa Action Agenda on Financing for Development, and the Agenda for Humanity are all in coherence with the United Nations' Sustainable Development Goals (SDGs). These agreements consider elements of DRR and resilience in their scope. Though each agreement frames disaster risk and resilience from different perspectives, there is a common understanding that DRR is one of the prerequisites to building resilience, which is imperative to achieving sustainable development.

3.1.1. Sendai Framework for DRM.

The Third UN World Conference in Japan, in 2015, has adopted the SFDRR that serves as a global blueprint for disaster risk management. The framework will apply to the risk of small-scale and large-scale, frequent and infrequent, sudden and slow-onset disasters, caused by natural or manmade hazards as well as related environmental, technological and biological hazards and risks. It aims to guide the multi-hazard management of disaster risk in development at all levels and across all sectors.

The non-binding agreement will play a crucial role for signatory government to drive their national plans accordance with its targets towards *“the substantial reduction of disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries”*.

The SFDRR calls for strong political leadership, commitment, and involvement of all stakeholders at all levels (local, national, regional and global) to achieve substantial reductions in disaster risk and losses and strengthen resilience to natural and man-made hazards. It recognizes the primary role of states and the shared responsibility of local governments, the private sector, civil society organizations, and others to achieve its goal to *“prevent new and reduce existing disaster risk through the implementation of integrated and inclusive economic, structural, legal, social, health, cultural, educational, environmental, technological, political and institutional measures. Risk reduction measures prevent and reduce hazard exposure and vulnerability to disaster, increase preparedness for response and recovery, and thus strengthen resilience”*. It reinforces the shift from managing disasters to managing risk and building resilience as a shared vision of the 2030 Agenda for Sustainable Development¹³.

¹³ <https://www.undrr.org/publication/sendai-framework-disaster-risk-reduction-2015-2030>

As per the Sendai Framework, to reduce disaster risk, there is a need to address existing challenges and prepare for future ones by focusing on monitoring, assessing, and understanding disaster risk and sharing such information.

The four priorities for action under the Sendai Framework are:

- I. **Priority 1:** Understanding disaster risk
- II. **Priority 2:** Strengthening disaster risk governance to manage disaster risk
- III. **Priority 3:** Investing in disaster risk reduction for resilience
- IV. **Priority 4:** Enhancing disaster preparedness for effective response and to “Build Back Better” in recovery, rehabilitation and reconstruction

3.1.2. Asia Regional Plan for Implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030

The Sendai Framework highlights the need for agreed regional and sub-regional strategies and mechanisms for cooperation and progress to be reviewed by regional and global platforms¹⁴. At the Asian Ministerial Conference for Disaster Risk Reduction (AMCDRR) held in Ulaanbataar, the government endorsed the ‘Asia Regional Plan for implementation of the Sendai Framework’ (Regional Plan) to facilitate the cooperation and collaboration for building risk resilience in Asia. The regional plan aims to provide:

- Broad policy direction to guide the implementation of the Sendai Framework in the context of the 2030 sustainable development agendas in the region;
- Long term road map, spanning the 15-year horizon of the Sendai Framework outlining pathways to achieve seven global targets;
- Two-year action plan with specific activities prioritized based on the long-term road map and in line with the policy direction.

3.1.3. Paris Agreement on Climate Change

Both climate change and disaster management are cross-cutting subjects. Therefore, coherence between the Climate Change Adaptation and Mitigation and DRM is crucial for the sustainability of both programmes as the experienced impact of climate change-induced disasters severely affected people's regular life patterns.

National Environment Policy and Climate Change Policy are the key policies directly addresses Climate Change actions in Sri Lanka. Article No. 2.2.10 of the National Environment policy of The Government of Sri Lanka stated “*The risks of climate change will be managed by implementing adaptive strategies that minimize the impact of climate change on both the people, and the economy, of Sri Lanka*”¹⁵ giving more emphasis among others on;

“Review the effect of climate change on Sri Lanka through the development of impact scenarios and response strategies for sea-level rise, changing water resources available, including storm and drought frequency on agricultural production and the economy as a whole and for disaster response”.

¹⁴ <https://www.preventionweb.net/publication/action-plan-2018-2020-asia-regional-plan-implementation-sendai-framework-disaster-risk>

¹⁵ National Environment policy of The Government of Sri Lanka

Consequently, Climate Change Policy was enacted in 2012 by the parliament to provide guidance and directives for all the stakeholders enabling them to address the challenges.

National Adaptation Plan (NAP) for Sri Lanka (2016–2025) serves as the framework for the Sri Lankan Government’s responses to climate change consequences.

3.1.4. Sustainable Development Goals

The Sustainable Development Goals (SDGs) are a universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity. The SDGs are a set of seventeen aspirational “Global Goals” with 169 targets and 244 indicators between them to be achieved by April 2030. The SDGs was born at the United Nations Conference on Sustainable Development in Rio de Janeiro in 2012¹⁶.

The SDGs focus on new areas such as economic inequality, innovation, climate change, sustainable consumption, peace and justice, among others. The commitment of the Government of Sri Lanka (GOSL) is reflected in having a separate ministry on Sustainable Development, appointing a Parliament Select Committee on SDGs, and establishing cluster committees on SDGs etc.

The NDMP will support the national efforts to achieve SDGs through its strategies towards safer Sri Lanka.

3.1.5. National Development Policy “Vistas of Prosperity and Splendour”

The country has ten critical policies that the nation will collectively work towards to ensure the sustainability of people and peace. The vision is ‘Vistas of Prosperity and Splendour where everybody can thrive without fear. The DRR community had been pushing for resilience to be a cross-cutting aim within the national policies and its targets and framed as a development challenge. Resilience is highly reflected in this national development framework, and communities cannot be resilient to disasters if they have been worn down by disease, insecurity and poverty.

The national policy framework ‘Vistas of Prosperity and Splendour¹⁷ identifies disaster management to be addressed in several development sectors, such as Land, Water, Settlements and Cities, Sustainable Environment, and Economic development practice. More specific policy commitments and strategies include the following:

- Ensuring privative measures and early warning systems to minimize the loss of lives, property and economic damage from the disasters
- Protecting the lives, property and economic damages from disasters
- Making internal system of disaster management functioning in a synchronized manner
- Strengthening disaster warning system
- Strengthening the institutions with powers and facilities to act swiftly and responsibly
- Ensuring the data availability for planning and informed decision making
- Ensuring appropriate compensation for affected people and properties
- Ensuring the safety of vulnerable people such as women and children
- Mitigating Human Elephant Conflict (HEC)

¹⁶ Transforming our world;2030 Agenda for Sustainable Development

¹⁷ Ministry of Finance, Sri Lanka, Vistas of Prosperity and Splendour

<https://www.treasury.gov.lk/national-policy>

3.2. Institutional Framework for Disaster Risk Management

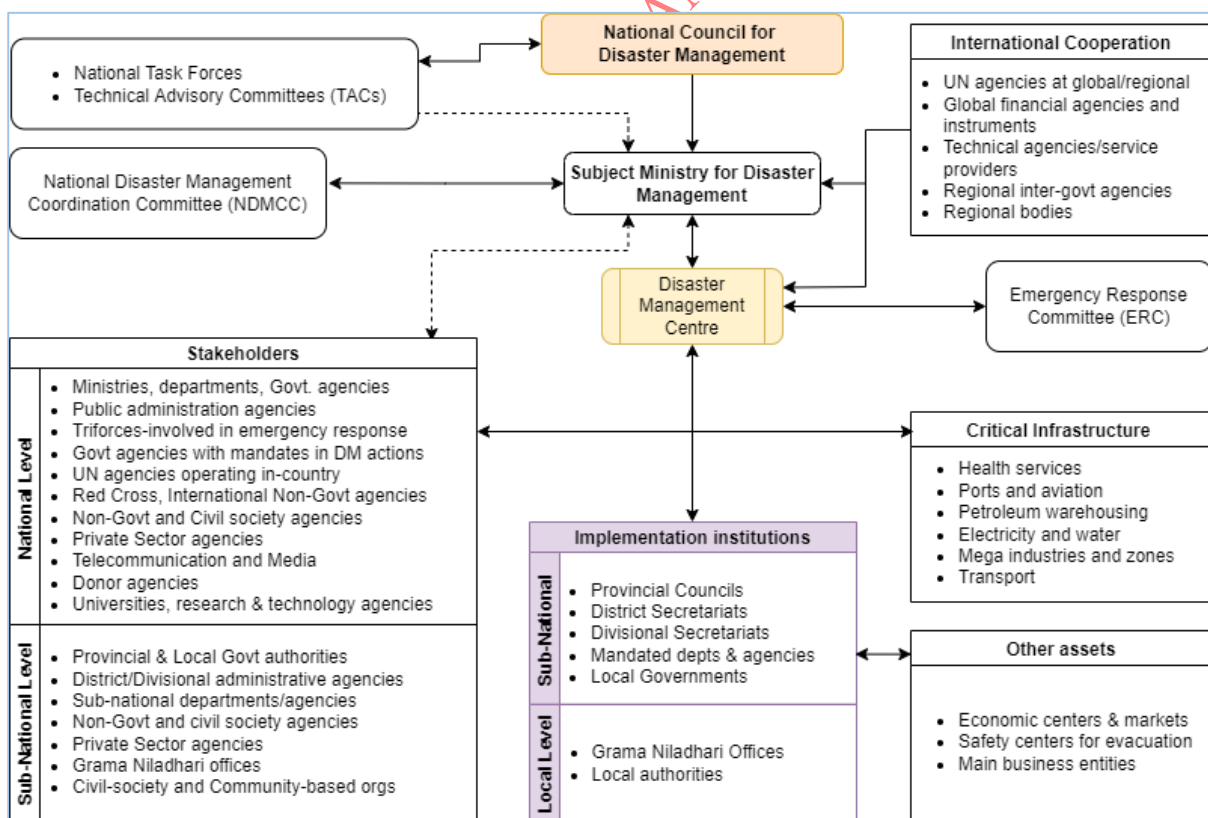
The three pillars of the disaster risk management framework consists of policies, institutional frameworks and legal arrangements. They combine to form mechanisms necessary to implement and maintain disaster risk reduction actions at all levels - national, provincial, district and local. Each element of this integrated framework must be equally strong for disaster risk reduction to be successful.

The government plays a vital role in establishing a disaster risk management that applies to all government levels, non-government organisations, institutions and sectors. Good governance and strong leadership are necessary to generate the political will to drive the development, implementation and maintenance of the national disaster risk management framework including:

- Recognising the need for a national disaster risk management policy.
- Establishing a policy formulation process.
- Defining the main policy elements.
- Arranging for implementation and maintenance procedures, including monitoring and reviewing the effectiveness of risk reduction actions.

The National Institutional Framework for effective DRM in Sri Lanka is illustrated in Figure 4, which is already effective to a great extent but has to be improved and more formalized. Stakeholder agencies are identified to include institutions responsible for specific hazards/disasters and activities and agencies covering all development and service sectors.

Figure 4: National Institutional Framework for Disaster Risk Management



3.3. Legal Powers of Different Levels of Government and Hazard Specific Institutional Mandates

DRM needs to be an integrated approach that addresses all sectors, and this includes the legal framework under which disaster risk reduction operates.

3.3.1. Decentralization of Disaster Management

Centralized decision making with decentralized implementation ensuring the participation of all levels of stakeholders are vital in DRM process.

3.3.2. Enforcement of Existing Policies of Different Sectors

Incorporating DRM in National Planning Policies, Local Government policy, National Housing Policy, Integrated Agriculture Policy, Climate Change Adaptation Policy and also with connected national policies will make it mandatory for agencies to formulate guiding principles for planning and approving development activities to prevent undesirable consequences. When considering the current rapid development, this is vital in order to the development will not create new risks and environmental degradation. Thus, the prevailing risk will not adversely affect the new development activities.

3.3.3. Responsibilities of Different Aspects in Disaster Risk Management

Apart from the subject ministry, numerous national ministries are responsible for various aspects of DRM. Thus, responsibility for each specific DRM function must be clearly defined. Subject Ministry of disaster management will work with various ministries for effective collaborations in the policy level engagement in DRM while DMC will coordinate and implement policy dialogues, strategic alignments, international assistance and cooperation, partnership with international agencies etc.

3.3.4. Responsibilities of Government Departments and Agencies

There are few line agencies performing various functions under their mandates, and few of those agencies are already working in coordination with the DMC. The agricultural sector is often affected by hazards, especially floods, droughts and animal attacks, however agriculture is not included in the list of subjects in clause 3 (1) (d) of the DM Act. As such, there is a need to review and strengthen identified line agencies. Respective aspects in reviewing mandates of Line Agencies are in Annex D.

3.3.5. Responsibilities of Provincial Councils (PCs) and Local Authorities (LAs)

Currently, PCs, various Provincial Departments / Agencies, and LAs perform multiple 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 that do not receive adequate attention.

The mandates of PCs and LAs need to be reviewed and strengthened and bring them to the mainstream of DRM. DM plans of these different agencies should conform to the NDMP and the NEOP of the DMC. DRR measures have been incorporated into the National Policy on Local Government, published in the Government Gazette on 18th December 2009. The National Policy on Local Government specifically mentions that local authorities should consider hazard parameters in sub-national level planning and DRR measures in all local government activities, paving the way to incorporate DRR into the local government sector.

Various DM activities must encompass the Provincial and Local Government set up, with support extended by the DMC and other national-level institutions. This aspect should receive the highest priority. Some elements of reviewing mandates of Provincial Councils and Local Government Agencies are in Annex E. According to the Provincial Councils (PC) Act of 1987, some aspects of Rehabilitation

and Reconstruction have been decentralized to PCs. This feature also may be utilized for better-decentralized management of these post-disaster aspects.

3.4. District, Divisional and Grama Niladhari Administrations

District/divisional administrative agencies have been considered as the mainline of authority for disaster relief and other related aspects in post-disaster situations. DMC have established Disaster Management Committees at districts/divisions/GN levels, and District Disaster Preparedness Plans and Emergency Response plans are developed and connected training and awareness workshops are empowered.

The Act identifies a divisional administrative setup (Divisional Secretaries) for relief and compensation distribution. The NDRSC has been established as a section of the subject ministry (for disaster management). It liaises with the district secretaries to plan and execute relief recovery and relocation on behalf of the subject ministry. As per the Act, divisional secretaries are supported by the government assessor to determine the payable amount of damages and losses due to disasters. Disaster victims have been protected by the Act, providing provisions to go to the district court to obtain compensation in case of a dispute. But regulations have to be formulated and gazetted as legally required, following the Provision given in the Act for authority for District Secretaries, Divisional Secretaries etc., to initiate action immediately after a disaster.

3.4.1. Disaster Management Committees at National Level

National Disaster Management Coordination Committee (NDMCC) functioning at the national level is chaired by the Secretary of the subject Ministry to coordinate DRM actions together with all stakeholders for harmonized implementation efforts (details of member institutions are given in Annex F).

Further, Emergency response Committee is established under the DMC to discuss and take appropriate coordinated planning and implementation of emergency response functions in time of a disaster or impending disaster.

An Interim Management Committee (IMC) is established under the chairmanship of the Secretary of the Subject Ministry of the Disaster Management to oversee & guide the functions of the Disaster Management Centre, which will act as the monitoring body for the implementation of the National Disaster Management Plan.

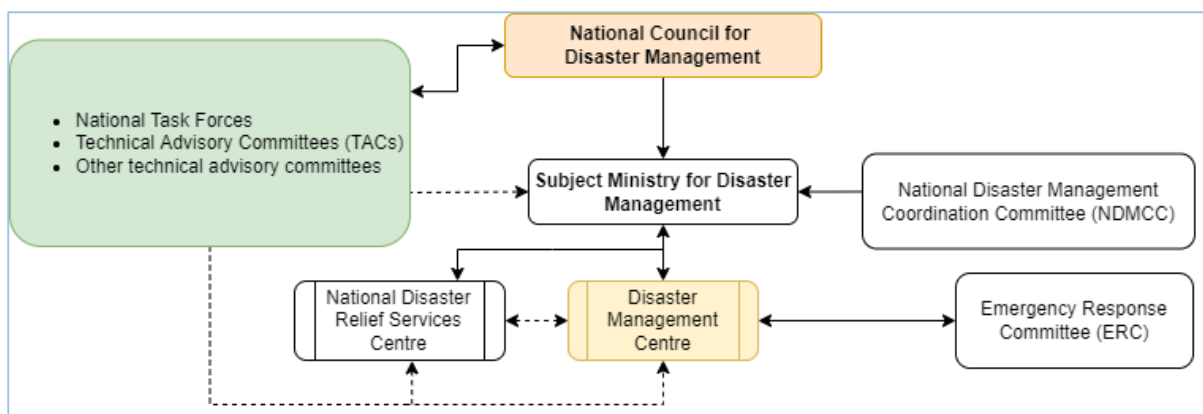
In addition, technical Advisory Committees (TACs) on other subject areas as needed can be appointed as explained in section below.

3.4.2. Technical Advisory Committees (TAC)

In discharging the functions of the NCDM, various TACs can be established under the provisions of the Act. These TACs will consist with various professionals and experts in the disaster risk management and related subjects. These TACs will advice the Council and the DMC on required disaster risk management related activities.

The members and chairpersons of the TAC, as needed, shall be appointed by the NCDM. These will include specialists and members representing different stakeholder agencies handling various natural and human-induced hazards covered in the Act.

Figure 5: Establishment and Coordination of various Advisory Committees



3.4.3. National Disaster Management Coordination Committee (NDMCC)

The government, being a signatory, has agreed to implement the SFDRR, which is a successive framework of the Hugo Framework for Action (HFA) initiated by the United Nations Office for Disaster Risk Reduction (UNDRR). In consequence, as per the requirement of HFA, a National Disaster Management Coordination Committee (NDMCC) has been established as the Sri Lanka National Platform for DM, with representatives from Government Agencies,

Donors, UN agencies, INGO, NGOs, Media, Professional and Academic Institutions, Private Companies and CBOs. This committee is chaired by the Secretary to the subject Ministry of DM. Meeting of the committee to be held a minimum of once in three months to review the progress of implementation of DRM programme of the county.

The first NDMCC established in 2007 under the HFA 2005-2015 international framework which was useful in disaster risk management programme coordination. However, the structure and scope of the Committee need to be formalized for effective advisory and coordination role for the implementation of the NDMP.

3.4.4. Emergency Response Committee

Emergency Response Committee (ERC) is established and coordinated by the DMC, to support entire emergency planning and implementation in the country and especially meets in a major calamity which needs national level interventions from various agencies and sectors.

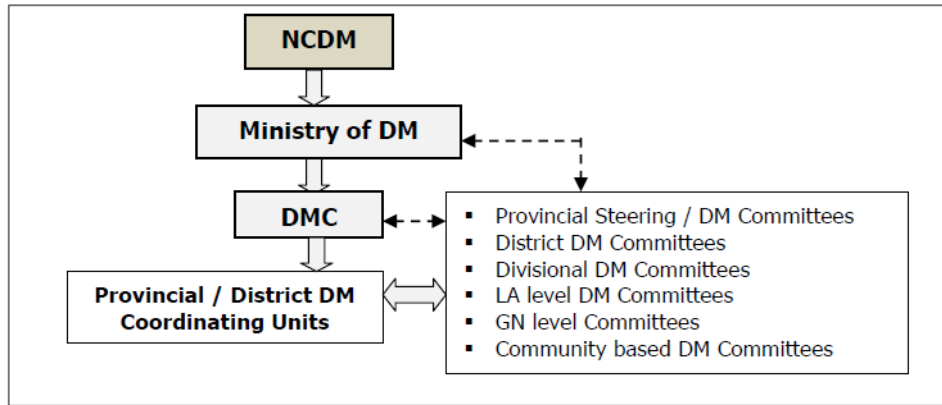
ERC to discuss and agree emergency actions stipulated in National Emergency Operation Plan (NEOP) and related matters according to the situation. The forum discusses the available human resources and equipment, mobilization arrangements, funding arrangements, immediate preventive actions and identification of gaps for smooth emergency operation.

This allows all relevant agencies to activate their contingency plans (or emergency actions of respective Institutional Disaster Management Plans) according to the situation analysis and take appropriate actions in coordination with DMC.

3.5. Disaster Management Committees functioning at sub-national levels

There will be Steering Committees and DM Committees at different levels established, chaired by the respective administrative heads and coordinated by the DMC / District DM Coordinating Units as illustrated in Figure 6.

Figure 6: Coordination of DM Committees at sub-national levels



The compositions, convening and coordinating of DM Committees at different levels are given in Annex G. During a disaster event, however, politicians at the respective levels will chair these meetings for speedy decision making, such as senior Ministers/Chief Ministers/Governors at the provincial level and Ministers / MPs at the district level as appropriate.

3.5.1. Convening and Coordinating Meetings of Disaster Management Committees

It is essential for Disaster Management Committees at each level to meet regularly as a routine for general preparedness. Before monsoons and inter-monsoonal rains District, Divisional, GN Level committees must meet to ensure preparedness for response in all aspects related to anticipating rain-related hazards. DM committees must meet and activate the emergency operations on receiving an early warning or on the occurrence of a rapid-onset disaster.

It would be appropriate for political leaders at respective levels to chair these meetings for speedy decision-making during a disaster event. Convener and coordinator of Disaster Management Committees must be appointed by the administrative head at the given level delegating to him/her the relevant responsibilities. Meetings of the committee will be held regularly. The Assistant Director of the District Disaster Management Coordinating Unit of DMC is responsible for all documentation, correspondence, coordination with sub-committees, updating all information in the plan etc.

3.6. Coordination with national and international development partners

International humanitarian and development partner agencies play a vital role in supporting the national disaster risk management approaches.

The Government (Ministry of Foreign Affairs), subject Ministry of disaster management and DMC will coordinate as necessary with following agencies:

- Coordination with UN Agencies; UN RCO, WHO, IOM, WFP, UNICEF, UNFPA, UNDP
- International Agencies: UNDRR, IUCN, IWMI, ITIC
- Regional cooperation organization: SAARC, SDMC, UNESCAP, UN-OCHA, IOTWMS, IORA, BIMSTEC, ADRC, ADPC etc.
- Donor Agencies: World Bank, JICA, USAID, AUSAID, EU, KOICA, CIDCA, ADB etc.
- International Non-Governmental Organizations (INGOs): OXFAM, A-PAD, World Vision, Child Fund
- National Non-government agencies: Sri Lanka Red Cross, Sarvodaya, Janathakshan, FPA-SL

4. Investing Disaster Risk Reduction for Resilience

Disasters are known to affect the economy, society and the environment in many ways. In addition to the immediate destruction of assets, lives and livelihoods, disasters have medium and longer-term tangible and intangible consequences, poverty and inequity effects, food and water security, and negative macroeconomic outcomes. Relationally, it is evident that, the country had to spend a significant budget for disaster relief and recoveries in the past decade¹⁸ (Annual reports, CBSL).

Sri Lanka is vulnerable to climate change which results in frequent extreme weather events and increased natural hazards. In recent years disaster risks have been on the rise due to factors such as population growth, unplanned urbanization, environmental degradation and competition for scarce resources, climate change, disease epidemics and poverty. National and local infrastructure growth has led to increase in development activities in hazard-prone areas. Thus, public and private businesses and their value and supply chains are more exposed to impact of these hazards aggravating vulnerabilities. This resulting an accumulation of disaster risks in business and industry, is a greater concern for the sustainable of economic growth.

Agriculture sector is the primary source of employment in the country providing livelihood for over 30% of population, is likely to be mostly impacted by global climate change (institute of Policy Studies 2018). The Asian Development Bank (ADB) Country Diagnostics Assessment for Sri Lanka (2019) was indicative of trends in unplanned and recurring costs of disasters. The country has experienced significant droughts in 2011/12 and 2016/17 and major floods and landslides in 2011, 2014, 2016, 2017 and 2021, with disproportionate impacts on the poor and most vulnerable groups.

The impact of flooding in 2016 and 2017 resulting a damage of LKR 99.8 billion and LKR 70.2 billion respectively (PDNA's 2016 and 2017). Both Droughts and floods in 2016/17 disrupted two paddy cultivation cycles and affecting over 2 million people especially farmers who are having many other challenges to secure their income. Further, it indicated significant post-disaster relief and recovery expenditure incurred for the government, both for humanitarian response and longer-term recovery cost of roads, infrastructure and irrigation systems, including provision of financial support for severely affected households through the provision of cash and food vouchers. In addition, the GoSL has supported the reconstruction of houses for affected families, also acquiring significant budgets during past several years, burdening the national economy.

Public investments in critical infrastructure areas, including transport, energy, construction, water, communication, education and health, are vital to build resilient societies and businesses. In some disaster events, damage to public infrastructure accounted for the majority of total direct disaster damages. These damages are not only overpriced for government but also disrupt business operations and entire supply chain. Private sector bears a major part of assets and infrastructure in the country. Thus, it is imperative investments for resilient environment and infrastructure for the private sector for business continuity and sustainable economy. In parallel, private sector investment are sometimes creating new risk for the entire society, especially mega scale industries and zones. Hence, risk sensitive development for both public and private sector is paramount for achieving SDG goals and resilience Sri Lanka.

The Public Investment Programme (PIP 2021-2024) of the GoSL, has recognized the adequate emphasis for investments in DRR towards building resilient nation which is a success for the sector. However,

¹⁸ Annual Report CBSL

international partnership and cooperation is a priority for the country for effective investments in all aspects of SFDRR realizing those targets by 2030.

By investing in DRR, individuals, communities, and countries are able to reap a multitude of benefits by averting these negative consequences and their associated feedbacks. The Policy paper produced by the World Bank for 3rd World Conference for DRR describes three dividends for investing in DRR which is an important consideration to create disaster resilient nation;

The 1st dividend – avoiding direct impact. DRR investments – whether they are structural (e.g., green and gray infrastructure such as retention areas, dikes and dams) or non-structural measures (e.g., land use planning, early warning and building codes) - contribute to reducing the immediate impacts of disasters in terms of human and direct economic losses.

The 2nd dividend – enhancing economic potential. Perception of disaster risks are known to affect people and firms' economic decisions including savings and investment behaviors. Lacking appropriate safety nets, for example, low-income farmers may be reluctant to adopt higher yielding crop varieties.

The 3rd dividend – generating development co-benefits. DRR investments can be designed for multi-purpose uses – such as dams which provide flood mitigation, power generation, and water access benefits or cyclone shelters which can also be used as school and community buildings.

Thus, this National Plan aims to promote risk sensitive investments in these areas with adequate regulatory framework and budgetary provisions during next 10 years in line with national development agenda and national policy for disaster management in the country.

4.1. Disaster Mitigation, Climate Change Adaptation and Mainstreaming DRR into Development

DRR and climate change adaptation are critical in achieving sustainable development. Disaster risk reduction includes all efforts that can reduce disaster risks. These will be done by analyzing the root cause of disasters, reducing exposure to hazards and risks, and minimizing the vulnerability of people and their livelihoods. Climate change adaptation includes actions aimed at making adaptations by people and systems for unavoidable consequences of the global warming, changes to weather patterns and frequent extreme events.

Reducing the disaster risk through structural and non-structural mitigation and adaptation measures contributes significantly to build the resilience of the country and its people. Therefore, it is vital to integrated DRR and CCA into development planning and implementation which enabling the mainstreaming these important elements to the country-wide process for sustainable development.

4.1.1. The National Strategy for Disaster Risk Reduction Mainstreaming into Development

Mainstreaming DRR in development essentially means looking critically at each programme, activity and project that is being planned from the perspective of reducing risks and minimizing the potential contribution of development towards creating new risks. Mainstreaming thus has the dual purpose of ensuring that (1) development is protected from existing and future disaster risks and (2) development does not create any new risks of disasters or exacerbates the existing risks.

The national disaster management Act provides (clause 10-E of the Act) the enabling environment to all ministries, departments, public corporations, local authorities or other public and private organizations to integrate disaster risk management for their institutions. Thus, the creation and implementation of such disaster management plan for every institution is mandatory and DMC will

provide necessary guidance for such development. A guideline on Institutional Disaster Management Plan is published by the DMC in 2021.

The strategic objective of mainstreaming is to ensure DRR within the ongoing development initiatives lead to integration of DRR into poverty reduction efforts and sustainable socio-economic development by covering all aspects – instructional, legislative, and judicial and development policies.

These broad themes need to be incorporated into the policies, plans and programs of government agencies at all levels as an integral part of their general plans, while their DM Plans will provide an outline or broad indication of how it will be implemented. All agencies must explore ways to incorporate mainstreaming DRR in their regular planning and formulation of programmes starting from understanding risk and ending with preparedness for response and recovery to face residual risk.

The national disaster management plan presents a strategy towards integrated risk reduction and mainstreaming DRR into development by considering following areas;

- Create national policy and regulatory framework for risk sensitive development
- Build a platform for integration of disaster risk reduction in development planning
- Create adequate procedures to ensure risk sensitivities are captured in all major level projects
- Risk reduction monitoring platform for every level in the country and all sub-national level agencies to report such activities to the DMC
- Bring adequate integration of disaster risk reduction and climate change adaptation for relevant sectoral plans
- Establishing risk transfer and social protection mechanism for effective recovery options and build back better approach

Possible areas for mainstreaming DRM in the Development Process are given in Annex H.

4.1.2. Disaster Mitigation Strategies for Risk Reduction

The primary strategy of disaster mitigation is based on mainstreaming DRR and climate change adaptation measures into development at national, provincial and local levels. For this purpose, necessary policies will be adopted and legally enforced in the respective sectors. Based on the strategies described in this section, various line departments/agencies undertaking new development will implement them as appropriate. For the various projects, a given line department / agency considers, a rationale will have to be selected, and criteria developed for prioritizing the projects considering the disaster risk developed based on the historical information and risk levels such as;

- Risks with high consequences, but low frequency, will be addressed initially with options of lower cost and higher impacts.
- Medium risks merit additional options related to new development.
- High risks require implementation of additional options related to reducing the losses within areas of existing development.

The basic intention in developing criteria is to take into account all the issues such as, social, technical, administrative, political, legal, economic and environmental nature (STAPLE).

As and when necessary responsible agencies will coordinate with DMC. DMC will implement Some of the mitigation measures, in collaboration with other line agencies, UN agencies INGOs, NGOs and CBOs, (Support Groups) particularly, activities related to livelihoods development and poverty reduction. Some of the important disaster mitigation strategies for risk reduction will be implemented in different ways;

- Implementing specific mitigation projects
- Retrofitting / strengthening of existing structures and relocating
- Mainstreaming DRR into development
- Mainstreaming DRR during Reconstruction after a disaster
- DRR by controlling the use of natural Resources
- Livelihood development and poverty reduction as a mitigation Measure.

4.1.3. Implementing Specific Mitigation Projects

There are large numbers of ignored human needs, which are not covered under specific stakeholders. To mainstream the vistas of splendors and prosperity its mandatory specific mitigation projects are identified by DMC to fulfil the public aspiration.

Based on risk assessments in a given geographical area, highest priority mitigation projects must be selected for implementation. Projects will be selected by respective sectorial and provincial /local agencies based on any of the risk control options, viz., avoidance of hazard impact, prevention of hazard occurrence, risk reduction and/or loss reduction/mitigation.

Medium and small-scale mitigation projects on all avenues will be identified by district, division, LA and GN administrations for implementation with their own funding or with external support. DMC will assist in such initiatives for the feasibility and funding support.

4.1.4. Retrofitting / Strengthening of existing structures for resilience

Retrofitting and strengthening existing structure are very much focus on the historically and culturally important structures. Disasters are localised events and have the ability to cause extensive loss and destruction to a community's cultural heritage. Cultural heritage management ('historic preservation') aspires to protect such places from environmental decay as well as natural disasters, with technical solutions the modus operandi of choice. Disaster managers have traditionally always regarded the protection of cultural heritage places as very low on their list of priorities. However, it requires to measures to protect tangible heritage from damage and destruction, while also safeguarding the cultural rights of the concerned populations, including their right to access their cultural heritage and to fully participate in and enjoy cultural life, rights which are essential for social cohesion, stability, livelihoods and resilience.

Each agency responsible for a given infrastructure facility will be required to investigate and assess whether the facility is vulnerable, i.e., may not be able to withstand forces of disasters that could affect the area (natural, technological or man-made) then the facility needs to be strengthened or relocated to a safe location.

These activities also would be reflected in the sectorial policies and plans. It is the responsibility of all agencies to prepare plans for implementing such activities and request funding. Various line departments/agencies after selecting priorities may seek the support of the DMC for obtaining funds through the treasury. Depending on the priority and importance, Donor Funding may be sought following the government rules and regulations.

4.1.5. Mainstreaming Disaster Risk Reduction into Urban Development

In the context of burgeoning urban risks of disasters due to the rapid and unplanned growth of cities and increasing exposure of people and their built environment to natural and human-made hazards, particularly in developing countries, the mainstreaming of DRR within development assumes importance for building up the resilience of cities.

Unsafe stocks of buildings in thickly congested areas are the biggest source of risks in urban cities. Historically, hordes of buildings have been constructed without conforming to any standards of safety or resistance to natural hazards, like earthquakes and storms. Archaic tenancy and land-ceiling legislation have not provided incentives for the regular maintenance and upkeep of many buildings.

In this scenario, the single-most important activity of DRR in most Sri Lanka cities is the preparation and enforcement of building codes, which can ensure that all new buildings are resistant to the common natural hazards of the area and that all existing buildings are retrofitted to conform to the same standards. The latter task is more daunting and may seem well beyond the capacity of most municipal authorities to achieve. Therefore, every local authority may develop its own strategy to regulate building activities to reduce the stock of unsafe buildings.

These strategies likely will include a range of measures, such as surveying buildings, identifying the vulnerable buildings, demolishing unsafe buildings, offering incentives for retrofitting of buildings and imposing penalties for non-conforming building practices.

The root causes of urban sprawl and unsafe construction practices have to be addressed in a holistic framework, which should include relaxing land-ceiling laws to release more land for housing markets, granting titles to slum dwellers to encourage investment in housing, developing satellite towns to decongest cities, providing adequate domestic essential services, providing subsidized housing for impoverished households and developing the capacity and accountability for enforcement of building codes.

4.1.6. Disaster Risk Reduction by Controlling the use of Natural Resources

A mechanism will be planned to impose additional stringent regulations against misuse of natural resources by individuals / agencies leading to triggering of different hazards / disasters in different areas, which is another aspect in mitigation. In this respect DMC will work with several agencies which are responsible for issuing licenses / permits for extraction of natural resources for various development purposes. These agencies include, CEA, GSMB, CC&CRMD, NARA, Gem and Jewellery Authority and other such agencies as identified.

In addition to the above agencies, at local level divisional secretariats / local authorities or representatives of those agencies would be involved in the licensing and implementation process. Apart from the regulations, shortcomings prevail in the implementation, such as overuse or over extraction deviating from the conditions in the license and conditions with respect to leaving of the site after the license period.

A mechanism will also be planned for strict monitoring of the present regulations, including penalties for non-adherence or corruption and keeping a large sum of money as retention or withholding money when issuing the licenses. Other activities will be empowering communities and citizens to ensure fulfilment of conditions laid down will be undertaken, wide public awareness campaigns on measures for controlling misuse of natural resources through paper advertisements, Radio & TV discussions/ video clips etc., training and awareness for the general public, their right for information and happenings around them.

There will be community based / led programmes in this regard. DMC will work with the CEA and other relevant regulatory agencies and if necessary, a sub-committee will be establishment for planning all above actions with periods fixed.

4.1.7. Livelihoods Development and Poverty Reduction as a Mitigation Measure

While it is clear that the poor are often the most affected in a disaster, it is too simplistic to assume that there is a direct and absolute correlation between poverty and vulnerability. Systematic integration of poverty reduction and disaster reduction programs is crucial to achieve the SDGs.

As a mitigation measure stabilizing, diversifying livelihood, and poverty reduction initiatives will be commenced at community levels through involving large-scale local community members, particularly the women in most vulnerable areas of the country. These initiatives will not only cover the disaster management activities, but also as a tool for linking disasters with livelihoods, environment and poverty reduction activities, that will also increase the community resilience to future disasters.

These activities will include micro financing, capacity building, strengthening communities and awareness raising activities. These initiatives will be in collaboration with DDMCUs, CBOs and NGOs active in different areas of the country. In addition, National Youth Services Council (NYSC) and Samurdhi officials will be involved in this activity at community level.

National DRR strategies were formulated with the complementation of National Livelihoods development and poverty reduction strategies

4.1.8. Disaster Mitigation Action Plan

Implementation of mitigation for disaster risk reduction is the responsibility of provincial councils, local authorities and all public and private sector institutions. Each department, institution, local authority (LA) and district/division/GN level administration must develop an action plan for disaster mitigation. The role of district/division/GN level administration is to coordinate mitigation activities with the line agencies under their mandated subject areas at the respective levels.

On the other hand, enforcement of LA's bylaws, Urban Development Authority regulations and Environment conservation regulations is the responsibility of relevant authorities for regulatory activities such as development controls in the respective areas by proper land-use planning to prevent haphazard development and environmental degradation. With the integration of disaster mitigation in the development controls, these development control agencies will be responsible for risk reduction and mitigation activities, adopting guidelines for planning and construction in disaster-prone areas, as explained in the following sections.

Disaster Management Committees at any given level will be the multi-stakeholder mechanism to develop and undertake a review, monitoring implementation and evaluation of such plans. In addition, the committees will review such plans and proposals and decide on priority projects considering the maximum benefits concerning the estimated cost and availability of fundings.

Local or donor funding may be used for such projects. In many cases, these agencies and surrounding local authorities and NGOs will be involved in the implementation under the guidance of the committees. Accordingly, action will be initiated on awareness-raising, artisan training and transfer of appropriate technology for mitigation at the community level. Technical institutions and universities, which are already involved in training, will be used as resource persons. Disaster Management Committee at respective levels will discuss and decide on a mechanism for developing implementation schedules, monitoring and evaluation method.

4.2. Reducing Vulnerabilities to industrial and technological hazards

Technological hazards originate from technological or industrial conditions, dangerous procedures, infrastructure failure or human activity. Chemical, biological, radiological and nuclear (CBRN) hazards are all types of technological hazards. They are commonly grouped together because they share lots of similarities, and many of the preparedness and response measures are the same or very similar.

Radiological / nuclear related hazards; industrial, chemical and traffic accidents; oil spills in sea and land; other technological hazards, animal attacks and health hazards will be taken into consideration. Accidents can occur in any industry in spite of the preventive measures taken by the management. Especially those industries dealing with chemicals, which are toxic, inflammable or have a high explosive potential are particularly vulnerable. In such instances, the human as well as economic losses may be very severe.

4.2.1. Industrial Accidents, Traffic Accidents, Animal Attack and Health Hazard

With the ongoing development industrial/ technological hazards, traffic accident, Animal attack and health hazards are also reporting frequently and therefore it is essential to ensure the reduction of existing risk and not to generate new risk. Therefore, mainstreaming DRR into industries, transport wildlife and health sectors are crucial.

Review regulations governing industrial accidents under the Ministry of Industries and Labour Department and take further precautionary action to minimize such accidents and to minimize accidents with large containers carrying various types of goods.

All industrial concentrations to establish institutional mechanisms for management of industrial accidents; Industries involved in production and transportation of inflammable, hazardous and toxic materials to have a mandatory responsibility for preparing on and off-site plans with simulation exercises undertaken in the adjoining communities.

Poison treatment centres with facilities for detoxification to be established in hospitals near industrial estates; Small-scale industries releasing toxic waste into surface water bodies to set up common effluent treatment facilities.

4.2.2. Radiological Accidents

Preparedness Plan by Atomic Energy Regulatory Council that would help 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 and reduce the likely stochastic health effects (e.g., cancer) as much as reasonably achievable.

4.2.3. Oil spill and maritime hazards

The sea around Sri Lanka is highly vulnerable to oil spills and maritime hazards as twenty-five percent of the world's oil transportation pass via Sri Lanka's Exclusive Economic Zone (Prakash TGSL et al, 2017). Sri Lanka has faced five oil spills and one ship fire during the last two decades. X-Press pearl maritime disaster that occurred in 2021 is the worst which impacted Sri Lanka's sensitive coastal environment, fishing community and country's economy. Therefore, it is important to have a plan to prevent/ mitigate such events and implement a Maritime Disaster Preparedness System with relevant stakeholders.

MEPA and SL Navy will have a surveillance system to identify any ships in the sea before entering the shores of the country. NARA undertakes research on oil spill dissipation, ecological damage, recovery rates etc. Ministries and agencies responsible for various types of technological hazards and accidents are illustrated in **Table 5**.

Table 5: Ministries / Agencies responsible for various types of technological hazards / accidents

Type of Incident	Responsible Ministries / Agencies
Radiological and nuclear accidents or disaster	Atomic Energy Regulatory Council

Chemical hazards / threats Industrial Hazards	Ministry of Industries, Labour Department, National Authority for Implementing Chemical Weapons Convention
Fire threats due to petroleum products / storage, pipelines, oil spills on land during transportation	Ministry of Petroleum and Petroleum Resources Development, Ceylon Petroleum Corporation
Road / Traffic Accidents, Ministry of Railways and Transport, National Transport Commission, Railways/ Plan crashes	Department, Dept. of Motor Traffic, Sri Lanka Air Force, Airport and Aviation Authority
Oil spills in sea	Marine Environment Protection Authority, SL Navy
Animal attacks	Department of Forests, Department of Wildlife Conservation, Wildlife Trust, Central Environment Authority (CEA), Respective Local Authorities / Divisional Secretariats in prone areas
Health hazards - epidemics, communicable diseases, bird flu, AIDS, SARS, Covid-19, poisoning etc., and possible biological hazards, other health hazards	Health Ministry, Epidemiology Unit, and Department of Health Services, Medical Research Institute and others as relevant
Contamination of water sources with pesticides, insecticides, fertilizer, chemicals etc. Adverse effects include diseases such as fluorosis, renal failure etc.	National Water Supply and Drainage Board, Water Resources Board, Ministry of Health, Health Services Department

4.3. Consideration of Existing Public Services in Areas of New Development

With the rapid development taking place at present there are instances when required essential services are insufficient, such as water supply, sewerage, solid waste collection, disposal, and especially, surface water drainage in city areas. Details with respect to different services are described in Annex J. These should be dealt with adequately after discussion with the relevant agencies such as the UDA, Sri Lanka Institute of Local Governance, Provincial Commissioners of Local Governance and other sectorial agencies as applicable.

The outcome will be service-providing agencies planning infrastructure in advance considering the development planned in given areas, as per the regional development plans of the UDA and NPPD for a specific future given period. The Planning Committee of the UDA to be made aware of this aspect for making the service providing agencies (members of the Planning Committee) aware of these in turn. Details of areas on new development based on the present context is given in Annex H.

4.4. Risk Transferring and Financing

The financing of disasters in Sri Lanka has mostly relied on a reactive approach, consisting of the diversion of funds from government budgets and extensive financing from international donors. Such approaches are inefficient, often poorly targeted, and insufficient. Moreover, they provide no incentives for proactive risk reduction measures such as improved urban planning, higher construction standards, following disaster resistant construction guidelines etc.

Reactive approaches to risk financing are becoming increasingly unsustainable due to a number of factors such as, increasing vulnerability, continued environmental degradation, population growth and growing disaster losses. The increase in hazard exposure and vulnerability points to a continuing trend of increasing losses due to natural disasters, but the capacity of donors to fund disaster relief and reconstruction is limited, resulting in funding gaps.

Insurance market in the country is underdeveloped, and coverage for natural disasters is extremely limited. Where hazard coverage exists, it is usually limited to major industrial and commercial properties, and some wealthier households. The demand for risk transfer instruments in emerging markets is often constrained by market gaps, lack of regulatory frameworks, lacking data on disaster risk, lack of a culture of risk financing, and the reluctance of large reinsurance market players to invest in the development of small risk markets.

With the increasing trends in disasters, the government experienced the continuing demand for higher budget for rehabilitation challenging. While enhancing investments in disaster risk reduction, the need for introducing risk-transferring mechanisms for housing, infrastructure and economic assets is noted. Two risk management instruments namely, climate insurance scheme and fiscal mechanisms for disaster risk financing have been considered. The Government has placed significant focus on promoting agricultural insurance as a tool to protect vulnerable farmers, enhance food security, and channel agricultural credit.

The Crop Insurance Board in Sri Lanka was established to operate a comprehensive crop insurance scheme for rice, other field crops, and livestock. The most recent crop insurance scheme was established in 2013. Farmers who receive subsidized fertilizer under the “Kethata Aruna Pohora Diriya” program are compulsorily covered by the crop insurance scheme to compensate for crop damages caused by droughts, flood, and wild elephant attacks. The government provides an interest rate subsidy approximately 7%–8% per annum to the banks for cultivation loans supplementing the crop insurance business¹⁹.

Index-Based insurance has been identified as a viable instrument for handling risk associated with hydro-meteorological disasters. SANASA Insurance Company Limited, which is a private sector insurance agency, has introduced a Crop Insurance scheme based on the weather index related to cultivation period and have agreed to pay out based on the weather index. Actual loss in the field is not taken into account in this scheme. This insurance scheme covers paddy, tea and banana crop. There is limited application of this scheme as the weather index could be calculated only for land within 10 km radius of the weather station.

The government had launched an insurance scheme covering all houses and SMEs against the natural disasters without considering the level of risk through the National Insurance Trust Fund (NITF). A Development Policy Loan (DPL) with a Catastrophe Deferred Draw-Down Option (or CAT DDO), with support from the World Bank was set up following the 2016 floods and landslides to reduce the fiscal burden of the government through disaster risk financing options.

There are gender-based issues in the access to financing and insurance. Ownership of land and other productive assets and the hold of bank accounts are less for women, which act as barriers in accessing credit and insurance through formal schemes. Asset ownership and access to resources is largely based on the notion of a male as the head of a household. The targeted poverty alleviation and free safety nets programs are implemented without gender or socioeconomic differentiation.

¹⁹ Asian Development Bank 2019

The social cost of the disasters includes loss of lives, injuries, and loss of assets. Over the last three decades the loss of lives and livelihoods due to hydro-meteorological disasters has become significant in the country due to more recurrent disasters such as floods, drought, cyclones, landslides etc.

4.5. Climate Change Adaptation (CCA)

Climate Change Adaptation (CCA) refers to Human-driven adjustments in ecological, social or economic systems or policy processes, in response to actual or expected climate stimuli and their effects or impacts. Various types of adaptation can be distinguished, including anticipatory and reactive adaptation, private and public adaptation, and autonomous and planned adaptation. (IPCC Fourth Assessment Report, AR4, 2007).

Adaptation can contribute to the well-being of current and future populations, the security of assets and the maintenance of ecosystem goods, functions and services now and in the future. Adaptation is place- and context-specific, with no single approach for reducing risks appropriate across all settings. Effective risk reduction and adaptation strategies consider vulnerability and exposure and their linkages with socio-economic processes, sustainable development, and climate change (IPCC Fifth Assessment Report, AR5, 2015).

Climate change may be due to natural processes or human activity (anthropogenic impacts). Global warming is predicted to bring about severe changes in frequency of rainfall patterns, drought conditions and high wind frequencies. According to IPCC, increases in temperature could lead to changes in the ocean and wind currents globally resulting in changes in traditional patterns of winds and precipitation. This has predicted to bring about increasing frequency and intensity of hydro meteorological hazards such as floods, droughts, cyclones, tornados and heat waves. Dryness resulting from drought could aggravate the threat of wildfires. Such changes are already taking place even at present.

According to climate scientists and meteorological researchers, extreme weather events are rare. Extreme weather includes unusual, severe or unseasonal weather in addition to the normal seasonal weather cycles. These are events at the extremes of the historical distribution that have been seen in the past. Extreme weather occurs only 5% or less of the time²⁰. However, man-made actions influencing climate change have been attributed to increase in extreme weather events.

In recent times unusual heat waves, cold waves, unprecedented rainfall leading to severe floods and landslides, tornado strikes, forceful cyclones, severe droughts and wildfire impacting diverse geographical regions could be seen.

Some potential impacts of climate change are, reduction in water regulation in mountain habitats; decreased availability of water and quality of water in many arid and semi-arid regions; adverse effects on many ecological systems; decreases in reliability of hydro power; decreased agricultural productivity; adverse impacts on fisheries; threats to food security; sea level rise and inundation of low lying coastal areas; salinity intrusion to coastal land making them agriculturally unproductive; and increased incidents of vector borne diseases such as malaria and dengue.

As such these can adversely impact many sectors including agriculture, fisheries, tourism, infrastructure and coastal development. With these occurrences, climate change has become an extremely important aspect to pay attention to. Possible actions include actions to combat climate change, enhanced actions on adaptation and actions on mitigation of climate change.

²⁰ <https://www.ipcc.ch/site/assets/uploads/2018/02/ar4-wg2-chapter17-1.pdf>,
<https://www.ipcc.ch/report/ar5/syr/>

4.5.1. Climate Change Adaptation (CCA) and Disaster Risk Reduction (DRR)

Climate change and disasters have integrally linked each other where climate change increases disaster risk in a number of ways. It changes the magnitude and frequency of extreme events. It changes average climatic conditions and climate variability, affecting underlying risk factors, and it generates new threats, which a region may have no experience in dealing with.

Climate change affects physical hazards and the coping capacity of communities to deal with disasters. It is important that national level efforts to adapt to climate change and reduce disaster risk are effectively harmonized. Thus, there is a need for policy makers, experts and practitioners of both DRR and CCA to complement each other²¹, communicating and collaborating with each other effectively to ensure a comprehensive risk management approach at national and sub-national levels. One major action would be to integrate climate change adaptation (CCA) in development planning along with DRR initiatives. Benefits of such close collaboration would include;

- Reduction of climate related losses through more widespread implementation of DRR measures linked with adaptation
- More efficient use of financial, human and natural resources
- Increased effectiveness and sustainability of both CC adaptation and DRR approaches.

In this context, all ministries and agencies working on CCA and DRR would participate in all activities as reflected in Overall Country-wide Disaster Risk Management Framework and National Institutional Framework for DRM.

4.5.2. Disaster Risk Management for food and water security

Climate change impacts and natural disasters are the leading cause of hunger and affect all dimensions of food security including access to food, availability and stability of supplies, and nutrition across the world and in Sri Lanka. The global food crisis is exposing existing and potential vulnerabilities of households, governments, and the international system to food and nutrition insecurity. Most food-insecure people live in areas prone to natural hazards, and they are the least able to cope with shocks.

Thus, focusing risk management on agriculture, irrigation, water management and agri-business, market chain and entire food system is critical as Sri Lanka is highly depending on agro-irrigated system for generations.

Thus, this plan put emphasis on system strengthening for aforementioned sectors together with various stakeholders including small-holder farmers for integrated food security measures through better water management, adaptive agriculture and effective system strengthening under broader risk sensitive planning.

4.5.3. National Adaptation Plan for Climate Change Impacts in Sri Lanka: 2016-2025

Climate change impacts are looming over every conceivable level; global, regional, national and local that calls for multi-level action. Sri Lanka, a tropical nation, is highly vulnerable to adverse impacts of climate change. National level actions have to play a critical role while international cooperation is also important. Recognizing this responsibility, the Government of Sri Lanka (GoSL) has launched a national initiative to face the impacts of climate change.

²¹ https://www.preventionweb.net/files/3007_CCAandDRRweb.pdf

The Climate Change Secretariat of the Ministry of Environment plays the leadership role in this activity which is the National Focal Point for the United Nations Framework Convention on Climate Change (UNFCCC), spearheads the process. Among the key national initiatives, the National Climate Change Adaptation Strategy for Sri Lanka 2011-2016 prepared in 2010 and the National Climate Change Policy (NCCP) adopted in 2012 are the two major achievements. The National Adaptation Plan for Climate Change Impacts in Sri Lanka (NAP 2016-2025) is the next logical step of the National initiatives for meeting the adverse effects of climate change adaptation.

The importance of adaptation as a major strategy for facing the threat of climate change has been recognized by all parties to Paris Agreement and called for national actions for adaptation under Intended Nationally Determined Contributions (INDCs). The necessity of adaptive strategies has also been highlighted by number of Sustainable Development Goals (SDGs) adopted by the United Nations in 2015.

CCS leads the country to take comprehensive action to contribute towards local, regional and global efforts in combating Climate Change and to integrate unavoidable Climate Change scenarios into National Sustainable Development Plans.

4.6. Collaboration of International Agencies and Development Partners in Mainstreaming DRR in Development

International cooperation is necessary for sustainable development. Mechanisms such as Official Development Assistance (ODA), international disaster response, as well as capacity building are essential to boost disaster resilience in the face of climate change, extreme weather events and other natural and man-made hazards worldwide.

Development co-operation plays an important role in supporting Sri Lanka in enhancing coherence in planning and implementation of disaster risk reduction (DRR) and climate change adaptation (CCA). The Sendai Framework for DRR specifically calls upon all international agencies to support its implementation in a coordinated manner. Providers of development co-operation here include, among others, bilateral and multilateral providers of development finance, donor agencies, inter-governmental organisations, non-governmental institutions and research institutes.

The national budgets play an important role in financing action to build climate and disaster resilience. However, being a middle-income country Sri Lanka rely on international support to complement domestic resources, for instance, to finance infrastructure investments and to pilot and capitalize risk finance mechanisms for DRR and CCA. Technical assistance will also support the national DRR agenda, putting in place enabling environments supportive of coherence in CCA and DRR, such as the formulation of policies, development of data and information systems, and for capacity development.

In 2015, countries adopted three interrelated global frameworks and agreements: 1. Sendai Framework for Disaster Reduction 2015–2030, 2. 2030 Agenda for Sustainable Development (including the Sustainable Development Goals), 3. Paris Agreement under the United Nations Framework Convention on Climate Change (UNFCCC). These frameworks and agreements emphasize mainstreaming DRR and building resilience across the development sectors. The Sendai Framework is direct and forthright in its reference, while it is embedded in at least eight of the 17 SDGs. The Paris Agreement, a legally binding instrument on 196 countries that signed it, incorporates the cardinal elements of DRR in a separate article that reinforces the obligations under the Sendai Framework and the SDGs.

United Nations Sustainable Development Cooperation Framework (UNSDCF) is a key framework for international cooperation through UN agencies and development partners, which facilitates the enabling environment for other development partners and humanitarian agencies working in the country. In addition, Common Country Assessments also another avenue to consider DRR & climate change

adaptation measure into consideration to inform agency-wise strategic plans to support government efforts.

The COVID-19 pandemic has thrown open a new challenge to the global society – to improve understanding of the dynamic and systemic nature of risks and to strengthen and overhaul risk management approaches accordingly. Crucially, the pandemic has created an opportunity for a fundamental shift in international development cooperation towards a more risk-informed sustainable development pathway. Official development assistance (ODA) will be pivotal in driving risk-informed sustainable development pathways and building resilience, especially in Sri Lanka. The National Disaster Management Policy of the Government has created the enabling environment for effective international corporation towards a safer country by achieving international sustainable goals under the national vision. This further complemented by the Public Investment Programme (PIP 2021-2024) of the GoSL and the foreign cooperation policy of the government.

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5. Enhancing Disaster Preparedness for Effective Response and to "Build Back Better" in Recovery, Rehabilitation and Reconstruction

5.1. Disaster Preparedness Planning for Effective Response

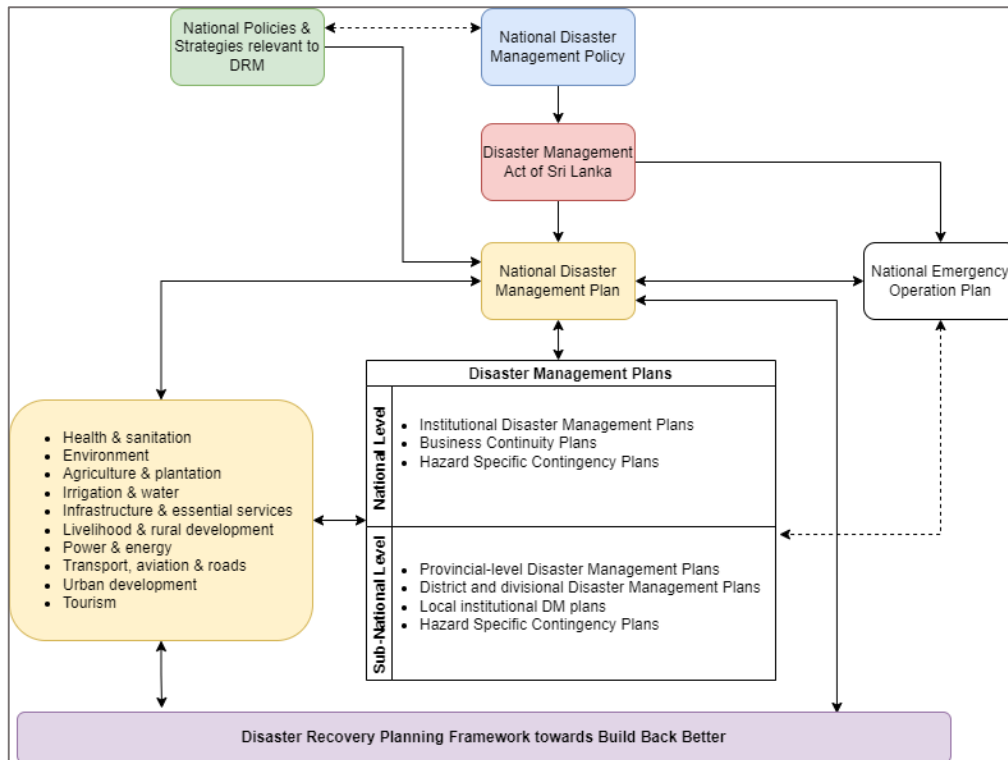
The concept of preparedness refers to the knowledge and skills developed by a government, the private sector and communities that allow them to anticipate, respond to and recover from a disaster. It encompasses not only everything that is done to prepare for disasters before they happen, but also the actions taken to mount an effective response that will pave the way for an organized transition from response to recovery.

Disaster management planning is to be done at all levels in respond to various disasters that occur in Sri Lanka. Development of Disaster Management plans is a requirement as per the Sri Lanka Disaster Management Act and the National Disaster Management policy. While the DMC is the overall coordinating authority, the development of disaster management plans are done by the District Disaster Management Coordinating Units (DDMCUs) which focuses at District, Division, Local Authority and Grama Niladhari levels in managing disseminating critical information and coordinate response and recovery efforts as well.

As stated in the Chapter 1, the Act provides the setting to devise disaster management plans for all agencies at all levels. These plans need to include the segment on disaster preparedness and recovery planning section in line with the NDMP. An Institutional Disaster Management Plan (IDMP) guideline was developed and published by the DMC for this purpose to drive the analysing risks, consultations and development of such plans for each institution in the country. Guideline on the preparation of DM plans for government institutions is given in **Annex L**.

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Figure 7: Disaster Preparedness Planning Framework



5.1.1. Preparation of Disaster Preparedness Plans in Different National and Provincial Ministries /Departments /Institutes /Agencies

As per the section 10 of the DM Act of Sri Lanka, every Ministry, Department, Cooperation needs to prepare their own disaster management plan in conformity with NDMP. Section 8 of the DM Act has entrusted the responsibility of DMC on providing guidelines for the preparation of DM plans and facilitation for the execution. Guideline on the preparation of DM plans is given in Annex L.

DMC will coordinate and monitor adherence and progress. In addition, representatives from National, Provincial and District level offices of service providing agencies will be serving in the disaster management committees at the respective levels. These agencies, in addition to their DM Plans for their respective agencies, will have a role in the DM Plan at the given administrative level and will have Standard Operating Procedures (SOPs) detailing out activities to assist National, District, and Divisional level administrations in an emergency situation after a disaster.

Institution based DM plans need to address followings to ensure not to create new risk and to reduce existing risk by appropriately applying necessary steps covering all phase of DM cycle.;

- Understand the disaster risk of prevailing hazards as well as impending hazards with respective the institution
- Established mechanisms to incorporate DRR into the governance of the institution
- Established mechanism to accomplished all mandated responsibilities in a risk sensitive manner without interruption (Business continuity)
- Protection of human resources and all asserts by introducing early warning, risk communication, risk transferring etc.
- Emergency plans for evacuation in case of early warning and responding on occurrence of disasters

DMC is mandated to specify time frames for developing DM plans of different ministries, departments / agencies and private sector in the entire country, giving due consideration to the aspects such as;

- Vulnerabilities of the areas to different natural and man-made hazards;
- Vulnerable Population density of the areas;
- Areas with and of high-rise buildings,
- Buildings and residential buildings without adequate fire gaps & proper drainage system;
- Risk profile / specific nature of the installation (explosives, hazardous materials, chemicals, such storage places etc.).

5.1.2. Preparation of Disaster Management Plans at Sub-national Levels

As per the Act it is mandatory for the following administrative levels to develop DM Plans for responding on receiving or declaration of warning or on occurrence of a disaster: - Provincial councils, Districts, Divisions, Local Authorities, Grama Niladhari Divisions and Community level plans (through community participation facilitated by DMC). The Disaster Management (DM) Committees at different sub-national levels will monitor and coordinate the implementation of these plans.

Plans are to be developed conforming to the Generic Formats and the Guidance Note developed by the DMC for Plans at respective levels. These have been made available in Sinhala, Tamil and English for use in different areas of the country as appropriate. All levels of plans generally will be either in Sinhala or/and Tamil.

District DM Coordinating Units (DDMCUs) will be responsible for coordination of plan preparation at sub-national levels along with the District Secretary or Divisional Secretary as relevant. These plans will have provision for all sub national level administrations to coordinate with each other, namely, Provincial Councils, LAs, Districts, Divisions and GN divisions.

With due consideration to funding availability DMC is implementing a programme with the time frames for developing plans at different administrative levels. In stages DMC will cover all administrative levels of the entire country. In developing the plans due consideration must be given to aspects such as,

- Proneness of the areas to different natural and man-made hazards;
- Population density of the areas; and
- Areas with high-rise buildings
- Buildings and residential buildings without adequate fire gaps

These DM Plans must be updated five yearly; reviewed after a major disaster and / or revised after a predetermined time period.

5.1.2.1. Involvement of UN agencies, NGOs, INGOs in Preparation of DM Plans at Sub-national Levels

There are many humanitarian, volunteer and civil society agencies are working in Sri Lanka to support disaster management planning at sub-national level. UN agencies, Sri Lanka Red Cross (SLRCS) and other Non-Governmental Organizations (NGO) can be involved for developing district, divisional, local authority and Grama Niladhari level plans in different areas where they are actively involved in DM related activities. NGO / INGO participation would be very helpful in developing plans at community levels. In such collaborations the following have to be ensured:

- Plans are prepared in conformity with the formats and guidelines developed by the DMC
- Officials of the respective levels of administration, representatives of all stakeholder agencies are involved in the process of developing the plans as described above
- Final plan is presented at a meeting / workshop where the concurrence of the respective disaster management committee is obtained for the plan

5.1.3. Community Based Disaster Risk Management (CBDRM)

Aftermath of the Tsunami disaster, many agencies has paid attention for the community readiness to cope with disaster event as their capacities are not to the level of risk knowledge and response options. This enabled DMC to aware communities, create community-based mechanism and organize communities to prepare and respond to disasters.

DMC will promote Community Based Disaster Management to,

- Promote communities to form disaster management committees for DRM in all vulnerable locations in the country in a phased manner and a system of registration of such committees with divisional secretariats
- Develop a plan for undertaking CBDRM activities covering all phases of the DRM cycle, namely, pre-disaster; during early warning and emergency; evacuation; and post-disaster relief, rehabilitation and reconstruction
- All the above activities consider older people, children, disabled people, gender/ women, especially in evacuation. Encourage civil society organizations, CBOs, NGOs and INGOs to consider this aspect in their activities.
- Develop a database of community volunteer groups to be maintained at divisional / LA levels
- Establish a sustainable system to maintain volunteers' skills through regular training and motivation

The Plan encourages the communities to develop Community Based Disaster Management Plans for vulnerable villages, facilitated by the District DMCUs with the support of Divisional Secretaries in conformity with the NDMP. These plans also emphasize activities related to older people, children, disabled people, gender/ women, especially evacuation. DMC will support by providing guidelines and encouraging SLRCS and NGOs to undertake the implementation of identified activities. NGO coordination will be formalized to prevent duplication of some activities in the same area and ensure equitable distribution of their services.

5.1.4. Involvement of SAR Teams of the Armed Forces and Police for Disaster Response Activities

Seven Military command areas of Sri Lanka are in total readiness to assist promptly to civil authorities in any disaster situation. Army, Navy and Air Forces are also prepared and ready for specialized SAR activities connected with their specializations and area authorities.

Armed forces and Police have appointed / earmarked disaster SAR teams to come to the assistance of the District/ Division during the times of disasters. These SAR teams have been trained and equipped to carry out SAR activities at district, division and village levels in coordination with District DM Coordinating Units (DDMCUs), the district secretariats and local authorities. During post disaster event Armed forces & Police may assist the district administration along with the DDMCUs in all-response and immediate relief activities.

Civil Military cooperation (CIMIC) and Military Aid to Civil authorities (MACA) operations will be coordinated by OCDS together with three force commanders and IGP. Emergency Operation Centre of the DMC consists with Tri forces and Police teams work in 24 x 7 with their own communication mechanisms to coordinate all the search and rescue operations in a disaster situation with overall coordination under the Duty officer of the EOC. These communication mechanism need to be upgraded with more communication technologies under a modern technology with a digital platform by the Emergency Operation Centre.

5.1.5. Private Sector Preparedness

Private sector agencies while having plans as explained above will be encouraged to organize themselves in to associations funded by themselves for responding to disasters and for rapid recovery after a disaster. The Goal of such a body basically would be, "to provide a forum for sharing resources and information exchange to enhance emergency preparedness and contingency planning within the business community". Such organizations in the form of Traders' Associations, National Construction Association of Sri Lanka, etc., are presently in existence in townships, urban areas, in districts, provinces and at national level.

Such organizations particularly at urban or township level should be encouraged to reorganize themselves and/or to form new associations with this particular goal. At the same time DMC need to coordinate with them to share resources available with them for post disaster response and need to capture private sector available resources into the Sri Lanka Disaster Resource Network (SLDRN).

There are agencies such as Chamber of Commerce and A-PAD coordinates and supports the private sector preparedness and involvement in the disaster management in the country.

5.1.6. Volunteerism in Disaster Management

Volunteers augment the community's response capability by performing roles that require less technical training, allowing professionals to focus on the more highly specialized roles. This means volunteers may respond in multiple venues and hold varied roles throughout a single response. It is about people's need to participate in their societies and to feel that they matter to others. It is infused with values including solidarity, reciprocity, mutual trust, belonging and empowerment, all of which contribute significantly to the well-being of individuals, their communities and societies.

Volunteerism also forms the backbone of many national and international non-governmental organizations (NGOs) and other civil society organizations as well as social and political movements. It is present in the public sector and is increasingly a feature of the private sector. Volunteerism in general, as well as mobilizing and managing volunteers in particular, are critical components of any disaster risk management strategy aimed at building community recovery, strength, and resilience in Sri Lanka's most vulnerable areas.

This plan encourage to promote volunteerism for disaster management actions as indicated in SFDRR, in community awareness, warning dissemination, participatory approaches, and implementation of relief management and responses. Further, it is critical that the recognition of volunteers and visibility for them to keep them engaged and sustain in the mechanism, where all government agencies are encouraged to have such networks at various level. Volunteer based agencies such as Red Cross, Sarvodaya, St. John Ambulance, could work with sub-national agencies for further engagement and coordination.

5.1.7. Standard Operating Procedure (SOP)

Standard operation procedures are the set of written instructions which describes activities of a process or procedure that helps to perform the operations smoothly. Further SOPs are paramount importance to ensure efficient, error-free, and homogenised disaster management operations.

All agencies will develop agency specific Standing operation Procedures (SOPs) that will include checklists / standing orders for action to be taken by the agencies in preparedness, on receiving early warning, emergency response, recovery, rehabilitation and reconstruction. These will form part of the respective departmental plans. These will also include checklists / standing orders for overall monitoring of precautionary measures of the sub-units of the agency by head office, checklists for sub-units for checking of detailed components.

Standing Orders (SOs) for specific DM tasks and various government departments / agencies will be finalized for adoption, with approval of the NCDM and the Cabinet / Parliament as appropriate.

5.2. Hazard Monitoring, Forecasting, Warning and Dissemination

An integrated system of hazard monitoring, forecasting and prediction, disaster risk assessment, communication and preparedness activities systems and processes that enables individuals, communities, stakeholder and others to take timely action to reduce disaster risks in advance of hazardous events.

Hazard forecasts mainly depend on the technological capabilities, Expert knowledge and software with modeling facilities which can include information on arrival time, location and potential magnitude of the hazardous events. Accuracy of the predictions and lead time depend on multiple factors. Impact based early warning dissemination system is key to save lives and to reduce property damages. The primary perceived benefit of Impact based early warning dissemination system is to increase the public's understanding of the impending hazard and associated impacts. Impact based early warning dissemination system research has focused on assessing public response and perceptions to warning messages containing impact information as "impact-oriented warnings".

Early warning dissemination is the utmost important process to save lives in all vulnerable areas. Impact based warning and forecast system need to be implemented by the all technical agencies with the overall coordination with the Disaster Management Centre.

5.2.1. Technical Committee for Tsunami Early Warning

As per the SLDM Act, with respect to multiple hazards, the various mandated technical agencies will be responsible for forecasting and issuing early warning messages on the respective hazards to the DMC.

Technical Committee for Tsunami Early Warning comprising relevant professional agencies and experts (**Table 7**) has been appointed by the Ministry in charge of Disaster Management chaired by the Ministry Secretary, and Standard Operating Procedures (SOPs) will be developed by this committee for Tsunami Early Warning. This committee will be responsible for Disaster EW/evacuation orders.

Table 6: Members of the Technical Advisory Committee on Tsunami Early Warning

Representing	Designation
Ministry of Disaster Management	Secretary
Disaster Management Centre	Director General
Meteorological Department	Director General
Geological Survey and Mines Bureau	Director
National Aquatic Resources Research and Development Agency	Director General
Dept. of Civil Eng., University of Moratuwa	Representative
Sri Lanka Navy	Specialist Hydrography

5.2.2. Mechanism for Coordination with Relevant Early Warning Agencies – International, Regional and National

Effective "end-to-end" and "people-centred" early warning systems include four interrelated key elements, such as disaster risk knowledge based on the systematic collection of data and disaster risk

assessments; detection, monitoring, analysis and forecasting of the hazards and possible consequences; dissemination and communication, by the DMC, and timely, accurate and actionable warnings and associated information on likelihood and impact; and preparedness at all levels to respond to the warnings received. These four interrelated components need to be coordinated by the DMC and Technical agencies within and across sectors and multiple levels for the system to work effectively and to include a feedback mechanism for continuous improvement.

DMC will be the main focal point responsible for dissemination of early warning up to last mile, along with the relevant technical agencies and Technical Advisory Committees, its dissemination and for ensuring last mile dissemination of same and also for issuing the evacuation order. The Emergency Operations Centre of the DMC will be in constant coordination with all technical agencies which are responsible for natural, technological and man-made hazards and in instances of any imminent disaster and to disseminate to the responsible officers for onward communication to the last mile.

Priority will be given for those disasters, such as riverine floods, landslides, flash floods, tropical cyclones, storm/sea surges etc. At the same time for rarer but very destructive hazards such as tsunami, monitoring systems are placed at EOC. Methods of obtaining information about impending disaster events and issuing early warnings would vary from one hazard to another due to different characteristics of different hazards. With respect to local hazards such as floods and landslides, local systems already available will be strengthened.

For other hazards such as earthquakes, tsunamis, adverse weather conditions and cyclones the relevant agencies will work in constant coordination with the respective regional and international warning centers. For nuclear hazards Atomic Energy Authority (AEA) will work in coordination with the relevant countries, and regional and international warning centres.

DMC is responsible on

- Establish coordination with the local technical agencies responsible for forecasting different hazards, who will be in constant communication with regional and international early warning agencies to receive early warning of the respective hazards
- EOC of the DMC strengthening the dissemination capacity in Early warning for all vulnerable communities working out a strategy and early warning Policy mechanism.
- Strengthen and upgrade the existing Early warning system with Media, Military, Police and other relevant stakeholders through a modern and reliable communication systems to ensure the early warning information dissemination up to the last mile.
- Initiating awareness on activities related to early warning among the various agencies and public
- Guiding DDMCUs in coordinating and implementing warning dissemination related activities in the Province, district, LA, division, Grama Niladhari and community levels.

5.2.3. Technical Institutions Responsible for Forecasting and Issuing Warning Alerts for Different Hazards; and their Roles and Responsibilities

At present in Sri Lanka, there are several agencies to handle issues related to different hazards / disasters mentioned above. For most of the disasters, there is a government institution legally mandated to monitor the disasters which fall within their expertise. The technical institutions that will be responsible for forecasting and issuing warning alerts for different hazards and EOC will disseminate the EW Messages to relevant technical agencies/service providers such as fisheries, Transport, Aviation, Ports and other stakeholders.

5.2.4. Standard Disaster Early Warning Messages and Bulletins

The procedure adopted in this regard is as follows:

- Standard disaster early warning messages and bulletins are being developed by the Mandated Technical Agency on the impending threat indicating the nature of the disaster and the warning level. EOC will analyse the technical messages from various technical agencies and warnings will be disseminated.
- These should reflect the magnitude of the event, the geographical areas likely to be affected, the level of alert and the clear message as to how the community members are expected to act on receiving the message. While these could be verbal messages, they should be free of technical jargon for the community to understand same easily. Communities will be made aware of the exact meaning of the messages and how to act on receiving such messages. Message content could be verbal, SMS, CB, HF/VHF, Fax and other formats to be delivered.
- With these clearly identified the tools for last mile dissemination could be decided upon, cell broadcasting, SMS messages and EW Towers and other EW methods available in EOC.

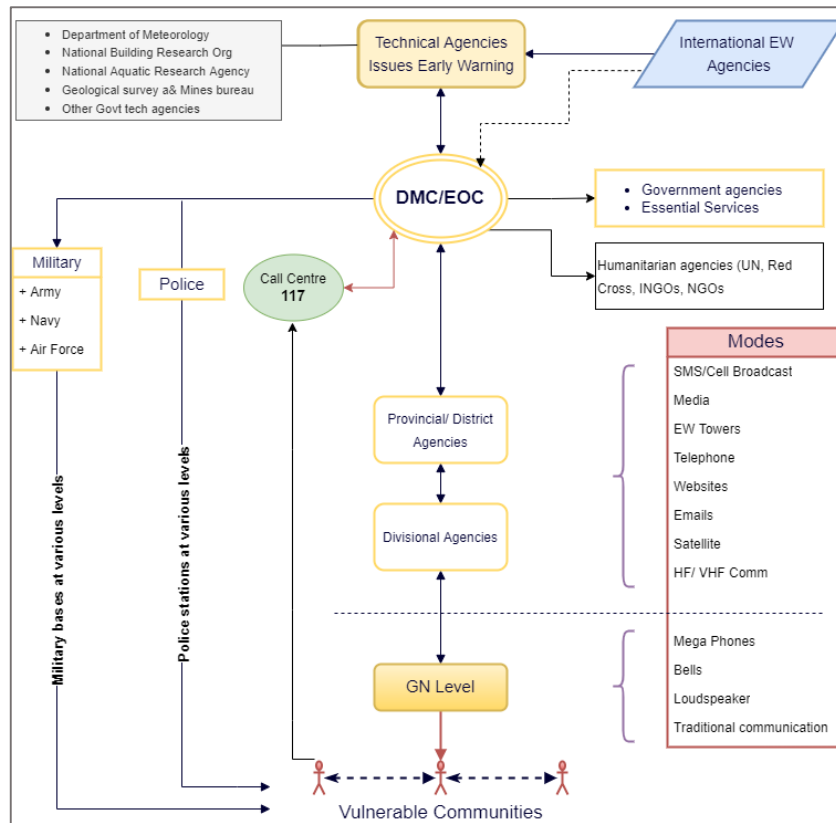
5.2.5. Communication Systems for Early Warning Dissemination

The present system of communication from national level to district / divisional / local authority / Grama Niladhari levels or other specific identified locations is mainly through the Tri-forces and Police communication systems, radio communication, multi-hazard early warning towers, media/social media, telephone systems and mobile communication service providers and other methods.

Alternative countrywide communication systems such as alarms , sirens, mega phones , loudspeakers, traditional modes of communication (e.g. beating of drums, ringing of bells at religious places, hoisting of flags), Public announcements through radio, television etc. will be revamped and with these improvements, DMC will ensure that there will be a practical mechanism to inform the vulnerable communities immediately.

Personnel and agencies such as LA officials, GNs, Local Police, Military, CBOs, SLRC, NGOs and Volunteers will be involved in the dissemination activities. The effectiveness of the methods will be different in different locations depending on the location specific characteristics. The Grama Niladhari level Early Warning Committee and CBOs must develop the method that will be adopted and obtain the concurrence of the Divisional / District Secretary. **Figure 9** illustrates the Planned System of Dissemination of EW messages to the Communities.

Figure 9: System of Dissemination of EW Messages to the Communities



5.2.6. Role of Telecommunication Regulatory Commission, telecommunication service providers and media

Telecommunication Regulatory Commission (TRC) is responsible for continuation of the service through service providers via various mode of available communication who are operating in the country. In addition, TRC has to regulate to make available dedicated prioritized communication systems for emergencies at any given time directing various service provides in the country. The service providers are responsible to use available technology for the effective and redundant communications for reliability of the networks at all the time.

All electronic/printed media, online web facilitators are to prioritize warning messages issued by the DMC and broadcast to their end-users. Media service providers should coordinate with DMC to ensure the timely reception of all warnings in 24 x 7. TRC facilitates to monitor the technical support. Media officer/spokesperson at the EOC should coordinate all electronic media and other media service providers upon dissemination of the EW messages to all media channels in 24 x 7.

All electronic/printed media, online web facilitators are to prioritize warning messages issued by the DMC and broadcast to their end-users.

5.3. Emergency Operations

5.3.1. National Emergency Operation Plan (NEOP)

Emergency operations are based on the NEOP that establish the emergency operations mechanism which organizes the state's response to emergencies and disasters while providing the safety and welfare of its citizens. It sets forth lines of authority, responsibilities and organizational relationships, and shows how all actions will be coordinated among the actors involved in the emergency operation.

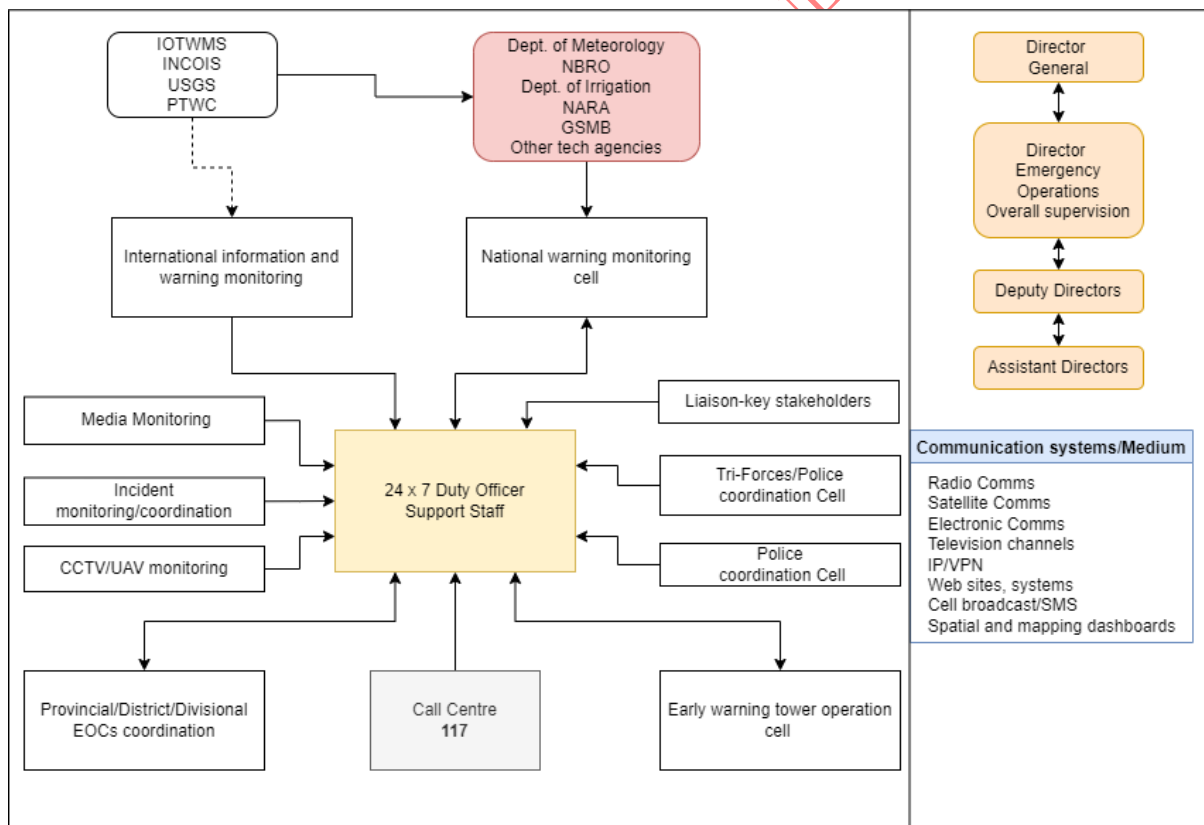
5.3.2. Maintaining Emergency Operation Centre (EOC) Readiness

Emergency Operations Centre (EOC) of DMC is an important element to ensure an effective and coordinated response in any emergency. The EOC is well equipped, adequately staffed and will operate 24x7 to coordinate all incident information and resources for management. It will receive, analyze, and display information about the incident to enable decision-making.

EOC linked with all technical agencies in 24 x 7 basis to receive technical information and warnings. Call center of the DMC is opened for the public information which can accommodate through tri languages of the public information. Early warning system established in EOC to disseminate the warnings up to the last mile in coordination with the DDMCUs in 25 districts. Teams of the Tri forces and police with their own communication systems are established in the EOC to facilitate early warning and emergency response.

At an emergency situation, relevant stake holders with their technical experts take part to the EOC functions. Upstream and downstream early warning system is in place with different types of warning methods linked with all other warning centers in Sri Lanka. The structure of the National EOC is schematically illustrated in Figure 11.

Figure 11: Structure of the National EOC



As and when required the EOC will be manned by representatives of relevant stakeholders coordinated by the DMC. This EOC will be linked to the relevant government institutions Provinces, Districts and DS Divisions with reliable communication systems to inform warnings and other vital information. In addition, it will be linked to other major stakeholder agencies and media. It has an emergency number (117), free for the caller from any local telephone, which any citizen can call round the clock for disaster related assistance including medical assistance.

5.3.3. Emergency Operations Centers at District and Divisional Levels

District Disaster Management Coordinating units are established in order to maintain all emergency response activities, early warning, preparedness and other disaster related activities in respective districts. These units are directly linked with the district administrative system which can coordinate all stake holders in respective districts.

EOC are established at District and Divisional levels as an extension of National EOC and ready to be activated in case of an emergency at sub-national level. These D-EOCs need to maintain all the necessary information such as; contact information of important stakeholders of emergency response to all resources including equipment, teams of skilled personnel and critical supplies etc. required for responding to a disaster. The EOCs will be generally functioning, or activated on issue of early warning or on occurrence of a disaster and the modality of their functioning.

5.3.4. First Responders Teams for Man-Made Disasters

A Response Teams from Sri Lanka Army, Navy, Air force and Police, Fire Brigade, Health, and Atomic Energy Authority, at national level have been trained and equipped for effective response in case of an emergency, such as an oil spill, hazardous material accident, and chemical and industrial accidents, radiological emergencies, disposal of lethal, toxic and adverse chemicals etc. in collaboration with the respective mandated agencies. **Table 9** summarized the Ministries / agencies mandated for various types of technological hazards/accidents.

5.3.5. Search & Rescue teams at National and District levels

Search & Rescue teams have been established at National and District levels and trained to ensure prompt response operations to save lives in case of an emergency. Officials from Tri Forces, police and Civil Defence serve as Search and Rescue team members.

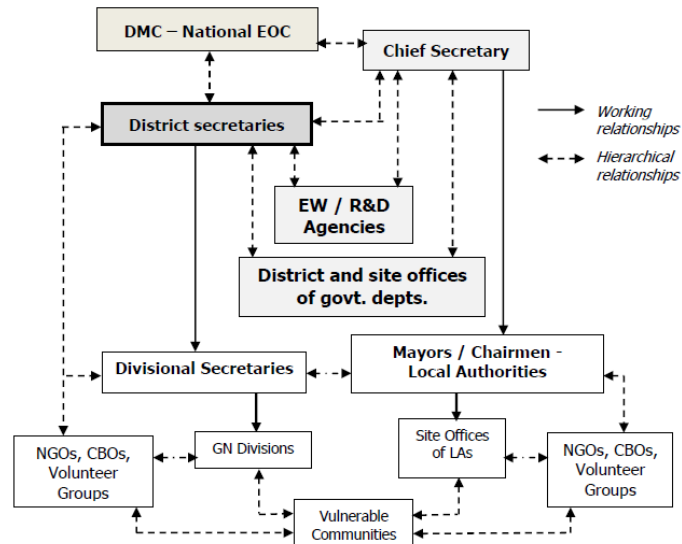
5.3.6. Coordination of Disaster / Emergency Response at different Levels

Disaster/Emergency Response at National, District, Divisional, Local, Grama Niladhari and Community Levels will be activated through disaster management committees, sub-committees, district offices of government departments, volunteer groups etc., which will be described in the respective disaster management Plans. Emergency Response Committee at the national level will convene upon identifying a major disaster or emergency event coordinated by the DMC. The emergency operations coordination structure and flow of information at the district level are shown in the Figure 12. Tri-forces and Police will take a lead role in emergency response activities at all these levels in any part of the country.

5.3.7. Incorporation of Incident Command System (ICS) into Emergency Operations at different Levels

Incident Command System (ICS) is a standardized emergency management tool designed that allows quick response to emergency situations. It is a system for organizing the functions of a team, so that every aspect of response to an incident is addressed. It enables a team to communicate, cooperate and implement a response activity. The Plan envisioning the system to be adopted to the management of Emergency Operation Centers at National and Sub-national levels with appropriate institutions managing the emergency operation.

Figure 12: Provincial and District Emergency Operations Coordination Structure and Flow of Information



ICS enables the following five major functional areas for managing an incident:

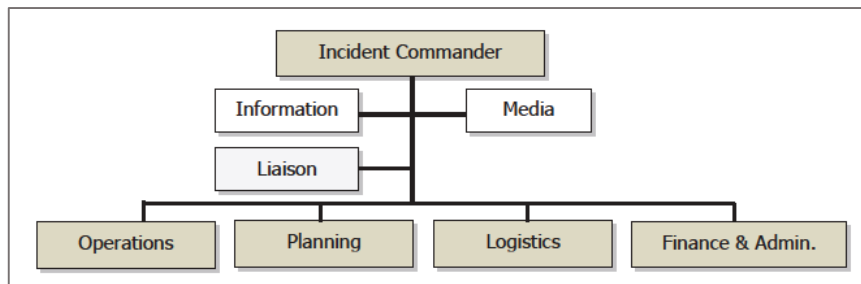
Overall Organizational Functions ICS was designed by identifying the primary activities or functions necessary to effectively respond to incidents. Analyses of incident reports and review of military organizations were all used in ICS development. These analyses identified the primary needs of incidents. As incidents became more complex, difficult, and expensive, the need for an organizational manager became more evident.

- ICS, and especially in larger incidents, the Incident Commander manages the organization and not the incident. In addition to the Command function, other desired functions and activities were to:
- Delegate authority and provide a separate organizational level within the ICS structure with sole responsibility for the tactical direction and control of resources.
- Provide logistical support to the incident organization.
- Provide planning services for both current and future activities.
- Provide cost assessment, time recording, and procurement control necessary to support the incident and the managing of claims.
- Promptly and effectively interact with the media, and provide informational services for the incident, involved agencies, and the public.
- Provide a safe operating environment within all parts of the incident organization.
- Ensure that assisting and cooperating agencies' needs are met, and to see that they are used in an effective manner.

It is designed in such a manner that each functional area is led by a team leader and the entire ICS is led by an Incident Commander as shown in Figure. 13.

At different levels of administrations, the Incident Commander will be the head of the respective administrations. The presently functioning district disaster management committees and emergency operations units under the chairmanship of the District Secretaries, the support of emergency response personnel trained on ICS will be obtained.

Figure 13: Major Functional Areas of the Incident Command System



ICS has been incorporated or will be incorporated into emergency operations at different levels adjusted to the local context.

Some arrangements are being made during 2007-2009 period to incorporate ICS to response planning and management and a national trainer pool also was established. However, with the oncoing challenges it was not succeeded and the DMC is planning to develop better approach to incorporate ICS to the management of EOCs at various levels by establishing new trainer pool and also implementing multi-year programem with the support of partners such as WFP, USAID, USFS etc.

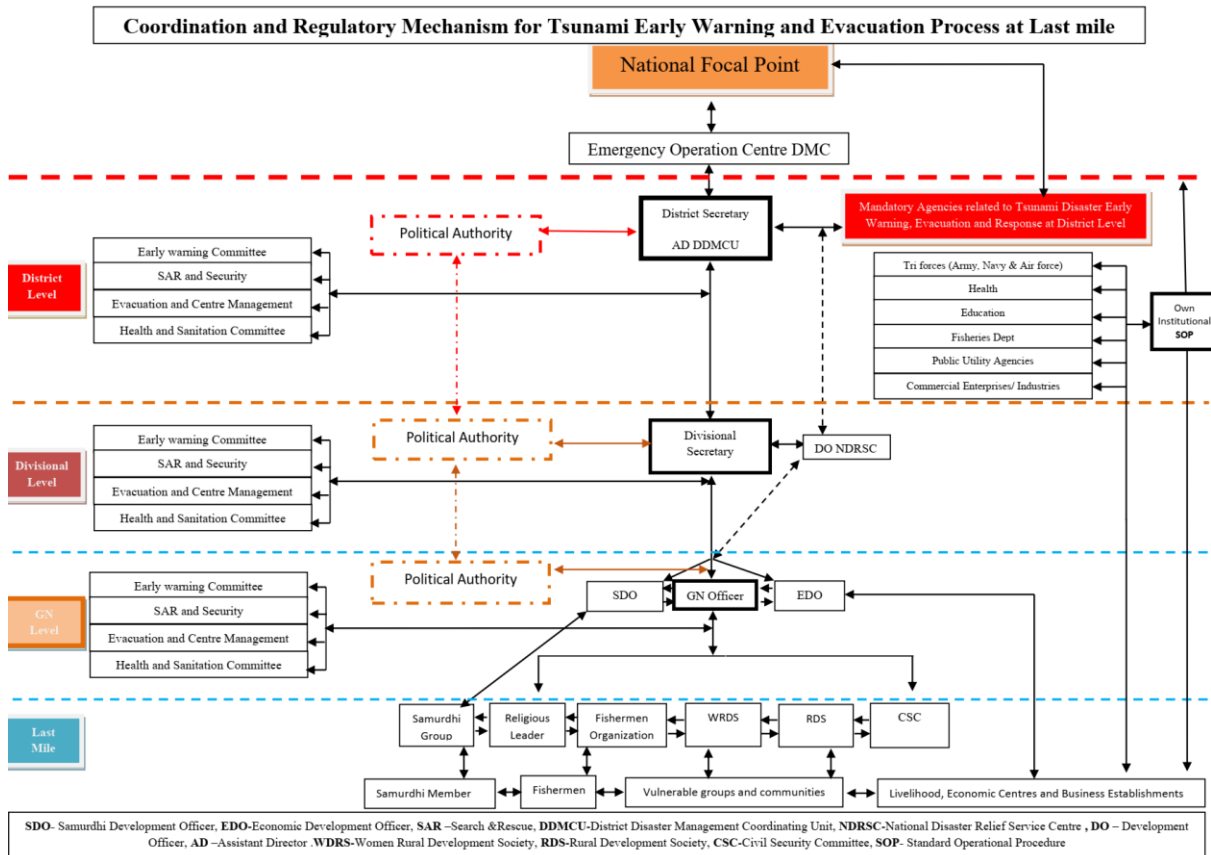
5.3.8. Strengthening of Emergency Response Systems

DMC being the sole authority of strengthening emergency response systems in the Island in collaboration with respective government authorities, Non-government organizations In this context steps have been taken to upgrade emergency response and early warning. Expansion of SAR activities in line with global standards initiated.

There will be specific and implied responsibility vested upon them in DM Plans as illustrated in Figure 14. For effective response during a disaster, all responsible groups will have to coordinate and work together, for which preparedness for response is required. In the preparedness for response, the responsibilities of above stakeholders must be spelled out as per their expertise. Disaster response protocol at national level is as shown in Annex N. These protocols highlight the engagement of trained ICS teams/ personnel fit in to the response structure.

Mode of response to disaster related incidents will depend on the severity of the event. If it is a local event then the District EOC under DDMCU will coordinate and respond. If the magnitude is larger and cannot be responded by the District EOC, then support from national level is requested. If the national level intervention is required to manage the situation, then the national EOC will take over and coordinate with outside resources as necessary. On receiving early warning or on occurrence of a disaster, responsibilities and actions of different stakeholders have been summarized as a matrix in Annex O. Strengthening response capacity for different types of emergencies should include effective coordination among government and non-government stakeholders.

Figure 14: Emergency Response Coordination Mechanism



5.3.9. Emergency Response by Local Authorities

To minimize response time to local emergencies that can be address in locally such as fires, accidents and etc., the local authorities should develop their response capabilities for which they need to be strengthened with relevant equipment such as earth moving equipment, boats, fire vehicles, ambulances etc. and other resources. They should also have the capacity / skilled operators to respond immediately.

5.3.10. Response to Other Specific Types of Emergencies

In case of other disasters due to activities such as bomb explosions or similar eventualities will be coordinated by the DMC with the technical and response support with Tri Forces and Police.

5.3.11. Disaster Victim Identification (DVI)

There is a legal requirement for the Disaster Victim Identification. The responsible agencies: Attorney General Dept. Dept of Health, Police.

A committee should be appointed to look into feasible Victim Identification mechanism and if feasible to assist in setting up the system with the required training and capacity building of associated organizations.

5.3.1. Role of Media

Media has a vital role to play in terms of disaster preparedness for emergency response and early warning. It could be dissemination of warning, degree of vulnerability or any information related to disasters. It is their responsibility to ensure authenticity and accuracy of the news prior to publishing.

A responsible officer appointed by the DMC at a certain level would release relevant information to the media within the shortest possible period of time.

5.3.2. Stakeholder Involvement in Emergency Operations

There are several agencies working in the local level supports the local level emergency operations. Sri Lanka red Cross, international and national NGOs would work on relief supplies, search and rescue, first aid, safety center management and rehabilitation activities. Depending on the geographical area of their involvement they would work on disaster risk mitigation at district, division, local authority and village levels.

In a large scale disaster UN agencies, international humanitarian agencies and humanitarian military assets may involve upon the request of the Sri lankan authorities. These will be coordinated by the subject Ministry of Disaster management and DMC. In case of international relief assistance the Ministry of Foreign Affairs will make the necessary coordination with overall guidance of NCDM.

5.4. Immediate Relief and Recovery

In the National Policy for DM high priority has been accorded to several aspects during and after a disaster addressing response, relief and immediate recovery of essential services, and medium and longer term reconstruction and rehabilitation to a higher standard than before (BBB) the occurrence of the disaster.

National Disaster Relief Services Centre (NDRSC) has been established as section of the subject Ministry of DM and assigned with the relief functions such as Providing emergency funds for dry rations, meals and for drinking water, Distributing and coordinating relief items to disaster affected communities (stock, collect and distribute relief items in coordination with the district, division and GN divisions). This shows that immediate recovery of essential services, reconstruction and rehabilitation should be given adequate attention in the national and sub-national level planning.

DMC will coordinate with all ministries and agencies handling different functions related to immediate relief, early recovery, rehabilitation and reconstruction, to ensure effective management of activities in these phases. At the same time attention will be given to immovable cultural property after a disaster by way of conservation / restoration of same.

As per the provision given under the section 12 of the Act after declaration of disaster by H.E. the President, post-disaster rehabilitation, reconstruction and recovery is to be carried out by relevant authorities and bodies. NCDM has the authority to recommend allocation of funds from the Reconstruction and Rehabilitation Fund, established by Act, No. 58 of 1993. The Act also provides a provision to the NCDM to name appropriate organizations to carry out disaster management activities when there is no designated body for the implementation of such activities. Further, the Act provides for NGOs to work with relevant government organizations in the discharge of its duties after deceleration of the status of a disaster, detrimental to national independence and sovereignty.

5.4.1. Relief and Temporary Shelter Management

Emergency Relief and Temporary Shelter Management related activities will be implemented at the PC and LA levels; and district, divisional and GN levels of administration as specified in the Preparedness and Response Plans. Major stakeholders in the coordination mechanism will be Government and private sector agencies; Health sector agencies; NGOs; Business communities; Community Based Organizations (CBOs) etc. In carrying out these activities strict adherence will be ensured to social justice, equitable distribution of relief, neutrality and impartiality in the provision of assistance and respect for the dignity, values and culture of affected persons.

Health sector agencies will be involved in rapid assessment of requirement of food and sanitary facilities etc. In addition, they will assess details such as number of persons dead, injured and displaced. All agencies responsible for roads will take action for clearing the roads, for easy access to assist in the relief activities. National, Provincial and District level units of service providing agencies will assist by providing required services to any groups of marooned communities, those in temporary shelter and those in areas where services have been affected, as specified in the Operating Procedures.

DMC will coordinate as relevant with different levels of administration for organizing additional resource requirements for the affected areas from unaffected areas and also will coordinate with different organizations responsible for relief activities. In addition, the support of NGOs, CBOs, well-wishers, donors (local or international), affected communities, etc. can be coordinated by the DMC, district and divisional secretaries etc.

Minimum humanitarian standards, Sphere standards, are maintained at Emergency relief and temporary shelters on four technical areas of humanitarian response such as: Water, Sanitation and Hygiene Promotion (WASH), Food Security and Nutrition, Shelter, Settlement and Nutrition & Health.

5.4.1.1. Distribution of Relief

A mechanism needs to be established with the relevant stakeholders to ensure following in aftermath of a disaster in safety centres :

- Equitable distribution of relief
- Reduce incidence of ad-hoc and dis-organized relief distribution
- Ensure equitable assistance to individuals after disasters
- Ensure avoidance of corruption in relief distribution
- Ensure avoidance of oversupply of relief to some areas and undersupply to other remote areas by introducing a monitoring and control mechanism

For ensuring the above, following actions will be taken by the Ministry of DM:

- Assess the organizations helping in the relief and recovery including government and private sector agencies, and NGOs
- Assess the current relief and recovery arrangements
- Propose a mechanism effective monitoring and evaluation process

Concerns of the Internally Displaced People (IDPs) also have to be focused on, as emphasized in the Parliament Select Committee Report.

5.4.1.2. Resettlement of Affected People

Attention should be given for speedy resettlement of affected people. A minimum time will be stipulated for the duration of functioning of the safety centers and relief projects after a particular disaster. To achieve this, safe housing (temporary or/and permanent) will have to be provided to the affected people, if necessary relocating them from original locations within earliest possible time giving due consideration to livelihoods and social aspects.

5.4.2. Stakeholder Agencies Responsible for Immediate Recovery, Rehabilitation and Reconstruction

There are several ministries and agencies handling different functions related to the post disaster services such as provision of essential services, immediate relief establishing of safety centre,

resettlement, reconstruction and rehabilitation. Subject Ministry of DM, DMC and NDRSC will coordinate with all stakeholder ministries and agencies.

5.4.2.1. Immediate Recovery of Essential Services

National, Provincial/LA and District/Division level units of essential service providing agencies will take immediate action to revive the affected public utilities to provide essential services in affected areas. LAs will immediately attend to all services within their purview. Where services are affected severely, action will be implemented as temporary measures for the provision of such services immediately.

Immediate emergency response actions will be taken by the relevant authorities such as Police and Tri-forces on disasters due to other specific incidents such as bomb explosions, violence, civil riots and strikes.

5.4.2.2. Recovery of Livelihoods of the Affected Communities

Maximum possible assistance will be provided in respect of recovery of the disrupted livelihoods of the affected communities by the responsible government agencies and NGOs, adhering to social justice, neutrality, impartiality, values and culture of affected persons.

The respective ministries / agencies and NGOS are involved in recovery activities coordinated by DMC as relevant.

5.5. Rehabilitation and Reconstruction

Depending on the scale of the disaster, the responsible agencies will prepare immediate, medium and long term plans for rehabilitation and reconstruction after carrying out assessments of the damages. Reconstruction and rehabilitation of services and public utilities will be carried out to a higher standard than before the occurrence of the disaster, which means that hazards prevailing in the area will have to be considered in reconstruction.

The relevant agencies will provide advisory services in rapid assessments of risks in the surrounding environment and investigations in the areas selected for relocation and reconstruction depending on the hazards prevalent in the area. As described in Chapter 5.4.2. higher standards of reconstruction can be achieved with proper monitoring by relevant authorities.

DMC will coordinate as relevant with different levels of administration and service providing agencies regarding funding requirements. DMC will particularly coordinate with the various ministries and agencies handling different related functions with respect to rehabilitation, reconstruction / relocation after the disaster.

5.5.1. Major Stakeholder Agencies

A matrix of major stakeholder agencies responsible for (or could be entrusted with) different activities in post disaster recovery, rehabilitation and reconstruction are listed in Annex J. It is the responsibility of all agencies to ensure that facilities, infrastructure and housing are built to a higher standard than the standard of these before the occurrence of the disaster as indicated in the National DM Policy.

It is emphasized that agencies responsible for reconstruction will take into consideration the hazards prevalent in the area in the reconstruction process by making use of hazard/risk maps and other hazard information provided by the respective technical agencies, be it reconstruction in the same location or new construction in new locations. Some additional government agencies that can be called for assistance as necessary, in addition to any established private technical agencies for assessment on structural strength and reconstruction for (or could be entrusted with) different activities in post disaster recovery, rapid assessment/investigations, rehabilitation and reconstruction activities are listed below:

- Buildings Department
- National Building Research Organization
- State Engineering Corporation of Sri Lanka (SEC)
- State Development and Construction Corporation (SD&CC)
- Central Engineering Consultancy Bureau (CECB)
- Academic Institutions

6. Capacity Building for Disaster Risk Management

Capacity development for disaster risk management is considered an important approach emphasized in the Sendai Framework for Disaster Risk Reduction. DRM is a capacity need that extends to all sectors and all levels and is closely linked with many other functions of government and policy directives. This interlinkage is most direct in the case of CCA and the SDGs, but also relates to governance, finance, security, and many other policies and pursuits. Stakeholders both within and outside of government must work together and must integrate DRR considerations into all the work they do, including work that involves assessing or developing the capacity required.

Capacity-development is a central strategy for reducing disaster risk. Capacity development is needed to build and maintain the ability of people, organizations and societies to manage their risks successfully themselves. This requires not only training and specialized technical assistance, but also the strengthening of the capacities of communities and individuals to recognize and reduce risks in their localities. It includes sustainable technology transfer, information exchange, network development, management skills, professional linkages and other resources. Capacity development needs to be sustained through institutions that support capacity-building and capacity maintenance as permanent ongoing objectives.

While there has been notable progress in the development of capacities to manage DRM in recent years in Sri Lanka, the gains have lagged in relation to other international development endeavours. Explanations for deficiencies range from a lack of understanding of what capacity is needed (to address the required tasks) to deficient knowledge of and access to the resources required for implementation once requirements are known.

This plan suggests an integrated capacity building strategy for the successful implementation of the National Disaster Management Plan focusing following thematic areas²²;

Table 7: Thematic Areas for National Disaster Management Plan

Stakeholder Engagement	Initiates the relationships and dialogue that inform and resource the programme and forms the basis of partnerships; helps planners understand the actors and their influence
Capacity Needs Assessment	Considers a range of perspectives to ensure a tailored approach; articulates capacities, gaps, and entry points at each capacity level; identifies the cause and impact of gaps; sets the stage for intervention planning; provides initial monitoring indicators
Define the Intervention	Involves the design and development of required capacity development intervention plans, which address institutional arrangements, leadership, knowledge, and accountability
Partnership Building	Strengthening of capacity development implementation through the building of partnerships that lend credibility, access, human and financial resources, expertise, and more
Implementation	Implementation partners begin to address capacity gaps once the design of a flexible needs-based and demand driven intervention program has been completed
Monitoring and Evaluation	Conducted to ensure implementation partners are progressing towards the intended goals, and to ensure those goals are resulting in the changes required to meet capacity needs

Lack of capacities at various levels has been identified as one of the most critical factors that have impeded the process of prevention and mitigation of the risks of disasters, preparedness for effective response to impending disasters and recovery and reconstruction in the post disasters outset. Considering the importance of capacity building for disaster risk management the National Disaster Management Plan of Sri Lanka stipulated that the capacities of the public shall be enhanced for building a disaster resilient country in the context of rapid urbanization, regional development, physical infrastructure and changing climate.

Capacity development on disaster management cannot remain limited to a single sector; it must cover all the relevant sectors, organisations and institutions that are concerned with various aspects of disaster risk management. These sectors include social, economic, health, educational, infrastructure, productive, environmental, cultural and regulatory sectors both within and outside the government.

²² Strategic Approach to Capacity Development for Implementation of the Sendai Framework for Disaster Risk Reduction

This further implies that capacity development on disaster management shall involve all the stakeholders – government and nongovernment organisations, scientific and technical institutions, private and corporate sectors, media and community-based organisations. Finally, the strategic framework for capacity development cannot remain the exclusive concern of Sri Lankan Government alone; it shall address the capacity gaps and capacity needs at all levels – from national to regional, state and local down to the community level. The training and capacity development strategy of NDMP shall address all these five dimensions of capacity development in disaster management.

6.1. Training Needs Assessment

The systematic approach to Training begins with identification of training needs of the functionaries. The training and non-training needs are identified based on the performance gaps and problems of the employees. It may be noted that the performance of the employees is not up to the standards prescribed by the organization due to various factors.

Training Needs Assessment (TNA) is a systematic process conducted prior to designing a training program which involves determining the training needs at organisational, operational or individual level, identifying what kind of training is needed, and finally identifying who are the individuals that need to be trained or retrained.

Training needs can be individual, organizational, sectoral or cross sectoral depending on the desired outputs and actions. As such, TNA is critical to identify the key gaps of capacities in Sri Lanka to implement the NDMP. Thus, DMC will ensure a detailed TNA process through reputed organization across the country and devise a Capacity Building and Training Plan in conjunction to the stipulated action in this Plan.

6.2. Trainings on Disaster Management

Training will be the core function of DMC and other stakeholders in related to the disaster risk management. There are four different types of training: (a) sensitization programmes; (b) training programmes for development of functional capacities; (c) training programmes for development of technical capacities; and (d) awareness generation programmes.

Sensitization programmes are not designed to impart skills for performance of functions; these are meant to provide knowledge, information and analysis that are useful for discharging functions or taking decisions.

Training on Disaster Management includes programmes for different stakeholder agencies involved in DM in different ways in different phases of Disaster Management cycle. Training and awareness plans will be developed to cover all areas and target groups. Priorities will be set and depending on the funds available programmes will be developed and commenced. This will involve developing training plans for each District, drawing synergy with existing/ongoing efforts of other organizations.

All stakeholder institutions will indicate their needs and DMC will coordinate the provision of such training. Training needs of the members of the vigilance groups and other grass root level personnel will be assessed by designated academic institutions.

DMC will be the focal point for overall co-ordination on DRM related training. Implementation of training will be assigned to appropriate agencies identified by the DMC, depending on their capacities. Training will comprise the following types:

Table 8: Types of DRM related Trainings

Type of Training	Description
Training DMC Staff	To be organized by DMC to be conducted on a regular basis, in two ways, DMC staff at national level and special induction training for newly recruited staff; and regular training for functioning staff
National Level Training in Disaster Risk Management	To be organized by DMC to be conducted on a regular basis, with funding from the treasury, course fees or with donor funding if available, capturing all categories of personnel including technical and other professionals
Training for Government Officials, Police and Armed Forces	Appropriate modules or programs in specialist areas associated with the particular sector that the respective officials are working in, would help their career pathways. These may include strengthening of the respective organisations by identifying and strengthening the required capacities and skills to face a crisis as custom designed training programmes. Special modules are being prepared for training of the categories, viz., administrative officials and response personnel
Special Training Programmes at Sub-national Levels	Related to Disaster Risk Assessment, Preparedness, Early Warning, Response, Relief, Recovery and Reconstruction activities will be conducted
Special Skill Training related to mitigation	<p>Construction Skilled Workmen</p> <p>Theory and on-the-job training for masons on structural mitigation measures such as retaining walls in landslide prone areas; Special training programs and guidelines that detail hazard specific mitigation practices.</p> <p>Tertiary Students</p> <p>Modules and subjects directly related to disaster risk management that contains both theory and practice associated with their disciplines.</p> <p>Building Maintenance Staff</p> <p>Training for building maintenance staff on steps to take to reduce potential hazard damage, such as fixing of non-structural elements such as fans, cupboards, furniture etc. in earthquake hazards prone areas.</p>

6.2.1. Training of Trainers in Disaster Risk Management

The country must have strong pool of trainers in disaster risk management. In the post Tsunami era, many ToT programme were conducted and national trainers were produced, however after decade or so, the availability of those trainers are very limited. Therefore, there will be a major requirement to build trainer pool for disaster risk management in the country with the support of national and international partner agencies in next few years.

6.2.2. Training Facilities and Centers

The Government department and agencies are equipped with training centers for various types of training and capacity development interventions. Sri Lanka Development Administration (SLIDA) is

a state of art agency provides capacity building programme for executive staff in all 13 professional services recognized in the country.

SLIDA has already incorporated basic DRM module for their cadet batches in Public Administration, however it must be expanded to all other services in their inaugural courses. This will enable all Government executives to undergo an elementary disaster risk management module in their initial professional learning.

Tri Forces having well equipped training centers which could be used to enhance the capacity of first responders by conduct field training programmes.

6.3. Awareness Programmes

The on-going awareness programmes for different government officials at sub-national levels will be continued with regular improvements. In addition, awareness programmes for the general public and communities in specific areas that are already being conducted will be improved.

6.3.1. Specific Awareness for Different Government Officials at Sub-national Level:

- Awareness programmes related to following will be conducted in all districts based on a schedule based on proneness of the districts.
- Awareness on hazards and vulnerability
- Awareness about the safe and quick evacuation routes
- Initial response on occurrence of disaster - EOC functions, and duties and responsibilities assigned to various personnel
- Site Operation Centre (SOC) functions, and duties and responsibilities assigned to various personnel.

6.3.2. General Public Awareness

Public awareness programmes will be organized with the involvement of DMC District Units, various Government Stakeholder Agencies, NGOs and Media. These can take the form of public awareness campaigns using media, posters, competitions, street dramas, workshops and others. DMC is already using a Mobile Public Awareness Unit in these programmes. Public Awareness programmes are generally for the following target groups:

- Community in all fields of activities including farmers, fishermen, traders, skilled workmen in building trades etc. and house wives
- School teachers and children - Art competitions; participation in disaster reduction campaigns and events; and meeting with people involved in disaster mitigation
- Officials of various organizations
- Professionals of different sectors
- Political heads of Provincial Councils (PCs) and Local Authorities (LAs)
- Journalists
- Volunteer Workers. A wide array of channels of communication will be adopted for Public Awareness depending on the target groups and situations. DMC has already commenced developing different modules for such programmes.
- Face-to-face: meeting, seminar, workshop, conference, march, exhibition, demonstration, training, exchange visit, planning
- Mass media: television, melodramas, radio, newspaper, cinema
- Distributed print material: leaflet, pamphlet, brochure, booklet, guideline, case study, newsletter, journal, research paper, report
- Folk media: story, drama, dance, song, puppet, music, street entertainment
- Audio-visual: video, audio, multi-media, artwork, photograph, slide show, model, map

- Stand-alone print: billboard, poster, banner, warning sign, flood water level marker
- Postal: direct mailing
- People: community leader, volunteer, project worker, head of women's group
- Electronic media: website, e-mail, e-mail discussion lists, electronic conferencing, distance learning platform, SMS etc.

6.3.3. Awareness for Communities for Livelihood Development and Poverty Reduction:

Awareness for the communities on stabilizing and diversifying livelihoods so that people can manage disaster risk better are essential. These would also include providing them with means of receiving information on risk in the locality, early warning etc. Along with livelihood diversification and stabilizing, they have to be made aware of other aspects such as skill diversification, market expansion and product diversification to meet the market demands and so on.

Awareness and interactions will be taken up in small group meetings to create understanding of the need to address livelihood issues in post disaster recovery. Poverty reduction will be one objective of these interactions. DMC will utilize the existing mechanisms at the village/community levels involving CBOs and NGOs/ INGOs active in different areas of the country.

6.4. School Education

DMC will continue presently on-going activities as given below, and initiate some specific programmes comprising a variety of forms in educating the school children, while highest priority will be given to integration in the school curriculum. In these programmes DMC will collaborate with Ministry of Education, NIE, GIZ, NSF, UNOCHA, SLRC, NGOs.

6.5. University Education

More than 14 recognized Universities established in Sri Lanka across the country. Many of them are conducting Disaster Management courses or modules for their students. However, there is a need of streamlining these curricula to suit the national requirement for effective disaster risk management practices in every sector.

Thus, it is important to create a dialogue between universities and their academic staff to create more robust disaster risk management curricula for their undergraduate and post graduate degree programs. In addition, some short courses are offered by these universities which need to be promoted among young population for adequate capacity development upon their engagement in various agencies.

Integration of DRR in the university curricula and other tertiary educational curricula that have already been completed to different degrees will be reviewed and continued with improvements.

6.6. Tertiary Education

In Technical Colleges and other skill training schools and establishments DM will be integrated in collaboration with the various colleges as appropriate to the course contents. Teacher training has already begun for this activity. The emphasis in these is twofold, as General DM awareness and Specific content to match the subject area of the courses.

Special attention will be given to courses such as National Diploma Courses (NDT) and National Certificate in Technology (NCT) in the multiple disciplines such as civil, mechanical, electrical etc. as appropriate. Other possible courses are masonry and electrician courses conducted by the Vocational

Training Authority (VTA), National Apprenticeship and Industrial Training Authority (NAITA) and also the skill level training courses conducted by the network of technical colleges in the country.

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7. National Strategies and Action Plan for Disaster Risk Management 2022-2026

The national action plan has been prepared considering the national strategies developed based on four priority areas of SFDRR. The national action plan with specific strategic activities for four priority areas are indicated below. Respective lead agencies are being made responsible for the implementation of identified Strategic Activities with other supportive key agencies. All lead agencies are required to develop their respective institutional level disaster management plan following the given Strategic Activity directives for the next five years (2022-2026).

7.1. Priority Area 1: Understanding Disaster Risk

Identifying and assessing Disaster risk is vital to effective disaster risk management and risk sensitive development planning, leading to sustainable development. Consequently, SDG achievements heavily depend on understanding of disaster risk, including hazards, vulnerabilities, capacity gaps, exposure assessment and risk evaluation based on the tolerable and acceptable level of risk.

Understanding disaster risks benefits policy formulation, financial and physical planning, prioritizing investments for disaster risk reduction, cost-benefit analyses of development and risk reduction options, and preventing new threats. Further, it will be the basis to address the residual risk more effectively and efficiently, ensuring the maximum utilization of resources.

Understanding disaster risks require reliable data and evidence-based information on how risks associated with natural, human-induced and technological hazards interact with communities with exposures and vulnerabilities. Therefore, a proper mechanism to collect, analyse and share reliable data and information need to be established and implemented in collaboration with all relevant stakeholders.

Hazard specific, and multi-hazard risk assessments and risk mapping for vulnerable areas at different levels are essential to understanding disaster risk. Risk assessments and maps must include vulnerability, capacity, social, economic and demographic information. In addition, an integrated Disaster Risk Information Management System facilitating storing, organizing and retrieval of disaster risk data and information needs to be developed at the national and local levels.

To overcome challenges and to bridge gaps and enhance the capacity to understand risk, Short Term (2022-2024), Medium Term (2022-2026), Long Term (2022-2030) and continuous strategies and activities are to be formulated.

- **Strategy 1.1** Develop Hazard specific Risk Assessment
- **Strategy 1.2** Inter-Agency Coordination for Development of Multi-Hazard Risk Assessment
- **Strategy 1.3** Development of Effective Information System on Disaster Risk Management and Information Dissemination mechanism

- **Strategy 1.4** Capacity Building for Understanding Disaster Risk

Strategic Activity	Expected Outcome/Indicator	Time Frame	Relevant SDG target/s	Indicative Budget (LKR Mn)	Lead Agency	Other Key Agencies
Strategy 1.1 Develop Hazard specific Risk Assessment						
Expand and modernize Real- Time Hydro-meteorological observation Systems (Climatic variables, River Flow Water Level etc.	Real-time data on water level of major rivers and rainfall will be available	Continuous	SDG-11 SDG-13	500	DoMet, ID,MASL, Agri.Dpt	Relevant subject Ministries and institutions
Hazard Assessment, mapping and delineation of hazardous zone by identifying potential areas for hazard identified under SLDM Act	Hazard maps will be available	Short Term	SDG-11 SDG-13	200	DMC, Relevant Technical Agencies	Relevant subject Ministries and institutions, Provincial and Local government
Develop geo- referenced hazard specific disaggregated database for exposure and vulnerability and make them available publicly	Disaggregated data of hazard specific exposure and vulnerability will be available	Short Term	SDG-11 SDG-13	300	DMC, Relevant Technical Agencies	Relevant subject Ministries and institutions, Provincial and Local government
Hazard specific risk assessment / mapping and provide them publicly	The information on hazard specific risk level (High, Medium and Low) in an open source format will be available publicly	Short Term	SDG-11 SDG-13	300	DMC, Relevant Technical Agencies	Relevant subject Ministries and institutions, Provincial

						and Local government
Prepare and implement Hazard specific risk sensitive land use plans/development zonation plans/National physical plans etc.	Risk sensitive Land use plans /development zonation plans/National physical plans available and will be implemented	Long Term	SDG-11 SDG-13	100	Department Land use policy Planning, UDA, NPPD	Relevant subject Ministries and institutions, Provincial and Local government
Develop and operationalized hazard specific risk informed budgeting and financial system for the country	Risk informed budgeting and financial system available and operational	Long Term	SDG-8 SDG-11 SDG-12 SDG-13	25	Ministry of Finance, NPD, NBD, CB	Relevant subject Ministries and institutions, Provincial and Local government
Develop and operationalized hazard specific risk informed development project prioritizing system	Risk informed development project prioritizing system available and operational	Long Term	SDG-8 SDG-11 SDG-12 SDG-13	10	NPD,DMC	Relevant subject Ministries and institutions, Provincial and Local government
Strategy1. 2 Inter-Agency Coordination for Development of Multi-Hazard Risk Assessment						
Develop a system to institutionalize Common National Framework for Multi-hazard Risk Assessment	Means, methodology, institutional arrangement and guidelines for Multi-hazard Risk Assessment will be available	Short Term	SDG-8 SDG-11 SDG-12 SDG-13	10	DMC	Relevant subject Ministries and institutions, Provincial and Local government

Establish inter agency mechanism for standardization on data collection related to hazard, exposure, vulnerability and risk	Standardization on data collection related to hazard, exposure, vulnerability, and risk will be established	Short Term	SDG-8 SDG-11 SDG-12 SDG-13	10	DMC	Relevant subject Ministries and institutions, Provincial and Local government
Conduct comprehensive multi-hazard risk assessment and mapping at national to local level(District/ Division/ local Government) for critical infrastructure, major life line services and population	Information on Multi-Hazard Risk Assessment for the critical infrastructure, major life line services and population will be available publicly	Short Term	SDG-8 SDG-11 SDG-12 SDG-13	200	DMC, All the institutions baring the responsibilities on critical infrastructure , major life line services	Relevant subject Ministries and institutions, Provincial and Local government
Prepare multi-hazard risk sensitive land use plans/development zonation plans/National physical plans etc. and make them available publicly	Multi hazard risk sensitive land use plans/development zonation plans/National physical plans etc. will be available	Medium Term	SDG-8 SDG-11 SDG-12 SDG-13	50	Department Land use policy Planning, UDA, NPPD, DMC	Relevant subject Ministries and institutions, Provincial and Local government
Strategy 1.3 Development of Effective Information System on Disaster Risk Management and Information Dissemination mechanism						
Utilize different media (social, print, electronics, audio visual) effectively to disseminate the existing and emerging disaster risk	Information on Disaster Risk will be disseminated extensively	Continuous	SDG-8 SDG-11 SDG-12 SDG-13	25	DMC, ICTA,	Relevant subject Ministries and institutions, Provincial and Local government

Collaborate with Public, private, community based, UN, Inter- Governmental , non- governmental organizations, political parties, and media for disaster risk information sharing from national to local level	Extensive collaboration for disaster risk information sharing will be established	Continuous	SDG-11 SDG-12 SDG-13	5	DMC, ICTA,	Relevant subject Ministries and institutions, Provincial and Local government
Prepare communication and dissemination strategies and procedures for disaster risk information sharing (including application of technologies such as mobile apps, website, SMS, radio, television) at national, to local level	Disaster risk information will be disseminated effectively at all levels	Short Term	SDG-11 SDG-12 SDG-13	10	DMC, ICTA,	Relevant subject Ministries and institutions, Provincial and Local government
Prepare communication and dissemination strategy and procedures for risk information sharing with whole vulnerable group of the society giving priority to women, Children, elderly and disabled people etc.	Risk information will be shared with whole vulnerable group of the society giving priority to women, children, elderly and disabled people etc.	Short Term	SDG-5 SDG-10 SDG-11 SDG-12 SDG-13	100	DMC, ICTA,	Relevant subject Ministries and institutions, Provincial and Local government UN, Inter-Governmental , non-governmental organizations
Establish authoritative, Geographic Information System(GIS) based Disaster Risk Information Management System at national and local level	Disaster Risk Information Management System will be available for disaster risk information at all levels	Medium Term	SDG-5 SDG-10 SDG-11	100	DMC, ICTA	Relevant subject Ministries and institutions, Provincial

						and Local government
Promote bilateral, regional, and international cooperation in disaster risk information sharing	Risk information will be available across the border	Long Term	SDG-5 SDG-10 SDG-11	5	DMC, ICTA	Relevant subject Ministries and institutions, Provincial and Local government
Strategy 1.4 Capacity Building for Understanding Disaster Risk						
Institutionalize Course/Subject based inter-disciplinary Modules/ curriculum on different aspects of Disaster Risk Reduction and Management from school to the university level	Understanding on Disaster Risk will be increased with development of skilled human resources in the area of Disaster Risk Reduction and Management	Short Term	SDG-4 SDG-5 SDG-11 SDG-12	150	DMC, Mo Education, Mo Higher Education, UGC, Universities	Relevant subject Ministries and institutions, Provincial and Local government
Conduct regular roads safety education programs for drivers	Capacity of the Drivers will be enhanced to reduce road accident	Short Term	SDG-9 SDG-11	5	DMC, SL Police	Relevant subject Ministries and institutions, Provincial and Local government
Conduct training programs by developing curriculum/modules related to disaster risk reduction for women, children, elderly persons, disabled people, vulnerable communities, and all concerned stakeholders	Capacity of vulnerable communities, and all concerned stakeholders will be developed on understanding disaster risk	Short Term	SDG-4 SDG-5 SDG-10 SDG-11	100	DMC, Mo Education, Mo Higher Education, UGC, Universities	Relevant subject Ministries and institutions, Provincial and Local

						government UN, Inter-Governmental, non-governmental organizations
Disseminate information about the role of students, parents, teachers, health workers, Lifeline basic service provider, community based organizations, and consumers, in Disaster Risk Reduction, provide training and exchange experiences at different level	Capacity of students, parents, teachers, health workers, Lifeline basic service provider, community based organizations, and consumers will be developed on understanding Disaster Risk	Short Term	SDG-3 SDG-4 SDG-5 SDG-10 SDG-11	50	DMC, Mo Education, Mo Higher Education, UGC, Universities, Dept of Health, Lifeline basic service Providing Institutions involve with	Relevant subject Ministries and institutions, Provincial and Local government UN, Inter-Governmental, non-governmental organizations
Orient the members of political parties and their sister organizations, elected people's representatives, focal persons of the line agencies/ organizations involve in Disaster Risk management sector about Disaster Risk Reduction and Management Act, regulations, policy, strategic action plan	Disaster risk related awareness rising activities will be conducted with widespread collaboration	Short Term	SDG-4 SDG-5 SDG-10 SDG-11	50	NCDM, DMC	Relevant subject Ministries and institutions, Provincial and Local government
Provide training to the businessmen, professionals, entrepreneurs, and industrialists about disaster risk management and encourage them for accountability, participation and responsibility	Private sector will be responsible being well informed about disaster risk	Short Term	SDG-1 SDG-4 SDG-5 SDG-8 SDG-11	100	DMC, Ministry of Industries, Professional Bodies	Relevant subject Ministries and institutions, Provincial and Local government

						UN, Inter-Governmental, non-governmental organizations
Develop and implement comprehensive national and local level (District/Divisional/Local Government) programs for awareness rising and training on disaster risk	Awareness will be increased on disaster risk Management at all levels	Short Term		25	DMC, Ministry of Home affairs, Ministry of Provincial and Local Government, SLILG,	Relevant subject Ministries and institutions, Provincial and Local government UN, Inter-Governmental, non-governmental organizations
Strengthen capacity of existing training centers on disaster risk management	Capacity of the existing training centers will be strengthened in disaster risk management	Short Term		500	DMC, Tri Forces,	Relevant subject Ministries and institutions, Provincial and Local government UN, Inter-Governmental, non-governmental organizations
Develop capacity of driving schools on road accident and roles and responsibilities of drivers during disasters	Capacity of the driving schools will be strengthened to reduce road accidents and damages during disasters	Short Term	SDG-4 SDG-5 SDG-11	10	DMC, SL Police	Relevant subject Ministries and

						institutions, Provincial and Local government
Conduct capacity development program for stakeholders and professionals on hazard, vulnerability and risk assessment, interpretation and updating, risk sensitive land use plans/development zonation plans/National physical plans etc preparation and disaster impact assessment at the National and Local level or based on sectors	Capacity will be strengthened on risk assessment, interpretation updating and applications	Long Term	SDG-4 SDG-5 SDG-11	100	Department Land use policy Planning, UDA, NPPD, CEA,CC&C RD, DMC	Relevant subject Ministries and institutions, Provincial and Local government UN, Inter- Governmenta l, non- governmental organizations
Conduct research and development on the issues, problems and solutions of Disaster Risk Management and Climate Change Adaptation	New Technology and Approach will be developed for Disaster Risk Management Adaption and Climate Change Adaptation	Long Term	SDG-3 SDG-4 SDG-5 SDG-6 SDG-11 SDG-13	100	DMC, CCS,NSF, Universities, Research Centers	Relevant subject Ministries and institutions, Provincial and Local government UN, Inter- Governmenta l, non- governmental organizations
Strong and long-term international and regional collaboration with scientific institutions, universities and organizations to conduct scientific research and for the communication,	Collaboration with international and regional scientific institutions, universities and organizations	Long Term	SDG-3 SDG-4 SDG-5	10	DMC, CCS,NSF, Universities, Research Centers	Relevant subject Ministries and institutions,

adaptation and implementation of understanding risk.			SDG-6 SDG-11 SDG-13		Provincial and Local government
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7.2. Priority Area 2: Strengthening Disaster Risk Governance

Sendai Framework for Disaster Risk Reduction (SFDRR) 2015-2030 identifies disaster risk governance at different levels which is of great importance for an effective and efficient management of disaster risk. It also requires clear vision, plans, competence, guidance, and coordination within and across all sectors as well as participation of relevant stakeholders. Strengthening the disaster risk governance system is necessary to foster the collaboration and partnership for the implementation of disaster risk reduction and sustainable development.

Strengthening disaster risk governance is considered as cornerstone of the efforts to understand, reduce and manage the risks as it seeks to put in place good governance mechanisms on DRM ensuring the role and responsibilities of institutions and stakeholders mandate to DRM. Under the priority areas implement and strengthen, appropriate institutional and legislative frameworks for disaster risk management could be ensured, as it will help to define the mandates and inter-relationships of respective organizations within and across sectors as well as different administrative levels. Further, disaster risk governance entails mechanisms, institutions and processes for citizens to articulate their interests, exercise their legal rights and obligations, and mediate their differences in disaster risk reduction and management.

Focusing the prominence of the well operational disaster risk governance system for the country, following strategies are formulated.

Strategy 2.1 Establishment and Strengthening institutional structures for effective and efficient disaster risk management

Strategy 2.2 Formulation of Legal and Regulatory Framework for disaster risk management

Strategy 2.3 Enhance Capacities, Collaboration and Partnership for Disaster Risk Governance

Strategy 2.4 Ensuring in cooperation of inclusiveness in Disaster Risk Management at all levels

Strategic Activity	Expected Outcome	Time Frame	Relevant SDG target/s	Indicative Budget (LKR Mn)	Lead Agency	Other Key Agencies
Strategy 2.1 Establishment and Strengthening institutional structures for effective and efficient disaster risk management						
Strengthen DMC following the provisions given under SLDM Act for effective and efficient disaster risk management.	Strengthen institutional arrangement at national to local level will be available for disaster risk management	Short Term	SDG-8 SDG-9 SDG-11 SDG-12 SDG-13	25	NCDM, Subject Ministry, DMC	
Formulate and implement time bound action plan at national ,district, divisional, and local government level to develop Disaster Risk Management Committees and institutional structure	Institutional structures and working capacity will be developed at National, district, divisional and local government level in disaster risk governance.	Short Term	SDG-8 SDG-9 SDG-11 SDG-12 SDG-13	50	NCDM, DMC, Ministry of Home Affairs, Ministry of Provincial and Local Government	Relevant subject Ministries and institutions, Provincial and Local government
Establish coordination mechanism at national ,district, divisional, and local government level to integrate and implement the concept of Disaster Risk Reduction and Management in every sector	A coordination mechanism will be established with clear responsibility in each sector	Short Term	SDG-8 SDG-9 SDG-11 SDG-12 SDG-13	50	NCDM, DMC, Ministry of Home Affairs, Ministry of Provincial and Local Government	Relevant subject Ministries and institutions,
Establish monitoring mechanism from national to Local level to identified the existing risky public service, means of livelihood, and Physical infrastructures (public, government and private buildings, hydraulic structures, urban infrastructures, school and hospital, stadium, theaters, Shopping malls, etc.)	Risk Monitoring mechanism and Catalogue on High risk public services, means of livelihood, and Physical infrastructures (public, government	Short Term	SDG-8 SDG-9 SDG-11 SDG-12 SDG-13	50	DMC, Ministry of Home Affairs, Ministry of Provincial and Local Government	Relevant subject Ministries and institutions,

	and private buildings, hydraulic structures, urban infrastructures, school and hospital, stadium, theaters, Shopping malls, etc.) will be available					
Assign a focal person, section or division for disaster risk management in Sectoral Ministries and Departments and statutory bodies	A dedicated central unit will be available in every Sectoral Ministries and Departments and statutory bodies for disaster risk management	Short Term	SDG-8 SDG-9 SDG-11 SDG-12 SDG-13	1	DMC	Relevant subject Ministries and institutions, Provincial and Local government
Establish Disaster Risk Management Committees in schools and hospitals	Disaster Risk Management in schools and hospitals will be effective	Short Term	SDG-3 SDG-4 SDG-11 SDG-12 SDG-13	50	Ministry of Education, Department of Education, ministry of health and Department of health, DMC,	UN, Inter-Governmental , non-governmental organizations
Establish Emergency Operation Center at District Level	The disaster Preparedness and emergency responses will be effective at the district, divisional and local level.	Short Term	SDG-8 SDG-9 SDG-11 SDG-12 SDG-13	200	DMC, Ministry of Home Affairs /District Secretariats	UN, Inter-Governmental , non-governmental organizations
Establish Health Emergency Operation Center at Provincial District and MOH Level	Emergency health service will be Effective at the province District and MOH Level	Short Term	SDG-3 SDG-9 SDG-11 SDG-12 SDG-13	200	Ministry of Health, Department of Health, DMC,	UN, Inter-Governmental , non-governmental organizations

Improve and strengthen the organizational structure of relevant ministries departments, and statutory bodies to directly involved in Disaster Risk Management	DRM will be effectively institutionalized	Short Term	SDG-8 SDG-9 SDG-11 SDG-12 SDG-13	25	NCDM, DMC and relevant ministries departments, and statutory bodies	Relevant subject Ministries and institutions, Provincial and Local government, UN, Inter-Governmental , non-governmental organizations
Strategy 2.2 Formulation of Legal and Regulatory Framework for disaster risk management						
Prepare Disaster Risk Management Regulations for the effective implementation of SLDM Act 2005	Regulations will be prepared for managing and strengthening DRM governance	Short Term	SDG-1 SDG-8 SDG-9 SDG-11 SDG-12 SDG-13	25	NCDM, Subject Ministry, DMC	Relevant subject Ministries and institutions
Prepare Regulations for the effective implementation of Disaster Risk Management with respective to the other relevant Acts	Regulations will be prepared for managing and strengthening Disaster Risk Management governance	Short Term	SDG-1 SDG-8 SDG-9 SDG-11 SDG-12 SDG-13	50	Relevant Ministries, Agencies, Statutory Bodies,	Legal Draftsmen Department, DMC
Preparation and implementation of DRM plans following the provisions given under the SLDM Act	Effective DRM and Management action plan will be prepared at Province and Local level	Short Term	SDG-8 SDG-9 SDG-11 SDG-12 SDG-13	100	NCDM, Subject Ministry, DMC Relevant Ministries, Agencies, Statutory Bodies	
Prepare National Road Safety strategy and update the road safety action plan	National Road Safety Strategy will be	Short Term	SDG-9	25	Sri Lanka police, DMC	

	prepared and road safety action plan will be updated.		SDG-11 SDG-12 SDG-13			
Prepare Guideline for Mainstream DRR into Local Governance	Guideline for Mainstream DRR into Local Governance will be prepared	Short Term	SDG-8 SDG-9 SDG-11 SDG-12 SDG-13	25	Ministry of provincial Council, Local Government, DMC	Relevant subject Ministries and institutions, Provincial and Local government, UN, Inter-Governmental , non-governmental organizations
Prepare Guideline for the preparation of DRR strategies at Local government	Guideline for the preparation of DRR strategies at Local government will be prepared	Short Term	SDG-8 SDG-9 SDG-11 SDG-12 SDG-13	100	Ministry of provincial Council, Local Government, DMC	Relevant subject Ministries and institutions, Provincial and Local government, UN, Inter-Governmental , non-governmental organizations
Update and enforce The Building regulations, revise Building Code for urban and rural areas, and update regulation for the building	Policy arrangement for flood, landslide, high winds, tremors,	Short Term	SDG-8 SDG-9	150	ICTAD, Building	Relevant subject Ministries and

construction at rural and urban local governments	resistant building construction will be in place		SDG-11 SDG-12 SDG-13		Department, NBRO, DMC	institutions, Provincial and Local government
Prepare guidelines for retrofitting of risky infrastructures (Residential Buildings, Hotel, Apartment, Industrial Building, historical and cultural heritages, school, hospital, community building, shelter etc.)	Retrofitting Guidelines for DRR of risky infrastructures will be available	Short Term	SDG-8 SDG-9 SDG-11 SDG-12 SDG-13	10	ICTAD, Building Department, DMC, Archeological Department, UDA, REAL, SLTDA, local Government	Relevant subject Ministries and institutions,
Develop guidelines for mainstreaming disaster risk reduction into sectoral development plans	Guidelines for mainstreaming DRR into sectoral development plans will be prepared	Short Term	SDG-8 SDG-9 SDG-11 SDG-12 SDG-13	50	DMC , Concerned institutions in Development Sector	Relevant subject Ministries and institutions, Provincial and Local government, UN, Inter-Governmental , non-governmental organizations
Develop guidelines for mainstreaming disaster risk reduction into private sector	Guidelines for Mainstreaming DRR into Private sector will be prepared	Short Term	SDG-8 SDG-9 SDG-11 SDG-12 SDG-13	25	DMC, Chamber of Commerce,	Relevant subject Ministries and institutions, Provincial and Local government, UN, Inter-Governmental

						, non-governmental organizations
Incorporate Disaster Risk Impact Assessment into Central Environment Act and Environmental Impact Assessment Guidelines	Disaster Risk Impact Assessment will be included into Central Environment Protection Act and Environmental Impact Assessment Guidelines	Short Term	SDG-8 SDG-9 SDG-11 SDG-12 SDG-13	10	CEA, CC&CRDD, NW province Environment Authority, DMC	Relevant subject Ministries and institutions, Provincial and Local government, UN, Inter-Governmental , non-governmental organizations
Prepare and incorporate Initial and Comprehensive Risk Assessment Framework for development projects for the selection of major projects based on the disaster and climate change risk related knowledge	Comprehensive Risk Assessment Framework will be prepared including climate and disaster risk resistant technology in major projects	Short Term	SDG-8 SDG-9 SDG-11 SDG-12 SDG-13	25	DMC, CCS, NPD	Relevant subject Ministries and institutions, Provincial and Local government, UN, Inter-Governmental , non-governmental organizations
Incorporate Disaster Risk Reduction in Natural Resource Management related various programs and action plans	Disaster Risk Reduction will be incorporated in Natural Resource Management related various programs and action plan	Short Term	SDG-6 SDG-7 SDG-8 SDG-9 SDG-11	25	DMC, Concerned institutions directly involve in natural Resources management	Relevant subject Ministries and institutions, Provincial and Local government, UN, Inter-

						Governmental , non-governmental organizations
Establish a system of rewarding the employees for their special contribution in Disaster Risk Management	The performance of employees will be improved due to a system of rewarding the employees for their special contribution in disaster risk management	Short Term	SDG-8 SDG-11	10	NCDM, DMC	Relevant subject Ministries and institutions, Provincial and Local government, UN, Inter-Governmental , non-governmental organizations
Prepare a regulations and standard operating procedures for Emergency response in national to Local Level	Standard operating procedures for Emergency response at national to Local Level for accountability ,	Short Term	SDG-7 SDG-9 SDG-11	25	NCDM, DMC Tri Forces, Police	Legal Draftsmen Department
Prepare a regulations and standard operating procedures for food security in national to Local Level	Standard operating procedures for Food Security will be available at national to Local Level for accountability ,	Short Term	SDG-1 SDG-2 SDG-5 SDG-11	10	Department of Agriculture Department of trade and Commerce, Department of Food, Department of Agrarian Services, Department of livestock	Relevant subject Ministries and institutions, Provincial and Local government, UN, Inter-Governmental , non-governmental organizations

Prepare and implement guidelines for the Inclusive Disaster risk management	The guidelines will be prepared and implemented for Inclusive Disaster risk management	Short Term	SDG-5 SDG-11 SDG-12	10	DMC, Women & Child Protection Authority, Elderly People Bureau, Department of Social services	Relevant subject Ministries and institutions, Provincial and Local government, UN, Inter-Governmental , non-governmental organizations
Prepare guidelines for mobilization of volunteers for disaster response at the community level	A guideline will be available to facilitate mobilization of volunteers during disaster	Short Term	SDG-5 SDG-11 SDG-12	25	DMC, Tri Forces, Sri Lanka Police Department , Youth Crops	Relevant subject Ministries and institutions, Provincial and Local government, UN, Inter-Governmental , non-governmental organizations
Revise / Prepare the Guidelines for mobilization of non-governmental organizations for Disaster Preparedness, Responses, Recovery, Reconstruction and Rehabilitation	Mobilization of non-governmental organization in disaster Management will be effective and transparent	Short Term	SDG-5 SDG-11 SDG-12	5	DMC Ministry of Home Affairs, District Secretariats, NGO secretariat	Relevant subject Ministries and institutions, Provincial and Local government
Prepare guidelines for debris and various other wastage management during disaster	A guideline will be prepared for debris and various other wastage during disaster.	Short Term	SDG-5 SDG-11 SDG-12	10	Provincial and Local government Authorities	DMC, Relevant subject Ministries and

						institutions, UN, Inter-Governmental , non-governmental organizations
Prepare the guideline for the implementation of NDMP	guideline for the implementation of NDMP will be available	Short Term	SDG-5 SDG-11	10	NCDM,DMC	DMC, Relevant subject Ministries and institutions, UN, Inter-Governmental , non-governmental organizations
Prepare the guideline for the implementation of NEOP	guideline for the implementation of NEOP will be available	Short Term	SDG-5 SDG-11	10	NCDM,DMC	DMC, Relevant subject Ministries and institutions, UN, Inter-Governmental , non-governmental organizations
Revise the Standard Operating Procedures of National Emergency Operation Center and prepare Standard Operating Procedures for Emergency Operation Centers at District level	The Standard Operating Procedures of Emergency Operation Centers will be updated and available	Short Term	SDG- 3 SDG-5 SDG-11	5	DMC	
Prepare Standard Operating Procedures	Standard Operating Procedures will	Short Term		5	Department of Health	

for Health Emergency Operation Centers at Province District and MOH level	be available for Health Emergency Operation Centers at Province District and MOH level					
Prepare guidelines developing standards for effective Post Disaster Search and Rescue	Guidelines will be available for effective Search and Rescue	Short Term	SDG-11	25	DMC, Tri Forces, Sri Lanka Police Department ,	Relevant subject Ministries and institutions, UN, Inter-Governmental , non-governmental organizations
Prepare and regularly update the Local Disaster Risk Management Plans for District Divisional Local and GN level Community Disaster Management Committees	Standard Operating Procedures will be prepared for Effective Disaster Preparedness and Emergency Responses at local level	Short Term	SDG-11	100	DMC Ministry of Home Affairs, District / Divisional Secretariats /GND	Relevant subject Ministries and institutions, UN, Inter-Governmental , non-governmental organizations
Prepare integrated guidelines of local level Disaster Risk Management and Climate Change Adaptation Guidelines and Directives	Integrated guideline will be available for local level Disaster Risk Management and Climate Change Adaptation	Short Term	SDG- 11 SDG-13	20	DMC,CCS	Relevant subject Ministries and institutions, UN, Inter-Governmental , non-governmental organizations
Develop new codes and standards to design infrastructures for disaster risk reduction incorporating new technologies	New code, standard and technology will be available	Medium Term	SDG- 9 SDG-11	20	ICTAD, Building Department, NHDA, DMC,	Relevant subject Ministries and institutions,

						Professional bodies such as IESL/SEC/ Architectures Association UN, Inter-Governmental , non-governmental organizations
Prepare Master plan for river basin management and watershed conservation in major river basin on the basis of disaster risk assessment	A guideline will be prepared for disaster risk reduction on the basis of Green Infrastructure and Ecosystem Based Adaptation	Medium Term	SDG- 1 SDG-6 SDG-11 SDG-13	100	ID,MASL,	DMC, Relevant subject Ministries and institutions, UN, Inter-Governmental , non-governmental organizations
Prepare guidelines to manage heat wave	Guidelines for effective management of heat wave will be prepared	Medium Term	SDG-11 SDG-13	10	Health Department, Meteorological Department, DMC	Relevant subject Ministries and institutions, UN, Inter-Governmental , non-governmental organizations
Prepare guidelines for Agriculture sector on Natural and Climatic Disaster Management	Guidelines for Agriculture sector on effective management of Natural and Climatic Disaster will be	Long Term	SDG- 1 SDG-2 SDG-6 SDG-11 SDG-13	5	Department of Agriculture, CCA, DMC	Relevant subject Ministries and institutions, UN, Inter-Governmental

	prepared					, non-governmental organizations
Strategy 2.3 Enhance Capacities, Collaboration and Partnership for Disaster Risk Governance						
Conduct capacity building programs identifying the governance capacity in disaster risk reduction at the district ,divisional local government level	Capacity in disaster risk governance will be developed through the implementation of capacity development programs	Short Term	SDG-3 SDG-4 SDG-5 SDG-6 SDG-11 SDG-13	100	DMC Ministry of Home Affairs, District / Divisional Secretariats Local Government	Relevant subject Ministries and institutions, UN, Inter-Governmental , non-governmental organizations
Establish the network of the government , UN bodies, Inter governmental Agencies and nongovernment agencies involved in disaster risk at the national, district ,divisional and Local government level	Wider stakeholder's participation will be achieved at all levels for disaster risk management thorough instituting the network of government , UN bodies, Inter governmental Agencies and nongovernment agencies	Medium Term	SDG-3 SDG-4 SDG-5 SDG-6 SDG-11 SDG-13	5	NCDM, DMC	
Conduct training on Climate and Disaster Risk Impact Assessment method	Human resource will be developed for the Climate and Disaster Risk Assessment by conducting training	Medium Term	SDG-3 SDG-4 SDG-5 SDG-6 SDG-11 SDG-13	10	DMC,	Relevant subject Ministries and institutions, UN, Inter-Governmental , non-governmental organizations

Strengthen National Disaster Risk Reduction Platform and expand it in District and Divisional level	The extensive participation of stakeholders will be achieved in Disaster Risk Management	Medium Term	SDG-3 SDG-4 SDG-5 SDG-6 SDG-11 SDG-13	25	DMC, District / Divisional Secretariats	Relevant subject Ministries and institutions, UN, Inter-Governmental , non-governmental organizations
Collaborate with national and international non-governmental organizations, Universities and research centers, United Nations, donor agencies, and others stakeholders in disaster risk reduction and management	The extensive collaboration will be developed in Disaster Risk Reduction and Management	Medium Term	SDG-3 SDG-4 SDG-5 SDG-6 SDG-11 SDG-13	10	Ministry of Foreign Affairs, DMC	Relevant subject Ministries and institutions, UN, Inter-Governmental , non-governmental organizations
Promote the transboundary and international cooperation in Disaster Risk Management	The information across the border will be available on impending disaster	Medium Term	SDG-3 SDG-4 SDG-5 SDG-6 SDG-11 SDG-13	10	Ministry of Foreign Affairs, DMC	Relevant subject Ministries and institutions, UN, Inter-Governmental , non-governmental organizations
Strategy 2.4 Ensuring in cooperation of inclusiveness in Disaster Risk Management at all levels						
Implement gender sensitive and inclusive approach in all the processes of Disaster Risk Management	Every sector will have pursued gender sensitive and inclusive disaster risk management approach	Short Term	SDG-3 SDG-4 SDG-5 SDG-6 SDG-11 SDG-13	10	DMC, Women & Child Protection Authority, Elderly People Bureau,	Relevant subject Ministries and institutions, UN, Inter-Governmental

					Department of Social services	, non-governmental organizations
Prepare Gender Equality and Social Inclusion action plan for Disaster Risk Management at all level and sector	The action plan will be available for gender equality and social inclusion	Short Term	SDG-3 SDG-4 SDG-5 SDG-6 SDG-11 SDG-13	10	DMC, Women & Child Protection Authority, Elderly People Bureau, Department of Social services	Relevant subject Ministries and institutions, Provincial Council and Local government UN, Inter-Governmental , non-governmental organizations
Conduct the social mobilization programs at local level for accessibility, representation and effective participation of communities at-risk in the formulation of disaster risk management programs	Social mobilization programs will have been conducted at the local level for disaster risk management	Short Term	SDG-3 SDG-4 SDG-5 SDG-6 SDG-11 SDG-13	10	DMC, District / Divisional Secretariats, Local Government	Relevant subject Ministries and institutions, UN, Inter-Governmental , non-governmental organizations
Develop and implement special programs on disaster risk reduction on the basis of priority for the highly vulnerable groups such as the women, people with disability, children, and elderly persons and marginalized groups of society,	Disaster risk of women, children, elderly persons, persons with disability and vulnerable community will be reduced through implementation of special programs	Long Term	SDG-3 SDG-4 SDG-5 SDG-6 SDG-11 SDG-13	10	DMC, Women & Child Protection Authority, Elderly People Bureau, Department of Social services	Relevant subject Ministries and institutions, UN, Inter-Governmental , non-governmental organizations

7.3. Priority Area 3: Investing in Disaster Risk Reduction for Resilience

Private and public investments are important in disaster risk prevention and mitigation focusing on structural and non-structural measures including risk sharing to enhance resilience as drivers for poverty reduction, employment generation, and economic strength.

Following national strategies of investing on DRR are formulated to achieve resilience and sustainable development.

Focusing on the status of the country on risk sensitive investment following national strategies are formulated with the objectives to reduce existing disaster risk by investment in increasing resilience and to prevent future risks by promoting private and public investment in disaster risk reduction.

Strategy 3.1 Promoting Investment in increasing Resilience

Strategy 3.2 Promoting Public investment in Disaster Risk Reduction

Strategy 3.3 Promoting Private Investment in Disaster Risk Reduction

Strategy 3.4 Increasing Disaster Resilience through Risk Sharing, Insurance and Social Security

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Strategic Activity	Expected Outcome	Time Frame	Relevant SDG target/s	Indicative Budget (LKR Mn)	Lead Agency	Other Key Agencies
Strategy 3.1 Promoting Investment in Increasing Resilience						
Cleaning drainage and water courses will be decrease inundation and increased for flood resilience	Cleaned drainage and water courses and decrease inundation	Short tem	SDG 3 SDG 6 SDG 11 SDG 13	1000	ID, MASL, SLLRDC, DMC , Local Government	Concerned Ministries, institutions, Statutory bodies of the Government of Sri Lanka, Province Government
Invest in programs and trainings related to employment, skill development and health services as per the interest and necessity of women, children, and other marginalized communities for raising their living standard	Disaster resilience of vulnerable community will be increased	Short tem	SDG 1 SDG4 SDG 5 SDG11	50	Skill Development Authority, NITA, Technical Collages, Women & Child Protection Authority, Elderly People Bureau, Department of Social services, DMC	Relevant subject Ministries and institutions, Provincial Council and Local government UN, Inter-Governmental , non-governmental organizations
Invest in the programs increasing the market access of the goods and services produced by the poor ,marginalized and deprived communities of disaster prone area	Disaster resilience of the community of disaster prone area will be increased	Short tem	SDG 1 SDG 5 SDG11	100	Samurdhi Department, Department of Social services,	Relevant subject Ministries and institutions, Provincial Council and

						Local government UN, Inter-Governmental , non-governmental organizations
Give special attention to improve Social security, Basic health, reproductive health, Child health, Adolescents health and nutrition in disaster prone area	Disaster resilience of the community of disaster prone area will be increased	Short tem	SDG 3 SDG 11 SDG15	50	Health Department Women & Child Protection Authority	Relevant subject Ministries and institutions, Provincial Council and Local government UN, Inter-Governmental , non-governmental organizations
Formulate plan for retrofitting and other alternatives by identifying the most essential life line services and structures during emergency and managing resources for their structural and operational continuity	Service continuation plan will be available and operationalized for essential emergency services and structures	Short tem	SDG 4 SDG9 SDG11	500	NWS&DB, CEB, RDA, Telecommunication, ID, MASL	Relevant subject Ministries and institutions, Provincial Council and Local government
Build up capacity of all schools of the country as the strongest structure by constructing, reconstructing and retrofitting including	disaster resilience Schools will be available	Medium term	SDG 4 SDG9 SDG11	1000	Ministry of Education and Department of	Relevant subject Ministries and institutions,

making capable of providing the emergency safer center services					Education, Provincial Education Ministries	
Prepare and implement a handbook for the protection, maintenance and operation of historical and cultural heritages and places	A handbook will be prepared and implemented for resilience of historical and cultural heritages and places	Medium term	SDG-11	250	Archaeological Department, Ministry of Culture Affairs	Relevant subject Ministries and institutions,
Enhance rain water harvesting to conserve water and develop efficient technology for water use	The loss caused by flood, droughts, will be reduced	Medium term	SDG-7 SDG-11 SDG-13	500	NWS&DB, WRB, UDA, Local Authorities	Relevant subject Ministries and institutions, Provincial Council and ,UN, Inter-Governmental , non-governmental organizations
Construct a fire line/Fire fence in the forest of dry areas	The loss by fire will be reduced	Medium term	SDG-11	250	Forest Department	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental ,

						non-governmental organizations
Promote the local resource based Green Infrastructure at local level for flood, drought and landslide mitigation	Disaster and Climate Change resilience will be developed by the construction of green infrastructure	Medium term	SDG-7 SDG-11 SDG-13	2500	All institution responsible for infrastructure development and regulation bodies such as UDA/Local Government CIDA/DMC	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental , non-governmental organizations
Increase investment in conserving Lake, in land water bodies Wetlands and Ponds	The losses by flood, drought, and landslide will be reduced by conserving Lake, Wetlands and Ponds	Long Term	SDG 6 SDG-7 SDG-11 SDG-13	2500	ID,MASL, DAD, Provincial Council, Local Government	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental , non-governmental organizations
Promote alternative Renewable energy at the national and Local level to reduce environmental degradation and disaster risk	Disaster and climate change resilience	Long Term	SDG-7 SDG-11 SDG-13	1000	CEB , Renewable Energy Authority	Relevant subject Ministries and

	will be developed by the use of Renewable energy					institutions, Provincial Council and Local Government, UN, Inter-Governmental , non-governmental organizations
Enhance emergency treatment capacity of hospitals and all health services	emergency treatment capacity will be increased in all health services for disaster resilience	Long Term	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	1500	Ministry of Health, Department of Health	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental , non-governmental organizations
Establish model schools for disaster risk reduction	Disaster resilience will be increased in education sector	Long Term	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	2500	Ministry of Education and Department of Education, Provincial Education Ministries, DMC	Relevant subject Ministries and institutions, Provincial Council and Local Government,

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						UN, Inter-Governmental , non-governmental organizations
Undertake structural and operational capacity building and retrofitting of the existing airports	Airports will progress towards disaster resilience	Long Term	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	100	AASA,	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental , non-governmental organizations
Undertake structural and operational capacity building and retrofitting of the existing Ports	Ports will progress towards disaster resilience	Long Term	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	1500	Port Authority, Fisheries Department	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental , non-governmental organizations

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<p>Increase investment for retrofitting of risky infrastructures (schools, hospitals, health posts, water supply structures, government and private buildings, historical and cultural heritages, hydropower houses, power sub-station, hydraulic structure etc.)</p>	<p>Risky infrastructures will be safe</p>	<p>Long Term</p>	<p>SDG-3 SDG-4 SDG-5 SDG-11 SDG-13</p>	<p>2500</p>	<p>Agencies maintain the schools, hospitals, health posts, water supply structures, government and private buildings, historical and cultural heritages, hydropower houses, power sub-station, hydraulic structure</p>	<p>Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental , non-governmental organizations</p>
<p>Encourage with the incentives of tax rebate, and low interest credit for retrofitting of risky private residence, hotel, shopping mall, business and industrial buildings</p>	<p>Private structures will be safe</p>	<p>Long Term</p>	<p>SDG-3 SDG-4 SDG-5 SDG-11 SDG-13</p>	<p>50</p>	<p>Local Government, UDA</p>	<p>Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental , non-governmental organizations</p>
<p>Construct the Government offices, community buildings, schools, hospitals and shelters friendly to children, elderly and disabled persons</p>	<p>Disaster Resilience of children, elderly and disabled persons will be</p>	<p>Long Term</p>	<p>SDG-3 SDG-4 SDG-5 SDG-11 SDG-13</p>	<p>2500</p>	<p>Building Department ,ICTDA, Ministry of Education,</p>	<p>Relevant subject Ministries and institutions, Provincial</p>

	increased				Ministry of Health, CECB	Council and Local Government
Promote alternative means of livelihood, flood resistant agricultural system, flood resistant food and seed storage etc.	Disaster resilience will be increased in the means of livelihood	Long Term	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	1000	Agriculture Department, Department of Livestock Development	Relevant subject Ministries and institutions, Provincial Council and Local Government
Promote climate smart agriculture	Climate risk will be reduced in agriculture	Long Term	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	2500	Agriculture Department	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental , non-governmental organizations
Promote bio engineering methods such as bio-dykes, afforestation, forest conservation, watershed protection etc. for flood and landslide risk reduction	Flood and landslide risk will be reduced through environment conservation	Long Term	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	2500	ID, MASL, Provincial ID, DAD, NBRO, Provincial and Local government	Relevant subject Ministries and institutions, Provincial Council and Local Government,

						UN, Inter-Governmental , non-governmental organizations
Pursue the structural measures for flood risk reduction (for example, embankment, reservoir, check-dam etc.)	Flood risk will be reduced through the structural measures	Long Term	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	2500	ID, MASL, Provincial ID, DAD	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental , non-governmental organizations
Pursue the structural measures for landslide risk reduction (for example, slope stabilization, geometry modification, surface erosion control, improved drainage etc.)	Landslide risk will be reduced through the structural measures	Long Term	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	2500	NBRO, GSMB, Provincial and Local Government , RDA	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental , non-governmental organizations

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Develop climate smart resilience villages and cities	Climate risk will be reduced in villages and cities	Long Term	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	2000	DMC, UDA, Local Government	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental , non-governmental organizations
Construct urban drainage system and improve the existing drainage system	Urban flood risk will be reduced	Long Term	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	2500	SLLRDC, ID, DMC	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental , non-governmental organizations
Strategy 3.2 Promoting Public Investment in Disaster Risk Reduction						
Make a provision to allocate minimum 2% of annual budget by all sectoral agencies for disaster Risk Management	Sector wise investment for disaster risk reduction will be ensured	Short Term	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	5	Ministry of Finance, NBD, NPD, CBSL	Relevant subject Ministries and institutions, Provincial

						Council and Local Government
Follow Gender Responsive Budgeting System while preparing the program and budget for disaster risk reduction at national and Local level	Gender equality in disaster risk reduction will be established following Gender Responsive Budgeting System	Short Term	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	10	Ministry of Finance, NBD, NPD, CBSL	Relevant subject Ministries and institutions, Provincial Council and Local Government
Establish a procedure to permit for budget transfer from the development projects to utilize in post disaster reconstruction	Investment for reconstruction will be available	Short Term	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	10	Ministry of Finance, NBD, NPD, CBSL	Relevant subject Ministries and institutions, Provincial Council and Local Government
Strategy 3.3 Promoting Private Investment in Disaster Risk Reduction						
Encourage to prepare and implement a business continuity plan for disaster resilience by small and medium entrepreneurs and industries	Private businesses will be operational during disaster due to preparation and implementation of business continuity plan	Short Term	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	10	Ministry of Commerce and Industries, Chamber of Commerce, Local Government	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental , non-

						governmental organizations
Encourage the tax rebating as an incentive to promote resource mobilization by private sectors in disaster risk reduction activities	Private investment will be available for disaster risk reduction in infrastructure	Short Term	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	10	Inland Revenue Department, Local Government, Chamber of Commerce	Relevant subject Ministries and institutions, Provincial Council and Local Government
Develop and promote alternative and Innovative Financial Instruments, for example, Forecast Based risk Financing, micro investment, micro credit, insurance, reinsurance etc. for disaster Risk reduction	Relief Assistance Votes will be mobilized based on the scientific data. In addition, involvement of the private sector in disaster Risk reduction will be increased	Short Term	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	10	Ministry of Finance, CBSL Banks and Insurance and Finance Institutions	Relevant subject Ministries and institutions, Provincial Council and Local Government
Establish an arrangement of Microfinance, interest free loan, conditional cash transfer etc. for disaster affected individual and community	Disaster recovery of disaster affected individual and community will be enhanced	Short Term	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	10	Ministry of Finance, CBSL Banks and Insurance and Finance Institutions	Relevant subject Ministries and institutions, Provincial Council and Local Government
Increase private investment in Post Disaster Recovery and Reconstruction through the program of Corporate Social Responsibility	Private investment will be increased in Recovery and Reconstruction	Medium Term	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	10	Private Sector, DMC	Relevant subject Ministries and institutions, Provincial Council and

						Local Government
Promote joint public private investment in disaster risk reduction preparing National Disaster Risk Investment and Insurance Strategy	Private investment will be available in Disaster Risk Reduction	Medium Term	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	10	Banks and Insurance and Finance Institutions, Private Sector, DMC	Relevant subject Ministries and institutions, Provincial Council and Local Government
Make easy arrangement for investment in Disaster Risk Reduction by the Bank, Cooperatives and community based organizations	Disaster Risk and Loss will be reduced	Medium Term	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	10	Ministry of Finance, CBSL Banks and Insurance and Finance Institutions	Relevant subject Ministries and institutions, Provincial Council and Local Government
Mobilize bilateral, multi-lateral and international resources for reconstruction of important infrastructures and heritage buildings	International resources and investment will be available for reconstruction of important infrastructures and heritage buildings	Long Term	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	10	Cultural Department, Archaeology Department, DMC	Relevant subject Ministries and institutions, Provincial Council and Local Government
Strategy 3.4 Increasing Disaster Resilience through Risk Transfer, Insurance and Social Security						
Arrange a provision for life insurance of the disaster vulnerable groups and individual and communities involved in Disaster Risk Management	Disaster resilience of the disaster vulnerable groups and individual	Short Term	SDG-3 SDG-4 SDG-5 SDG-11	10	Ministry of Finance, CBSL Banks and	Relevant subject Ministries and institutions,

	and communities involved in Disaster Risk Management		SDG-13		Insurance and Finance Institutions	Provincial Council and Local Government
Review the existing practice of risk sharing/risk financing in Agriculture and Livestock Insurance	Appropriate Insurance system will be identified for agriculture and livestock in Sri Lanka	Short Term	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	15	Ministry of Finance, CBSL Banks and Insurance and Finance Institutions	Relevant subject Ministries and institutions, Provincial Council and Local Government
Establish agriculture insurance, farmer's benefit program and food and seeds storages to address increasing disaster (Flood, Drought) risks in agriculture and the challenge of food insecurity	Disaster resilience in agriculture sector will be increased	Short Term	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	10	Ministry of Finance, CBSL Banks and Insurance and Finance Institutions AIB,	Relevant subject Ministries and institutions, Provincial Council and Local Government
Develop and implement the plans for community based, contribution based, micro insurance, livestock insurance, farming insurance, Farmer's reserved fund, risk grouping	Community based various forms of Disaster Risk Insurance plan will be available	Medium Term	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	25	Ministry of Finance, CBSL Banks and Insurance and Finance Institutions	Relevant subject Ministries and institutions, Provincial Council and Local Government
Promote Public-private partnership to attract participation and investment of private sector in Disaster Risk Insurance, Risk sharing programs (e.g. Micro Insurance, emergency fund, low interest credit plan)	Policy provision for public-private partnership in risk sharing will be implemented	Medium Term	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	25	Ministry of Finance, CBSL Banks and Insurance and	Relevant subject Ministries and institutions, Provincial

					Finance Institutions	Council and Local Government
Expand contribution based insurance system to protect means of livelihood, skill, equipment and investment from disaster	Disaster resilience of means of livelihood will be increased through insurance	Medium Term	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	25	Ministry of Finance, CBSL Banks and Insurance and Finance Institutions	Relevant subject Ministries and institutions, Provincial Council and Local Government
Make a provision for disaster affected families living below the poverty line to activate insurance benefit automatically if impacted by the disaster by developing an integrated record system of poor, landless, and deprived families	Disaster resilience of the families living below the poverty line will be increased through insurance	Medium Term	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	25	Ministry of Finance, CBSL Banks and Insurance and Finance Institutions	Relevant subject Ministries and institutions, Provincial Council and Local Government
Review the accessibility and benefit status of the various programs of social security of targeted group, community, and geographical areas and link these programs to disaster resilience	Disaster resilience will be increased through social security program	Medium Term	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	25	Ministry of Finance, CBSL Banks and Insurance and Finance Institutions, NDRSC	Relevant subject Ministries and institutions, Provincial Council and Local Government
Promote disaster insurance for public buildings, schools, hospitals, and critical infrastructures (hydraulic structure, heritage buildings, bridges, water supply and sanitation system, hydropower structure,	Disaster risk insurance will be effective	Long Term	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	10	Ministry of Finance, CBSL Banks and Insurance and	Relevant subject Ministries and institutions, Provincial Council and

canals transmission line, sub-station, and airport) and review existing relevant insurance policies					Finance Institutions,	Local Government
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Priority Area 4: Enhancing Disaster Preparedness for, Effective Response and to “Build Back Better” in Recovery, Rehabilitation and Reconstruction

Enhancing Disaster Preparedness for, Effective Response and to “Build Back Better” in Recovery, Rehabilitation and Reconstruction area covers residual risk management.

The preparedness mainly consists of disaster risk forecasting, early warning system, emergency preparedness plan, collection and storage of emergency items, safe evacuation, and – mock drills. Response covers the activities of disaster emergency service and assistance during or immediately after the disaster. Saving human life and preventing the additional physical loss are the priority actions of this stage. Search, rescue, relief, emergency health services, temporary shelter, safe drinking water and sanitation, and arrangement of food are the other priority activities of this stage.

After the completion of emergency phase, the recovery activities such as improvement and normalization of disaster affected services and facilities, income generation and other livelihood activities need to be pursued. Programmes to incorporate “Build Back Better” in rehabilitation and reconstruction also begins in this phase with the activities such as awareness raising, planning, institutional strengthening and coordination.

Covering the above aspects, following strategies are formulated to ensure effective and efficient response and the fast and better recovery.

Strategy 4.1; Strengthening Disaster Preparedness for Effective Disaster Response

Strategy 4.2; Development of impact based Multi-Hazard Early Warning System for Disaster Preparedness

Strategy 4.3; Strengthening Communication and Dissemination for Disaster Preparedness

Strategy 4.4; Enhance Community Based Disaster Risk Reduction at local level

Strategy 4.5; Capacity Building for Emergency response , Search and Rescue

Strategy 4.6; Promoting “Build Back Better” Approach for Recovery, Rehabilitation and Reconstruction

Strategic Activity	Expected Outcome	Time Frame	Relevant SDG target/s	Indicative Budget (LKR Mn)	Lead Agency	Other Key Agencies
Strategy 4.1; Strengthening Disaster Preparedness for Effective Disaster Response						
Develop and implement Integrated National Disaster Response System	Disaster response will be uniform in nation wide	Short Term	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	50	DMC, Tri Forces & Police	Relevant subject Ministries and institutions, Provincial Council and Local Government
Update National Disaster Response Framework and District/ Divisional Disaster Preparedness and Response Plan for forecast based emergency preparedness and response	Standard operating procedures will be updated for Forecast based Emergency Preparedness and Response	Short Term	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	150	Ministry of Home Affairs District and Divisional Secretariats Department of ID and Meteorology	Relevant subject Ministries and institutions, Provincial Council and Local Government
Identify the evacuation route and the area of assembly in each public, government, and corporate buildings and mark and demarcate evacuation routes and assembly areas	Public buildings and areas will be prepared for disaster response	Short Term	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	25	DMC , District and Divisional Secretariats	Relevant subject Ministries and institutions, Provincial Council and Local Government
Strengthen disaster preparedness at airports and practice simulations and mock drills regularly on "Get Airports Ready for Disaster"	Airports will be ready for emergency response	Short Term	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	5	Ministry of Aviation	Relevant subject Ministries and institutions, Provincial Council

						and Local Government, UN, Inter-Governmental , non- governmental organizations
Establish adequate safety centers with basic infrastructures at the local level	Safer places will be available for shelter during disaster at the local level	Short Term	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	2500	NDRSC, DMC , District and Divisional Secretariats	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental , non- governmental organizations
Establish the logistics facilities including the emergency communication system at districts divisional and local level	The response will be effective at the province level by establishing the facilities	Short Term	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	1000	DMC , District and Divisional Secretariats	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental , non- governmental organizations
Develop infrastructure and other structures including essential communication facilities and accommodation in various touristic	Disaster risk will be reduced in touristic destinations by arranging the communication facilities and	Short Term	SDG-3 SDG-4 SDG-5 SDG-11	1500	SLTDA, DMC,	Relevant subject Ministries and institutions,

destinations of the country to reduce disaster risk	accommodation		SDG-13			Provincial Council and Local Government, UN, Inter-Governmental , non- governmental organizations
Establish Trauma Care Centers in major cities	Adequate facilities will be available for the treatment of wounded	Short Term	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	25	Department Health, Social Service Department, DMC	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental , non- governmental organizations
Establish storage or warehouses for food, water, medicine, and other relief materials and rescue equipment at national districts, divisional and Local Level	Storage houses for relief and rescue materials will be available in disaster sensitive places	Short Term	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	2500	NDRSC, DMC , District and Divisional Secretariats	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental , non- governmental organizations
Strategy 4.2; Development of impact based Multi-Hazard Early Warning System for Disaster Preparedness						

Update and upgrade the existing operational hydro-meteorological and impact based early warning systems	Existing early warning systems will be improved	Continuous	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	1500	DMC, ID, Meteorological Department, NBRO, Technical Agencies	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental , non- governmental organizations
Produce and disseminate Impact based early warning information by analyzing and forecasting data of major hazards and vulnerabilities	Impact based Early warning information will be produced and disseminated	Continuous	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	500	DMC, ID, Meteorological Department, NBRO, Technical Agencies	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental , non- governmental organizations
Place essential signs and equipment for early warning system in potential high risk areas	Essential signs and equipment will be in place for early warning in potential high risk areas	Continuous	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	100	DMC , District and Divisional Secretariats, Local Government	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental ,

						non- governmental organizations
Conduct awareness raising and training programs for vulnerable communities on the steps to be followed after receiving the early warnings for different hazards	Appropriate activities will be ensured to be taken after getting early warning information	Short Term	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	100	DMC , District and Divisional Secretariats, Local Government	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental , non- governmental organizations
Prepare Standard Operating Procedure to guide the operation of early warning system and the process of early warning information dissemination between different organizations involved in disaster Management	Standard operating procedure will be available for operating early warning system	Short Term	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	100	DMC , District and Divisional Secretariats, Local Government	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental , non- governmental organizations
Ensure the access, representation and effective participation of women, children, elderly persons, disabled people, and vulnerable community in early warning, system	Early warning system will be inclusive	Short Term	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	10	DMC , District and Divisional Secretariats, Local Government	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-

						Governmental , non- governmental organizations
Utilize knowledge, skills, experience and traditional practices of senior citizens and indigenous people in early warning system	Indigenous knowledge and experience will be included in early warning system	Short Term	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	10	DMC , District and Divisional Secretariats, Local Government	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental , non- governmental organizations
Incorporate Early Warning mechanism in educational curriculum related to Disaster Risk Management	There will be study and teaching on Early Warning System	Medium Term	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	20	DMC ,Ministry of Education, Provincial Ministries of Education District and Divisional Secretariats, Local Government	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental , non- governmental organizations
Develop and install smoke detector and fire alarm in all public buildings, schools, hospitals, and important infrastructures at the national and Local level,	Loss due to fire disaster will be reduced with Fire Early Warning System	Medium Term	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	500	Ministry of Education, Health Department, Provincial Education	Relevant subject Ministries and institutions, Provincial Council and Local Government,

					Ministries, Building Departments, CECB	
Develop information materials (book, brochure, notice, electronic message etc.) on early warning system for vulnerable target communities (women, children, elderly persons disabled people, indigenous, deprived)	Targeted groups will be well informed about early warning system	Medium Term	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	100	DMC, Women & Child Protection Authority, Media,	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental , non- governmental organizations
Conduct awareness programs on Early Warning System by workshops, meetings and mass media	Awareness will be increased on Early Warning System	Medium Term	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	100	DMC, Media	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental , non- governmental organizations
Conduct regular tests and exercises regarding the effectiveness of Early Warning Dissemination and Response	Effectiveness of early warning dissemination and response will be tested	Medium Term	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	100	DMC, Stakeholder Agencies	Relevant subject Ministries and institutions, Provincial Council and Local

						Government, UN, Inter-Governmental, non-governmental organizations
Extend existing community based flood Early Warning System to other river basins and establish an operational Early Warning System for the major hazards like landslide, drought, lightning, high wind, heat wave, fire, and epidemics etc.	Disaster loss will be reduced due to early actions based on early warning for major hazards	Medium Term	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	500	DMC, ID, NBRO, Met Department, etc	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental, non-governmental organizations
Build up capacity on weather, drought and flood forecast	The lead time and reliability of flood and weather forecasts will be increased	Long Term	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	50	DMC, ID, NBRO, Met Department, etc	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental, non-governmental organizations
Conduct research on the application of physical and Mathematical models to understand and forecast natural hazards	Hazard forecasting capacity will be increased	Long Term	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	500	DMC, ID, NBRO, Met Department, Universities,	Relevant subject Ministries and institutions, Provincial Council

					Academic and Research Institution	and Local Government, UN, Inter-Governmental , non- governmental organizations
Strategy 4.3; Strengthening Communication and Dissemination for Disaster Preparedness						
Establish community information centers for risk communication	Community will be informed about disaster risk	Short Term	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	100	DMC	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental , non- governmental organizations
Develop institutional, policy and programmatic partnership to link mass communication and modern information technology (printing, radio, television, social network, SMS, mobile phone) with disaster risk awareness raising and Early Warning System	Mass communication and modern information technology will be used effectively in disaster risk information and early warning system	Short Term	SDG-3 SDG-4 SDG-5 SDG-11 SDG-13	250	DMC, Media	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental , non- governmental organizations

Trail Communication and dissemination procedure (e.g. Radio, TV, Phone, SMS, siren, shouting, messenger, flag raising etc.) as per the need and suitability of the local community	There will be effective communication and dissemination at local level	Short Term	SDG-3 SDG-4 SDG-5 SDG-11	500	DMC, Media	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental , non- governmental organizations
Follow special type of communication and information dissemination procedure for vulnerable groups (Illiterate, blind, deaf)	Access of vulnerable groups will be increased in disaster information	Short Term	SDG-3 SDG-4 SDG-5 SDG-11	150	DMC, Media, Social Service Department	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental , non- governmental organizations
Use and promote mass modern science and technology (Web portal, Mobile Apps, SMS CB) to improve the effectiveness of communication and dissemination system for Disaster Preparedness and Reponses	Improved communication and dissemination system will be available and used	Medium Term	SDG-3 SDG-4 SDG-5 SDG-11	100	DMC, Service Providers, Media, District, Divisional Secretariat, Local Government	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental ,

						non- governmental organizations
Establish a Disaster damage and loss assessment Web Portal	Information on disaster risk and loss will be available through web portal	Medium Term	SDG-3 SDG-4 SDG-5 SDG-11	10	DMC	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental , non- governmental organizations
Develop rapid assessment system for recovery need assessment applying modern information technology	The information on disaster loss will be Available immediately	Medium Term	SDG-3 SDG-4 SDG-5 SDG-11	50	DMC	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental , non- governmental organizations
Strategy 4.4; Enhance Community Based Disaster Risk Reduction at local level						
Strengthen existing Community based Disaster Risk Management System	The communities will be empowered in disaster risk reduction	Short Term	SDG-3 SDG-4 SDG-5 SDG-11	100	DMC, District, Divisional Secretariat, Local Government	Relevant subject Ministries and institutions, Provincial Council and Local

						Government, UN, Inter-Governmental, non-governmental organizations
Establish, expand and network the community based organizations for Disaster Risk Management	Disaster Risk reduction and Management will be effective by establishing, expanding, and networking the community based organizations at the local level	Short Term	SDG-3 SDG-4 SDG-5 SDG-11	50	DMC, District, Divisional Secretariat, Local Government	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental, non-governmental organizations
Established disaster response, and search and rescue teams at local level	Local level search and rescue works will be effective	Short Term	SDG-4 SDG-5 SDG-11	100	DMC, Tri Forces, Police District, Divisional Secretariat, Local Government	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental, non-governmental organizations
Develop and enforce guidelines for collaboration between District/Divisional/local authority and non-governmental	Local concerns and interest in disaster risk reduction and management will be addressed in partnership between	Medium Term	SDG-4 SDG-5 SDG-11	10	DMC, District, Divisional Secretariat,	Relevant subject Ministries and institutions, Provincial Council

organizations to promote partnership between community based groups (Locality/ Development Organization, Ward Citizen Forums, Citizen Awareness Centers, Mother's Groups, Youth Club, Child Club)	the local authority, and local community based and non-governmental organizations				Local Government	and Local Government, UN, Inter-Governmental , non- governmental organizations
Develop community based early warning system for each hazard at local level	Disaster loss will be reduced by strengthening preparedness through the community based early warning system	Medium Term	SDG-3 SDG-4 SDG-5 SDG-11	20	DMC, District, Divisional Secretariat, Local Government	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental , non- governmental organizations
Develop the mechanism of community based trained, formerly practiced first responders volunteers and build their capacity	Trained first responders volunteers will be available in the community	Medium Term	SDG-4 SDG-5 SDG-11	100	DMC, District, Divisional Secretariat, Local Government	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental , non- governmental organizations

Prepare Monitoring and Evaluation Plan and Procedure at the local level	Accountability will be established at local level in Disaster Risk Management	Medium Term	SDG-4 SDG-5 SDG-11	10	NCDM, DMC, Auditor General Department	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental , non- governmental organizations
Strategy 4.5; Capacity Building for Emergency response , Search and Rescue						
Build capacity of emergency operating centers at national and district level	The capacity of the Emergency Operation Centers will be developed	Short Term	SDG-4 SDG-5 SDG-11	100	DMC, Tri Forces, Police District, Divisional Secretariat, Local Government	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental , non- governmental organizations
Conduct a pre-monsoon disaster preparedness workshop and post monsoon review workshop every year with participation of all stakeholders	Disaster preparedness and responses will be tested	Short Term	SDG-4 SDG-5 SDG-11	50	DMC, District, Divisional Secretariat, Local Government	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-

						Governmental , non- governmental organizations
Pursue one-stop system to check duplication in relief collection and mobilization	Disaster responses will be uniform and transparent and duplication will be avoided	Short Term	SDG-4 SDG-5 SDG-11 SDG-12	10	NDRSC, DMC, Tri Forces, Police District, Divisional Secretariat, Local Government	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter- Governmental , non- governmental organizations
Trained First Responders at GN level	Trained First Responders team will be prepared at GN level	Short Term	SDG-4 SDG-5 SDG-11	100	DMC, Tri Forces, Police District, Divisional Secretariat, Local Government	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter- Governmental , non- governmental organizations
Develop a network of ambulance services based	Ambulance services will be easily available during disaster	Short Term	SDG-4 SDG-5 SDG-11	10	DMC, Tri Forces, Police department of Health, 119 service	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN,

						Inter-Governmental , non- governmental organizations
Provide training to each level of health workers (primary, secondary, and high) for skill development in treatment of disaster victims	The capacity of health workers will be increased in treatment of road	Short Term	SDG-4 SDG-5 SDG-11	100	Department of Health	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental , non- governmental organizations
Enhance the capacity of Search and Rescue team at local level	Search and Rescue teams of local level will be capable	Short Term	SDG-4 SDG-5 SDG-11	100	DMC, Tri Forces, Police	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental , non- governmental organizations
Establish Search and Rescue Team and provide necessary equipment and manpower to the national district divisional and local level units of Armed force and Police	Armed Force, and Sri Lanka Police will be capable of search and rescue	Short Term	SDG-4 SDG-5 SDG-11	1000	DMC, Tri Forces, Police	Relevant subject Ministries and institutions, Provincial Council and Local

						Government, UN, Inter-Governmental, non-governmental organizations
Build capacity of Search and Rescue teams of tri forces and police	tri forces and police will be capable for search and rescue	Short Term	SDG-4 SDG-5 SDG-11	25	DMC, Tri Forces, Police	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental, non-governmental organizations
Establish unified command of search and rescue teams and develop it as per the standard of International Search and Rescue Advisory Group	Unified command of search and rescue will be established	Short Term	SDG-5 SDG-10 SDG-11	50	DMC, Tri Forces, Police	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental, non-governmental organizations
Follow Core Humanitarian Standard in assisting disaster affected individuals and community	Humanitarian assistance will be of high quality	Short Term	SDG-5 SDG-10 SDG-11	20	NDRSC, DMC, Tri Forces, Police	Relevant subject Ministries and institutions, Provincial Council

						and Local Government, UN, Inter-Governmental , non- governmental organizations
Ensure increase in the preference and accessibility of vulnerable and deprived class in post-disaster relief, rescue and rehabilitation services provided by Government and Non-governmental sectors	The deprived class will have access in relief, rescue and rehabilitation services	Short Term	SDG-3 SDG-10	1000	NDRSC, DMC, Tri Forces, Police	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental , non- governmental organizations
Practice mock drills regularly at different levels (National, Districts, Divisional , Local, Community) and sectors (School, hospital) for effective preparedness and response	With the practice of mock drills preparedness and response will be effective	Short Term	SDG-4 SDG-5	100	DMC, Tri Forces, Police Districts, Divisional , Local, Community, Ministry of Education and health,	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental , non- governmental organizations
Establish an integrated fire control group and build its capacity through resource, means and training	Fire control capacity will be increased	Short Term	SDG-4, SDG-11	100	DMC, Tri Forces, Police Fire Department,	Relevant subject Ministries and institutions,

					Local Government	Provincial Council and Local Government, UN, Inter-Governmental , non- governmental organizations
Develop trained, and skilled human resource to promote the post disaster turma counseling and mentalhealth	Skilled human resource will be available for the promotion of turma counseling and mental health	Medium Term	SDG-3	50	DMC, Ministry of Edu Health, Department of Social Services	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental , non- governmental organizations
Develop capacity of the community Organizations (Child Club, Youth Club, Mothers Group, Senior Citizen Forum, Citizens Concern Center, Forest Users Group etc.) for disaster preparedness and response	Disaster response capacity of community organizations will be developed	Long Term	SDG-5, SDG-10,SDG-11	50	DMC, Tri Forces, Police Social Service Department, District, Divisional Secretariat, Local Government	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental , non- governmental organizations
Strategy 4.6; Promoting “Build Back Better” Approach for Recovery, Rehabilitation and Reconstruction						

Prepare and enforce resettlement guidelines for resettlement and rehabilitation of infrastructure of disaster affected families	Resettlement and rehabilitation of infrastructure will be implemented by preparing guidelines	Short Term	SDG-11	1500	NDRSC, DMC District, Divisional Secretariat, Local Government	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental , non- governmental organizations
Resettle the internally displaced people at low risk areas	Resettled areas will be safe from disaster risk	Medium Term	SDG-11	3500	NDRSC, DMC District, Divisional Secretariat, Local Government	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental , non- governmental organizations
Relocate settlements of high risk areas to the low risk areas	Settlements of high risk areas will be safe from disaster risk	Long Term	SDG-11	2500	NDRSC, DMC District, Divisional Secretariat, Local Government	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental ,

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						non- governmental organizations
Develop integrated settlements with planning of physical infrastructures in reconstruction	Reconstruction will be better with the development of planned settlements	Long Term	SDG-9 SDG-11	3000	DMC ,District, Divisional Secretariat, Local Government	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter- Governmental , non- governmental organizations
Prepare Guidelines on“Build Back Better” in Recovery, Rehabilitation, and Reconstruction	Guidelines on “ Build Back Better “ will be available	Short Term	SDG-9 SDG-11	2	DMC ,Institutions responsible for infrastructure development and utility service providers	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter- Governmental , non- governmental organizations
Incorporate disaster riskreduction activities in recovery, rehabilitation and reconstruction	Future disaster risks will be reduced	Short Term	SDG-9 SDG-11	5	DMC ,Institutions responsible for infrastructure development and utility	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-

					service providers	Governmental , non- governmental organizations
Develop and utilize local resources, means, labor, technology, knowledge and skill in rehabilitation and reconstruction	Rehabilitation and reconstruction will be economical and sustainable	Short Term	SDG-9 SDG-11	2	Institutions responsible for infrastructure development and utility service providers	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental , non- governmental organizations
Develop policy and institutional structure to make reconstruction works disaster resilience	Policy and institutional arrangement will be made to build reconstruction better	Short Term	SDG-9 SDG-11	2	DMC ,Institutions responsible for infrastructure development and utility service providers	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental , non- governmental organizations
Develop Post Disaster Response and recovery policy and Framework	Post-disaster recovery policy and framework will be effective	Short Term	SDG-9 SDG-11	5	DMC	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN,

						Inter-Governmental , non- governmental organizations
Address special needs of women, children, elderly and disabled people in reconstruction and renovation of physical infrastructure such as retirement home, orphanage, and community building at disaster affected areas	physical infrastructure such as retirement home, orphanage, and community building will be friendly to women, children, elderly and disabled people	Short Term	SDG-5 SDG-10 SDG-11	10	DMC ,Child Development Authority ,Institutions responsible for infrastructure development	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental , non- governmental organizations
Develop and distribute Training Manual, Information, Education, and Communication materials on building construction, retrofitting, and renovation	Training materials on building construction, retrofitting, and renovation will be developed and distributed	Medium Term	SDG-4 SDG-5 SDG-8 SDG-11	10	DMC, Education Department, Universities, Technical Collages , etc	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental , non- governmental organizations
Promote research and development of construction technology, materials, infrastructure design, and management for “Build Back Better” in disaster risk reduction and reconstruction and climate change adaptation	With development of improved technology, the reconstruction will be better and stronger	Medium Term	SDG-4 SDG-5 SDG-8 SDG-11	50	DMC, NSF, Education Department, Universities,	Relevant subject Ministries and institutions, Provincial Council and Local

					Research institute , etc	Government, UN, Inter-Governmental , non- governmental organizations
Build capacity of Engineer, builders, carpenters, mason, contractors and suppliers through training and awareness raising program for disaster resistant and better reconstruction	Capacity for “build back better” in reconstruction will be developed	Medium Term	SDG-4 SDG-5 SDG-8 SDG-11	50	Education Department, Universities, Technical Collages , Engineering Institutes etc	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental , non- governmental organizations
Prepare and conduct awareness raising programs on disaster resistant construction procedures and disaster risk reduction through national and local level radio, TV, Print and online media	Awareness level will be increased on disaster resistant construction procedures and disaster risk reduction	Medium Term	SDG-4 SDG-5 SDG-8 SDG-11	50	DMC, Education Department, Media	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter-Governmental , non- governmental organizations
Pursue flood, landslide and other natural disaster resistant construction procedures in Reconstruction	Structures will be resistant to natural disasters	Medium Term	SDG-4 SDG-5 SDG-8 SDG-11	50	DMC,ID, NBRO Universities, Technical	Relevant subject Ministries and institutions, Provincial Council

					Collages , Enginerring institute etc	and Local Government, UN, Inter- Governmental , non- governmental organizations
Pursue the principle of green development and “build back better” in reconstruction	Reconstructed structures will be stronger and environment friendly	Medium Term	SDG-4 SDG-5 SDG-8 SDG-11	50	DMC, Universities, Technical Collages , Enginerring institute etc	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter- Governmental , non- governmental organizations
Make arrangement of joint monitoring system to ensure upholding building code and use of qualitative construction materials in infrastructure and building reconstruction	Reconstructed structures will be stronger	Medium Term	SDG-4 SDG-5 SDG-8 SDG-11	50	DMC, CIDA, Universities, Technical Collages , Enginerring institute etc	Relevant subject Ministries and institutions, Provincial Council and Local Government, UN, Inter- Governmental , non- governmental organizations

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8. Implementation ,Financial Arrangement and Monitoring & Evaluation

Success of the NDMP (2022-2030) will depend on the adaptation of effective and efficient arrangement for the implementation, monitoring and evaluation. The proposed mechanism under Road map as well as SLCDMP has not been executed.

As per the National Disaster Management Act No 13; 2005 after completion of the NDMP (2021-2030), continuous advocacy campaign needs to be conducted for its sound implementation ensuring the participatory approach of all the stakeholders. Analysis of the implementation and progress of the previous plan implementation depict that either advocacy or monitoring and evaluation of the plan implementation has not been done adequately.

With the technical support of the DMC the MPA& DM will take the overall responsibility of the implementation NDMP (2022-2030) by coordinating all other relevant ministries and stakeholder agencies under the guidance of NCDM.

8.1. Implementation Arrangement

Implementation of NPDM 2021-2030 is allied with national laws, rules, regulations, strategies, polices, and mandates under different sectors in the country. As per the National Disaster Management Act no 13; 2005 advocacy and the implementation of NDMP is liaised with the NCDM. As the implementing arm of NCDM, DMC is the key agency responsible to coordinate all related bodies for DM such as ministries, departments, academia, international donor agencies, NGOs and the private sector under the directives and supervision of subject Ministry of DM.

Since DRM is cross cutting issue coherence among SDGs, Paris Agreement is significant in the plan implementation phase. Therefore, policy formulating and plan implementing under different sectoral ministries essentially deal with the issues of DRR and CCA and development within the sectoral laws, policies, plans, projects and programs. Hence a collaborative mechanism should be in place to coordinate the actions taken under DRR and CCA to achieve the sustainable development goals. Therefore, ensuring the adequate engagement of National Planning Department (NPD) would be a significant advantage for the plan implementation.

A steering committee for NDMP (2022-2030) will consist of representatives from ministries, state sector agencies and others as required. The steering committee will meet on a quarterly basis chaired by the Secretary, of subject Ministry of DM.

Using the provision given under the National DM Act technical advisory committees will established to provide the technical inputs to the of subject Ministry of DM which bare the overall responsibility of the success of NDMP (2022-2030).

All the government, non-government agencies and private sector must work together in a coordinated manner to ensure that their combined efforts are directed towards the common goal of the NDMP.

Close working relationships and partnership development are needed among bodies responsible for preventive, mitigation, response and rehabilitation and recovery programs to ensure that risk reduction measures are introduced in the immediate post-disaster situation and to enhance future preparedness.

Line Ministries will be encouraged to develop appropriate project proposals to be submitted to potential donor agencies for funding.

Relationships are crucial among national, regional, district and community levels to facilitate implementation and ensure effective vertical communication with, for example, information flowing up and resources flowing down.

of subject Ministry of DM is responsible to encourage the GoSL, particularly Ministry of Foreign Affairs to get the fullest corporation of the international community through bilateral agreements, knowledge exchange programme etc. Further, GoSL will encourage the participation of the private sector and non-governmental organizations in DRM. Government will also emphasize the importance of resilience and the benefits that can be derived from participating in disaster risk reduction activities.

8.2. Resources Mobilization

Total estimated cost of implementing 10-year programme as proposed in the NDMP will amounts to LKR 68627 Mn. Mobilization of necessary resources for the implementation of the NDMP (2022-2026) by relevant government departments is the most important task. Financial and physical resources required for the implementation of NDMP (2021-2024) will be manage adhere to the government financial policies, rules and regulations based on the good governance principles.

Further, harmony among all political parties is crucial to ensure implementation of NDMP (2022-2026) as it is essential for the resource mobilization, donor support through national budgets etc. Ministries, Departments and local governments will be encouraged to allocate appropriate resources within their budget for the implementation of the priority action in DRM and additional financial assistance for DRM activities from the National budget.

External Resources Department of the Ministry of Finance will coordinate and manage international support of the NDMP (2022-2026). This will ensure greater donor alignment and harmonization with priorities identified under NDMP (2022-2026) as well as development agenda of the government.

8.3. Monitoring & Evaluation

A system is to be developed for periodic review of the plan at different levels and prepare the progress monitoring report. Periodic Reporting should be coordinated by DMC under the guidance of State Ministry of National Security and Disaster Management. It is also required to review the allocations for implementation of the plan by all relevant ministries and departments along with the objectives of NDMP (2022-2026). Key performance Indicator (KPI) will be developed jointly by the partners of the NDMP (2022-2026) at its advocacy phase.

DMC will facilitate to collate analyses and share the national level progress of NDMP (2022-2026) to the subject Ministry of DM. Once the areas of interests are identified by non-government organizations, they will enter into an agreement or sign a memorandum of understanding with the relevant line agency responsible for the particular area within the NDMP (2022-2026), and the line agency and the non-government partner will monitor activities jointly. The progress of the work will be summarized by the DMC along with other activities to the subject Ministry of DM.

The overall progress, level of implantation, gaps and limitations will be regularly reviewed by the steering committee and report to either the NCDM or the Cabinet of Ministers by the subject Ministry of DM.

After familiarising with the SFDRR monitoring system and the NDMP (2021-2030) the formats and the online monitoring system developed under the SLCDMP is proposed to use for the monitoring of NDMP (2021-2030).

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Annexure

Annex A: Disaster Situation in Sri Lanka and Present Hazard Trends

The more significant hazards experienced are floods, cyclones/high winds, drought, landslides and lightning. Tsunami experienced recently is a rare event with devastating consequences. Most of the major disasters are due to the impacts of extreme weather conditions. Excessive rainfall due to upper atmospheric disturbances or low-pressure systems results in severe flooding and landslides. On the other hand, severe drought conditions as a result of deficit rainfall and poor water management practices result in lower crop yield and power shortages.

Main Hazards

Disasters caused by natural, technological and human induced hazards are rapidly and intensively increasing; significantly hampering the progress towards the sustainable development; generating new risks; increase of disaster related losses that have an economic, social, health, cultural and environmental impact.

Flood

Floods are probably the most recurring, widespread, disastrous and frequent natural hazards of Sri Lanka. The negative impacts of flooding are not only count on the loss of life, loss of agriculture production and damage infrastructure. It also could cause other indirect impacts to environment and socio-economic of the affected area.

Irrigation Department of Sri Lanka has prepared inundation area maps at 1:50,000 scale for nine (9) river basins covering specific flood events. The river basins are Kelani, Kalu, Nilwala, Gin, Mahaweli, Attanagalu Oya, Deduru Oya, Yan Oya and MalwathuOya.

Apart from that, since 2010, major flood events have been mapped By DMC using the satellite images. These maps only show the spatial distribution of floods but other basic information such as flood height, river discharge data, return period etc., which support planning as well as development decision making process, have not been incorporated. Climate Change Resilience Improvement Project (CRIP) being implemented under the Ministry of Irrigation and Water Resources has undertaken preparation of basin investment plans for flood and drought mitigation in 10 river basins which are mostly affected by floods. In addition under the same project full feasibility study and detail designs have been started for flood risk mitigation interventions for Batticaloa district with special focus on Mundeni Afru river basin. Under these studies flood modelling is being used for identification of effective flood mitigation solutions²³.

Impact of floods analysed using the historical disaster information collected by DMC since 1974 recorded maximum no of people affected by floods in Batticaloa and Ampara districts, experiencing

²³ Climate Resilient Improvement Project funded by World Bank.

the North-east monsoon rain, followed by Colombo, Gampha, Kalutara, Ratnapura, Galle, Matara and Puttalam districts. However maximum number of life losses were reported from Kalutara, Matara, Rathnapura, Galle, Gampaha and Hambantota districts. Further it was observed that on average 1191 houses were destroyed and 5207 houses were damaged due to floods annually. National Policy on Housing predict that the number of families need to be assisted annually to improve their houses will be about 45,800 and the number of new housing required will be about 22,500. If disaster risk reduction measures are not incorporated in housing development 5% more houses will have to be newly built and 11% of houses have to be rehabilitated annually due to flood impacts.

	1998-2004	2009-2015	Increase %
Population	18,797,257	20,319,439	+8
Number affected by floods	3,030,348	4,370,001	+44

Comparison of number of people affected by floods against population increase

The number of affected population by flood has drastically been increasing, in comparison to the general population growth²⁴.

Although the temporal distribution of flood impacts does not indicate any clear trend in life losses and affected people compared to flood caused by very high intensity rain fall in Rathnaputra district reduction of life losses were noted up to 2017. Further number of people affected also shows decreasing trend. However experience shows that the life losses and number of people affected mainly depend on the intensity of rainfall and preparedness of people to respond to such disasters.

In 2018 National Disaster Relief Services Centre provided Rs 186,344,342 to District Secretaries in 24 districts as flood relief. Funds have been used to provide food and essential non-food items in relief centres and cleaning of houses, wells and septic tanks after floods. Gampaha, Kurunegala, Jaffna, Puttalam and Rathnepura districts received bulk of the relief. Government shall focus on investing on project to reducing the flood hazard size and number of people effected due to floods to reduce the burden of the government in providing relief continuously.

Drought

The impacts of drought as one of the frequent disasters are greater than the impacts of any other natural hazard in Sri Lanka. Sri Lankans experience three types of droughts such as;

- (i) permanent droughts associated with dry climates;
- (ii) Seasonal droughts where there are well-defined periods of dry weather; and
- (iii) Droughts because of precipitation variability.

They are estimated to be Rs. Three hundred million annual loss due to drought in the country occurs primarily in agriculture, transportation, recreation and tourism, forestry, and energy sectors[1]. Social,

²⁴ Road Map for DRR (MDM&JICA2017)

economic and environmental impacts are also significant, although it is difficult to put a precise cost on social and ecological effects. The majority of the labour force engaged in Sri Lanka is in the agriculture sector, and any damages and losses in agriculture directly impact the income of these people. Increase in food. The seasonal distribution of droughts demonstrates a clear link with the distribution of rainfall. High numbers of drought events have been recorded during January-March and during the period of August-September, showing a clear relationship with the two inter-monsoon periods in Sri Lanka. On the other hand, drought continues to impact people's lives slowly and invisibly negatively. Large scale droughts occur every three-four years.

The second peak is higher than the first and August is the month recorded with highest occurrence of drought surpassing 80 events. Over the past four decades more than 12.5 million people have been affected. Over 11,000 hectares of paddy land are destroyed each year due to lack of water²⁵.

Kurunegala Districts is the most drought affected areas in the country followed by Puttalam, Anuradhapura and Hambantota districts. Drought has a high impact on the national economy. Drought has severe impact on agriculture and export market sector and has reduce the GDP by 7%.²⁶.

However analysis of recent records indicated that drought impacted not only the drought-prone dry zone of the country but also the intermediate and wet zone too. The impacts of the droughts illustrate continuing and perhaps increasing vulnerability to extended periods of water shortage almost in the entire country. The degree of vulnerability to drought in the country has also expanded manifold due to impacts of climatic change, global phenomena such as La-Nina as well as local conditions such as the increase of population, poverty, reduction of forest cover, environmental degradation, the absence of drought preparedness plans and drought mitigation strategies. These factors are continually changing, and society's vulnerability to drought may also change in response to these fluctuations.

Although drought is a natural hazard, society can reduce its vulnerability and therefore lessen the risks associated with drought episodes. The impacts of drought, like those of other natural hazards, can be reduced through mitigation and preparedness. Planning ahead to mitigate drought gives decision makers chance to relieve the most suffering at the least expenses. Reacting to drought in "crisis mode" decreases self-reliance and increases dependence on government and donors.

Distribution of drinking water during dry season has become a practice even in wet zone increasing annual expenditure for providing drinking water. Government has spent Rs 38.53 million, Rs 63.53 million and Rs 42.63 million to provide drinking water in 2016, 2017 and up to September in 2018 respectively.

Government has paid more than Rs 1000 million as compensation to farmers for crop losses in drought affected districts in 2018. Farmers in Kurunegala, Anuradhapura, Vaunia, Mullaithivu Killinochchi and Puttalam has received bulk of the compensation. Survey conducted by the Ministry of Mahaweli

²⁵ EM-DAT

²⁶ Central Bank Report

Development and Environment in 2017²⁷ revealed that there are a total 21456 village level tanks in 16 districts in Sri Lanka of which only 11318 tanks are in working condition. According to Metrological Department, Sri Lanka receives 1750mm an annual average rainfall in dry zone, 1750-2500 mm in intermediate zone and more than 2500mm in wet zone. Rehabilitation of abandoned tanks to harvest rainwater and managing available water should be considered in future NDMP.

Landslides

Landslide is a general term covering a wide variety of mass movements and processes involving down slope transport of soil and rock material in mass under gravitational influence. Many of the natural hill slopes that stood safe for centuries are now affected by landslides due to human intervention in vulnerable hilly slopes. Hence landslides associated with intense rain during monsoon and inter-monsoon seasons and pre-cyclonic rains have become the most frequent and pressing disaster within the central highland of the country causing loss of lives, enormous damage to property and the national economy. Nearly 20,000 km² (30% area of the country) covering thirteen administrative districts (10 in the hill country and Gampaha, Kurunegala and Moneragala)are considered to be highly prone to landslides²⁸.

Human settlements and infrastructure facilities in Urban Centres in the hill country are adversely affected by landslides. Although the heavy rainfall is the triggering factor of landslides, geological and topographical characteristics of the landscapes, poor land use practices including unplanned development, settlements and extensive agriculture have enhanced the landslides risk.

NBRO has developed landslide hazard zonation maps to the scale of 1:50,000 to cover all areas in said 13 districts; 1:10,000 to cover identified critical areas selected based on the past landslide density and 1:5000 to cover high risk urban areas. NBRO has identified 14,860 houses located in landslide high risk areas in 9 districts. Landslide risk profiles being developed by NBRO could be a valuable tool for selecting safe areas for development.

Highest number of deaths reported during 2000-2017 is from Rathnapura district followed by Kegalle, Nuwara Eliya, Badulla, Kandy and Matale districts. Most of the people accounted as effected by landslides are those evacuated to safe location on the advice of NBRO as a precautionary measure.

Although NBRO has made continuous efforts to increase the awareness of people, identification of high risk landslide locations, early warning systems, life and economic losses, property damages and provision of relief to victims continue to increase during extreme rainfall events experienced during last few years. Slope failures due to human interventions are reported after heavy rainfall in all parts of the country. Housing and road construction have significantly contributed to this trend. In 2014, 2015, 2016 and 2017, southern high way as well as Kandy Mahiyangana road has to be close to traffic on several occasions due to major landslides. Ensuring safety of major roads in hill country districts is a major concern of the government.

²⁷ Survey Conducted under the Project for Strengthening the resilience of smallholder farmers in the Dry Zone to climate variability and extreme events through an integrated approach to water management.

²⁸ NBRO Report

Ministry of Disaster Management (MDM) has issued a circular giving instruction to Local Government Authorities (LGA) in landslide prone districts to obtain site specific Landslide Risk Assessment Report from NBRO for any construction and development activities including housing.

According to Meteorological Department very heavy rainfall events (extremes) in Sri Lanka have been recorded during the period of 2000-2016. The record-breaking heavy precipitation events in 2016 and 2017 in the country, that caused devastating landslides and floods, confirm the increasing trends in the rainfall pattern, in particular higher intensity within a shorter period of time.

Moreover many of the events reported during early monsoon periods or due to low pressure system development, connected with cyclones or high wind situations. All such phenomena might be the results of global climate change and therefore similar events can be expected more often resulting more devastations which can have corresponding but much higher consequences in future.

Cyclone/High wind

About 80 tropical cyclones develop over the globe per year²⁹. Out of these about 7% develop in the North Indian Ocean which consists of two areas as Bay of Bengal and Arabian Sea. The frequency of cyclones in the Bay of Bengal is about five to six times more than the frequency of cyclones in the Arabian Sea. As an average about four to five cyclonic systems develop in the Bay of Bengal.

Sri Lanka, an island in the North Indian Ocean, gets affected by cyclones if they cross the coast or when a passing nearby creating strong wind, heavy rainfall and associated floods.

According to literature and historical data, a definite frequency of landfall of cyclones in the landmass of Sri Lanka has not been identified. There has not been sufficient evidence to demonstrate a firm return period either.

Tropical cyclone profile has also been completed and available for response agencies to identify cyclone paths to prepare for response. Meteorological Department has developed the capacity to detect formation of cyclones in Bay of Bengal early, giving sufficient time to issue early warning and evacuate people to safe locations.

Highest number of deaths due to high wind 42 and 21 reported from coastal areas of Galle and Matara districts involving fishermen engaged in coastal fishing activities. Meteorological department has experienced difficulties to forecast high wind situation and disseminate the warning messages to fishermen in the sea. Deaths in other district were due to fallen objects during high winds including

²⁹ McBride, J.L., 1995

fallen trees. More than 55,000 houses, mostly roofs, have been damaged during last 35 years period by strong wind and localised typhoons.

Tsunami

Sri Lanka was one of the hardest hit countries by Tsunami which occurred on 26th December 2004 triggered by the most massive earthquake occurred in Bada Ache, Indonesia. The recorded death toll in Sri Lanka was 38,000. The displacement and loss of livelihood was also very significant. The tsunami damage to the 1700 km long coastal strip of Sri Lanka was enormous. It affected 12 of the 14 coastal administrative districts. Affected was reported as 0.9 million (9.1% of the total population of the affected districts). Fisheries, tourism, housing, urban centres, agriculture, and coastal infrastructure were the major areas that suffered extensive damage. The Tsunami also had significant negative impacts on the coastal habitats and ecosystems³⁰

Tsunami hazard profile has been completed comprehensively in 1: 10,000 and 1: 50, 000 scales covering the entire coastal area of the country. Hydro dynamic model has been run under different scenarios and field verification has also been completed. Since Tsunami inundation maps provide detail such as spatial extend of the inundation as well as the height of the inundation it contributes heavily for decision making process at coastal zone of the country.

DMC is practicing tsunami evacuation exercises in all coastal districts on regular basis to reduce the time taken to disseminate warning messages and evacuation of people from high risk areas.

Sea Level Rise

Inundation due to sea level rise has been published based on the International Panel for Climate Change (IPCC) scenarios into 1:250,000 scales. District based information on the inundation areas are given in the hazard profile for 25, 50, 75,100 years. Available information is too general to use for decision making and planning purposes. Due to sea level rise saltwater intrusion into fresh water bodies and ground water in coastal area have being increased. This has considerable effect on the domestic water supply, agriculture and environment. Therefore saltwater intrusion has to be considered as another area which shall be addressed in the disaster management plan.

Storm Surge

National hazard profile of the country consists with storm surge profile which prepared based on the past data and the simulation of the numerical modelling following the 1:50,000 scale base maps. Spatial distribution with depth ranges are given in the inundation map. According to model studies conducted at wind speed of varying form 110 km/hour, 160 km/hour, 215 km/hour and 275 km /hour from 10, 30, 90 and 300 year return periods inundation was recorded as less than 0.5m, 0.5-2m and more than 2 m

³⁰ The Study of Economic significance of coastal Region of Sri Lanka in the context of Environment changes of pre and post Tsunami; O.K.Nayanananda; Coast Conservation Department July 2007

respectively. Studies shows that the east coasts are more prone to the cyclone induced storm surge hazard with the north-western coastline including the coastal areas of Mannar and Jaffna peninsula particularly exposed. Considering the Mannar area is a very flat land population in the city has expanded, proper early warning system and evacuation plan is an urgent requirement with a special awareness programme targeting people living in vulnerable areas.

Coastal Erosion

Coastal erosion also has been identified as one of the prominent hazards under the national hazard profile of the country. Due to the human actions, mainly in the upstream of rives, the river sediment supplies have been reduced drastically accelerating the erosion situation too. The ill-planned coastal structures of both commercial and erosion protection have add-on more stresses on the coastal environment altering the natural processes.

1: 250,000 and 1:25,000 scale maps were published to depict the coastal erosion based on the sediment budget of the coastal zone. The erosion assessment was done for the entire coastline. The results could be applied in adaptation through setback systems in coastal management and in strategic planning, erosion management etc.

Lightning

Lightning hazard profile prepared by the Department of Meteorology gives details on region where the lightning occurs frequently enabling to issue warning the rainy period for the safety of people. Lightning hazard maps have been completed for the entire country to the scale of 1:250,000. Monthly lightning maps as well as Annual lightning hazard maps have been prepared based on the past data and information obtained from 20 meteorological stations³¹

Reported data for the last 10 years indicates that there is an increasing trend in life losses and people injured due to lightning. However there could be many unreported incidents also. Relatively high incidents have been reported in the districts of Polonnaruwa, Moneragala, Ratnapura, Anuradhapura, Badulla and Galle. These information could be utilised to conduct targeted awareness programmes for minimise the life losses and damaged to properties.

Fire

³¹ Hazard Profile Sri Lanka

Disaster Management Act has identified forest fires and urban fire as hazards affecting Sri Lanka. Forest fires are reported mainly in Badulla, Moneragala Matale and Kandy districts caused by human interventions. . During dry seasons people by their negligence as well as deliberately create fires in forest land.

Decreasing trend in deaths due to fires has been observed from the year 2006 as a result of awareness created through mass media. Number of houses damaged due to fire has shown a reduction during this period.

Human Elephant Conflict

Wild elephants are distributed in 33% of the land falling within 17 administrative districts in Polonnaruwa, Anuradhapura, Matale, Amapara, Hambantota, Kegalle, Moneragala, Puttalam and Tricomale are most affected districts. Between 1974 to 2017 number of lives lost reported as 1034³². On the other hand, elephant deaths too have been increasing annually from 180 prior to 2009 to 250 thereafter. This may be due to increasing incidents as well as non-reporting prior to 2009.

The primary causes of the Human Elephant Conflict are fragmentation of connectivity of natural forests, absence of proper land use plans, loss of elephant habitat due to human occupying elephant corridors, settlement in lands adjacent to dense forests, commercial farming, and quantitative degradation of elephant habitats. Elephants frequently invade villages and farm areas for food and water.

Poor waste management allowing elephants to taste salt food is also considered as an invitation for elephants to destroy houses in the process of looking salt and food. This highlights the need and the opportunity for integrated approaches to mitigate human elephant conflict that involve proper land use planning, resettlement schemes and incentives or legislative interventions for people not to occupy forest lands.

Annex B: Major agencies that are responsible for hazard mapping / hazard information

Hazard and type of information / maps	Responsible Institution
Urban floods	-Sri Lanka Land Reclamation & Development Corporation (SLLRDC)

³²Department of Wildlife Conservation

	- Respective Municipal, Urban Councils /Pradeshiya Sabhas
Landslide hazard zonation maps	-NBRO/GSMB
River flood level information, maps of flood prone areas for selected rivers, flood patterns in given river basins within the purview of the given agency, databases on flood inundation / historic floods, flood simulation / modeling of catchments areas	-Irrigation Department/ Mahaweli Authority of Sri Lanka (MASL)
Reservoir levels, heavy spilling from reservoirs, breaching of reservoirs, sudden flood water releases from reservoirs, Mapping flood prone areas downstream of selected reservoirs and dams within the purview of the given agency, dam breach modeling and flood patterns downstream of reservoirs and dams etc.	-Irrigation Department - Mahaweli Authority of Sri Lanka (MASL) - Ceylon Electricity Board (CEB) - NWS&DB - Agrarian Development Department - Provincial Council Engineering Divisions See Annex C for specific dams/ reservoirs within the Purview of the different agencies
Adverse weather and rainfall, cyclones, high winds, storm surges, lightning, thunder storms, database on high risk areas/events	-Meteorology Department
Maps and other information regarding coastal areas prone to coastal erosion and flooding / tsunamis / storm surges, sea levels, waves, sea-surface temperature data, other relevant information etc. in varying degrees	-Coast Conservation & Coastal Resource Management Department (CC&CRMD) - National Aquatic Resources Research and Development Agency (NARA) - Sri Lanka Navy - Sri Lanka Ports Authority
Drought Hazard – Information / databases and mapping by different agencies of different nature <ul style="list-style-type: none"> • Meteorological Drought • Agricultural Drought • Hydrological Drought 	-Water Resources Board - Meteorology Department - Department of Agriculture - Irrigation Dept. - Mahaweli Authority of Sri Lanka (MASL) - Agrarian Services Department / PC Eng.

	<p>Div. (minor tanks)</p> <ul style="list-style-type: none"> - ARTI
<ul style="list-style-type: none"> -Elephant attacks and other animal attacks - Forest / bush fire 	<ul style="list-style-type: none"> -Department of Forests - Department of Wildlife Conservation - Wildlife Trust - Central Environment Authority (CEA) - Local authorities in prone areas
<p>Epidemics, communicable diseases, Bird flu, AIDS, SARS, poisoning etc., and possible biological hazards,</p> <p>Health hazard due to presence of fluorides in drinking water, other health hazards; Quarantine procedure in case of possible spread of communicable diseases through persons / animals coming to the country from abroad</p>	<ul style="list-style-type: none"> -Health Ministry - Director General, Dept. of Health Services - Epidemiology Unit - Medical Research Institute - Other as relevant
<p>Fire Departments of CMC and other MCs and UCs as relevant</p>	<ul style="list-style-type: none"> -Past information regarding fire incidents
<ul style="list-style-type: none"> -Road / Traffic Accidents, especially large & heavy containers - Hazards during transportation of petroleum products / gas / poisonous chemicals / other 	<ul style="list-style-type: none"> -Ministry of Railways and Transport - National Transport Commission - Railways Department - Dept. of Motor Traffic - Health Ministry
<p>Contamination of water sources, Health hazard due to presence of fluorides in drinking water,</p>	<ul style="list-style-type: none"> -National Water Supply and Drainage Board - Water Resources Board
<p>Tsunami-causing seismic activity in the region; Earth tremours/quakes in the country; Areas of mining for extraction of various products such as sand, graphite, lime etc. (causing river bank erosion and land subsidence); Data / Maps related to seismic activities</p>	<ul style="list-style-type: none"> -Geological Survey and Mines Bureau (GSMB)
<p>Possible nuclear related hazards and location of atomic and nuclear plants/installations in neighbouring countries; Possible radiological emergencies</p>	<ul style="list-style-type: none"> -Atomic Energy Authority

Hazards due to sand mining, gem mining and extraction of other minerals; Areas of sand mining	-GSMB/ National Gem and Jewellery Authority - Central Environment Authority (CEA) - National Steering Committee on Sand Mining in the Ministry of Environment
Chemical hazards / Threats; Industrial Hazards	-Ministry of Industries - Labour Department - National Authority for Implementation of Chemical Weapons Convention (NACWC)
Fire threats due to petroleum products / storage; Oil spills on land	-Ministry of Petroleum and Petroleum Resources Development - Ceylon Petroleum Corporation - Sri Lanka Navy
Marine oil spills; other hazardous contaminations	Marine Environment Protection Authority

Annex C: Specific Reservoirs Falling within the Purview of Different Agencies

Institution	Dams / Reservoirs
Irrigation Department	<ul style="list-style-type: none"> All large and medium tanks except those under other agencies mentioned below
Mahaweli Authority of Sri Lanka (MASL)	<ul style="list-style-type: none"> Mahaweli basin – Kothmale, Polgolla, Victoria, Randenigala, Rantambe Loggaloya, Heppalaoya, Diyabanaoya, Ulhitiya – Rathkinda & other small tanks

	<ul style="list-style-type: none"> • Walawe basin – Uda Walawe Reservoir, Chandrikawewa, Kiriibbanwewa and other small tanks • Maduruoya basin – Maduruoya and other small tanks • Kalaoya and Dambuluoya basins – small tanks
Ceylon Electricity Board (CEB)	<ul style="list-style-type: none"> • Castlereagh, Maussakele, Canyon, Norton & Laxapana in Kelani River Basin • Samanalawewa in Walawe River Basin • Kukuleganga Weir in Kukuleganga Basin
National Water Supply & Drainage Board (NWS&DB)	<ul style="list-style-type: none"> • Labugama • Kalatuwawa • Other small tanks for water supply maintained by NWS&DB
National and Provincial Agrarian Services Departments	<ul style="list-style-type: none"> • All small and medium tanks within their purview (except those under MASL)

Annex D: Mandates of Line Agencies

Agencies and the relevant ministries need to take necessary steps towards improving the mandates of agencies if these are not very clear. Broad activities in improving the mandates would be to,

- Propose legislative steps or regulations as appropriate for the proposed mandates to be legal, for undertaking the mandated functions (regulatory functions or implementing / consultancy functions). Introduce responsibility and accountability for the assigned functions
 - Study / review the present organizational set up of the agency and propose improvements
 - Identify needs and gaps in manpower, equipment, offices and other resources
 - Propose training and capacity building for sections/divisions in the organization

DMC would support these agencies in these activities on request. DMC will also take action with regard to any hazards or functions which have not been assigned to any institutions and proceed with legislative steps or regulations as appropriate coordinating with related agencies / ministries.

Annex E: Reviewing mandates of Provincial Councils (PCs) and Local

Authorities (LAs)

The objectives would be to review, strengthen and provide hazard-specific institutional mandates for PCs and LAs to perform or support relevant disaster related activities. Broad activities in reviewing and improving the mandates would be to,

- Identify and address the gaps in institutional functions of PCs and LAs through provision of mandate
- Legislative steps or regulations as appropriate
- Proposals for introducing responsibility and accountability for assigned functions

DMC would provide the necessary support to these agencies with the relevant ministries and agencies.

Annex F: NDMCC Member List

Annex G: Composition of Disaster Management (DM) Committees at Different Subnational Levels

District Disaster Management Committee

- Chairperson (as appropriate) - Ministers / MPs / District Secretary
- Additional District Secretary
- Assistant Director District Disaster Management Unit – **(Convener and Coordinator of the district DM committee)**
- Divisional Secretaries
- As relevant district level officers such as, Social Services Officer, Provincial Social Services Officer, Environmental Officer, Samurdhi Officer, Youth Services Officer and other relevant officers attached to the District Secretary's Office and district level representative from ;

- Irrigation Department / Provincial Irrigation Department
- Meteorology Department
- National Building Research Organization
- Police Department
- Armed Forces as applicable
- National/Provincial Education Department
- Road Development Authority / Provincial Road Development Authority
- National Water Supply & Drainage Board
- Ceylon Electricity Board
- Sri Lanka Telecom
- SLRCS / NGOs
- National / Provincial Social Services Departments
- Local Authorities
- Health Department / Provincial Health Department
- Commissioner of Local Government
- Agriculture Department
- Central Environment Authority
- Coast Conservation & Coastal Resource Management Department
- Wild life Department
- Ministry of Fisheries and Aquatic Resources
- Urban Development Authority*
- National Physical Planning Department
- National Housing Development Authority
- Land Use Policy Planning Division of M/Lands
- Survey Department

During a disaster this committee will initiate activities for responding to the disaster. However, in such situation only the divisional secretaries of affected divisions will be in the active committee.

Divisional Disaster Management Committee

- Chairperson (as appropriate) - MPs / Divisional Secretary
- **Assistant Divisional Secretary – (Convener and Coordinator of Divisional DM Committee)**
- Social Services Officer, Provincial Social Services Officer, Environmental Officer, Samurdhi Officer, Youth Services Officer and other relevant officers attached to the Divisional Secretary's Office
- Grama Niladharis
- For each of the organizations as in District Disaster Management Committee above, district level representative, his deputy and an additional official – In instances where there are no divisional level offices, district level representatives can be included.

GN Division Disaster Management Committee

Generally the following members can be included in the main Committee, but additional members could be included as appropriate, with a maximum of around 12 personnel.

- Advisors and counselors: Chief Priest of temple / church / mosque and other VIPs such as School

- Principal / Head Master / senior village ayurvedic doctors can be appointed as advisors and counselors.
- Grama Niladhari: Chairman of the Committee
- Other members: can be appointed from among the following considering their interest and participation in the village activities.
- Selected Community Leaders, NGOs active in the GN division, School teacher, Businessman in the area, Any officials / professionals / Skilled workmen / Mechanics, actively participating in village activities, Ex-servicemen, Others

Sub committees at GN Level for the following aspects with suitable members must be appointed:

- Early Warning
- Search & Rescue
- First Aid
- Camp Management
- Security

DRAFT: NOT FOR CIRCULATION AND ONLY FOR REFERENCE

Annex H: Mainstreaming of DRM in the Development Process and some Possible Areas

A Mainstreaming of DRM in National Development Policy, Planning and Implementation

1 Integration in National Development Planning

- 1.1 Mainstreaming DRR into the National Development Plan
- 1.2 Mainstreaming DRR into the National Poverty Reduction Strategy
- 1.3 Developing the National DRM Plan with inputs from all Relevant Ministries and Agencies
- 1.4 A Guide to Implementing the Hyogo Framework of Action
- 1.5 Mainstreaming DRR into In-Country Assessments and the Multi-year Program Framework of International Development Agencies
- 1.6 Mainstreaming DRR into the National Environmental Impact Assessments for New Development Projects
- 1.7 Mainstreaming DRR into the National Adaptation Plan of Action (NAPA) under the UN Framework Convention for Climate Change
- 1.8 Mainstreaming DRR into the UN Common Country Assessment and UN Development Assistance Framework Process
- 1.9 Institutionalizing of Community-Based DRM in Government Policy

B Mainstreaming of Disaster Risk Management into Specific Sectors

2 Agriculture Sector:

- 2.1 Mainstreaming DRR by Promoting Programs of Contingency Crop Planning
- 2.2 Mainstreaming DRR by Promoting Programs of Crop Diversity
- 2.3 Mainstreaming DRR by Promoting Supplementary Income Generation from Off-Farm and Non-Farm Activities
- 2.4 Mainstreaming DRR by Effective Insurance and Credit Schemes to Compensate for Crop Damage and Loss to Livelihood

3 Infrastructure (Including Public Works, Road and Construction) Sector

- 3.1 Mainstreaming Disaster Risk Impact Assessments into the Construction of New Roads and Bridges
- 3.2 Mainstreaming DRR by Promoting the Use of Hazard Risks Information in Land-use Planning and Zoning Programs
- 3.3 Mainstreaming Disaster Risk Impact Assessments into the Construction of New Roads and Bridges

4 Housing (Including: Urban and Rural Housing Development) Sector

4.1 Mainstreaming DRR by Promoting the Increased Use of Hazard-Resilient Designs in Rural Housing in Hazard-prone Areas

4.2 Mainstreaming DRR by Promoting the Utilization of National Building Codes

4.3 Mainstreaming DRR by Promoting the Compliance and Enforcement of Local Building Laws in Urban Hazard-Prone Areas

5 Financial Services Sector

5.1 Mainstreaming DRR by Promoting the Flexible Repayments into Micro-Financing Schemes

5.2 Mainstreaming DRR by Encouraging Financial Services Sectors and Local Capital Markets to Finance DRR Measures

6 Education Sector

6.1 Mainstreaming Disaster Risk Concepts into the School Curriculum

6.2 Reducing Disaster Risks by Mainstreaming Higher Standards of Hazard Resilience into the Construction of New School Buildings

6.3 Reducing Disaster Impacts by Mainstreaming Disaster Contingency Features into Schools for use as Emergency Shelters

7 Health Sector

7.1 Mainstreaming DRR through the Analysis of External and Internal Vulnerabilities of Hospitals in Hazard-prone areas

7.2 Mainstreaming DRR by Development and Implementation of Disaster Preparedness Plans for Hospitals and Health Facilities

7.3 Reducing Disaster Risks by Mainstreaming Higher Standards of Hazard Resilience into the Construction of New Hospital Buildings

Annex I: SFDRR in Brief

Annex J: Major Stakeholder Agencies Responsible for Different Activities in Pre, During and Post Disaster Stages

Responsible Agency	Pre Disaster					During Disaster				Post disaster					
	Prevention	Mitigation	Risk Information	Preparedness	Awareness & Training	Forecasting & EW	S&R	Evacuation	Emergency Relief	Long term relief	Insurance	Rehabilitation	Reconstruction	Resettlement	Livelihood recovery
Central Environment Authority			x												
CEB / LECO				x	x			x				x		x	
Coast Conservation & Coastal Resource Management Department		X										x			
Department of Agrarian Services		x	x			x						x			
Department of Agriculture		x	x	x	x	x					x				x
Department of Irrigation	x	x		x	x							x		x	
Department Meteorology			x		x	x									
Disaster Management Centre	x	x	x	x	x	x	x								
Health Sector Institutions – Nat. & Provincial	x		x	x	x			X							
Land Use Policy Planning Division (Planning)	x	x												x	
Mahaweli Authority of Sri Lanka	x	x	x	x	x	x						x			x
MCs, UCs and PSs	x	x		x	x							x	x	x	
Marine Pollution & Prevention Authority			x	x											
Ministry of Education	x	x		x										x	
Ministry of Housing												x		x	
Ministry of Nation Building and Resettlement														x	x
Ministry of Social Services										x					
NARA			x			x									

National Disaster Relief Services Centre										X	X	X	X		X	
NBRO	X	X	X		X	X									X	
NHDA													X		X	
NPPD (Planning)															X	
NWS&DB		X	X										X		X	
Provincial RDAs		X											X			
SLLRDC		X	X										X			
Social Services Department											X					
Sri Lanka Air Force							X	X	X							
Sri Lanka Army							X	X	X							
Sri Lanka Navy							X	X	X							
Sri Lanka Police Department						X										
Sri Lanka Coast Guard							X	X	X							
Sri Lanka Telecom						X										
Survey Department (Maps)		X														
UDA (Planning)		X													X	
Wild Life Department		X							X							

Annex K: Consideration of Existing Public Services in Areas of New Development

With the rapid development taking place at present there are instances when required essential services are insufficient, such as water supply, sewerage (applicable in Colombo and other areas with central sewerage systems), solid waste collection and disposal and especially, surface water drainage in city areas. As explained below, these should be dealt with adequately after discussion and canals. In high intense rains the system cannot cope with the with the relevant agencies such as the UDA, Sri Lanka Institute of Local Governance, Provincial Commissioners of Local Governance and other agencies as applicable.

Sewage Disposal

In secondary cities and urban areas in the suburbs of Colombo, where there are no contras sewerage systems, with the rapid and increased development, especially with an increase number of multi storied buildings coming up, sewage disposal with septic tanks too will become a problematic issue as there is hardly enough land left for same and in addition the mosquito menace that is presently prevalent will aggravate further. In addition, there is the grave possibility of the contamination of underground water if not already happened.

The cause for the land subsidence in one location in the city of Colombo during floods in May 2007 was identified as inadequate maintenance of the central sewer system resulting in leaks in the pipes. As such regular maintenance is an essential requisite.

Solid Waste Collection and Disposal

Solid waste has become a hazard and in time to come this may 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. At present it is observed that landfill has been adopted as a solution to the problem of disposal of solid waste. This will have longer term repercussions with the high percentage of polythene and plastic in the solid waste that would create an impermeable layer beneath the top soil layer. As such permanent alternative more environmentally friendly solutions must be proposed.

The solid wastes generated by different sources are of different physical and chemical characteristics. Generally city wastes would consist of a mix of biodegradable and non-biodegradable materials, especially containing polythene and plastics. The most suitable ecofriendly method of disposal would be composting organic waste 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 hazardous, industrial, bio-chemical, infectious (from hospitals) and toxic wastes other solutions will be proposed and adopted such as, incineration, autoclaves etc. as appropriate and the need demands.

Another disaster related to improper solid waste disposal is urban floods created by blocking of surface drains, underground drains and canals due to solid waste. The Roadmap proposal “M-16

Provision of Solid Waste Disposal Systems as a Solution to the Solid Waste Hazard in Urban Areas” has proposed ways of involving small industrialists to be motivated for undertaking different recycling projects along with composting.

Surface Drainage / Run Off

One of the main causes of urban floods of 2006 and 2007 in many districts was identified as the inadequacy and lack of maintenance of drainage canals and the city drainage systems. Further reasons identified were the unplanned haphazard development, filling of low lands etc.

While regular canal maintenance has to be ensured, pumping out water from canals into the sea during heavy rains too may have to be considered, especially in Colombo and other areas where the canal levels are relatively low when compared to the MSL. Another issue is the increased trend of paving the inbuilt areas of the building plot after house or other building constructions, which tends to increase the surface runoff with the major part of the precipitation directed to the drains total mass of water. New ways and means of storing storm water within the building plot need to be studied.

Annex L: Guideline of the preparation of Disaster Management Plans of Different National and Provincial Ministries / Departments / Institutes / Agencies

The coverage of plans would generally be as follows:

- General Introduction - Legal Framework for Disaster Management (DM) in Sri Lanka; The National Disaster Management Policy; Activities identified for Emergency Response etc.
- General Profile – of the given Ministry / Department / Institute / Agency as appropriate
- Hazard, Vulnerability and Risk Assessment - Main disasters affecting the area, fire hazard and the vulnerability of the buildings, premises, assets, goods, other possessions; in case of agencies with vital installations or activities, an analysis of any hazards likely to be triggered due to these and any vulnerabilities thereof; any public utilities and infrastructure within the purview of any given agency should be included in the vulnerability analysis for protecting them from impact of natural/man-made disasters.
- Arrangements for responding to an emergency
 - Disaster Management Committee of the agency
 - Disaster Preparedness / Emergency Operations Coordination within the agency
 - Emergency Operations Room and its functions – This will vary depending on the nature of the organization
 - ❖ In case of standard typical agencies without any vitally important installations or functions, this need not be a high-tech EOC with all facilities, but a room with basic facilities such as telephone, fax, internet / e-mail etc. where the DM Committee can meet and hold discussions and where the plan, relevant contact information, correspondence, files etc. are kept. This could be the conference room of the organization, but a separate DM cupboard can be kept with DM information with a person in charge.
 - ❖ In case of vital installations, such as say, airports, harbours, ports, petroleum / gas storages, power, drinking water, telecommunication etc., up-to-date EOCs as required by the particular installations should be provided.
- Arrangements for protection of assets / equipment / documents / information / data
 - Arrangements for protecting the staff, building and premises
 - Protecting / safe keeping / shifting assets, goods, equipment, documents for sustaining the duties and services that are provided by the establishment and other possessions as appropriate
 - Arrangements for keeping backups of the computerized information / data pertaining to the activities of the agency (as applicable)
- Any resource requirements
- Fire response plan in case of high rise buildings – whether all requirements of the Local Authority regarding fire safety has been met, fire alarms, evacuation exits / maps / signs, fire extinguishers, sprinklers etc., whether all occupants of the building have been made aware of the actions to be taken and fire exits, not to use lifts etc. in case of a fire
- Response plan for any other emergency in case of high rise buildings – The possibility of some other emergency cannot be ruled out, such as an earth tremour, building collapse due to a plane crash, other extremely large object hitting the building etc. All occupants of the building have to be made aware (while not making them anxious or frightened) of the alarms, actions to be taken in such a situation, not to use lifts etc.
- All relevant information such as contact information, resources available for response, places identified as safe shelter for shifting in case of an emergency etc. could be given as annexures in the plan. DMC will provide further guidance notes as required for developing these plans.
- Other Aspects to be considered in DM Planning include Business Continuity Planning; DVI; Arrangements for Equitable Distribution of Relief and Recovery; Special community recovery modules to enable them to return to normalcy within the shortest possible time; Disaster Ethics; Standards in Disaster Relief including water, sanitation and hygiene; food security, nutrition

and food; shelter, settlements and non-food items; and health services (Operational Procedure for these already prepared will be approved by the NCDM and the Cabinet to be made mandatory); and Protection for communities from displacement, protection during transfer / displacement, humanitarian assistance to IDPs, their return, resettlement and reintegration.

Proposed Process of Preparation of Disaster Management Plans of Different Ministries / Departments / Institutes / Agencies

DMC will facilitate the development of the different ministries / departments / institutes / agencies. DMC will provide guidance notes, general coverage, necessary circulars to national/provincial ministries and awareness workshops. DMC will coordinate and monitor adherence and progress. DMC at national level will coordinate the process in case of national level establishments, and the district DM Coordinating Units (DDMCUs) will facilitate the process with the District Level and agencies. The sequence of activities in the planning process would be as listed below:

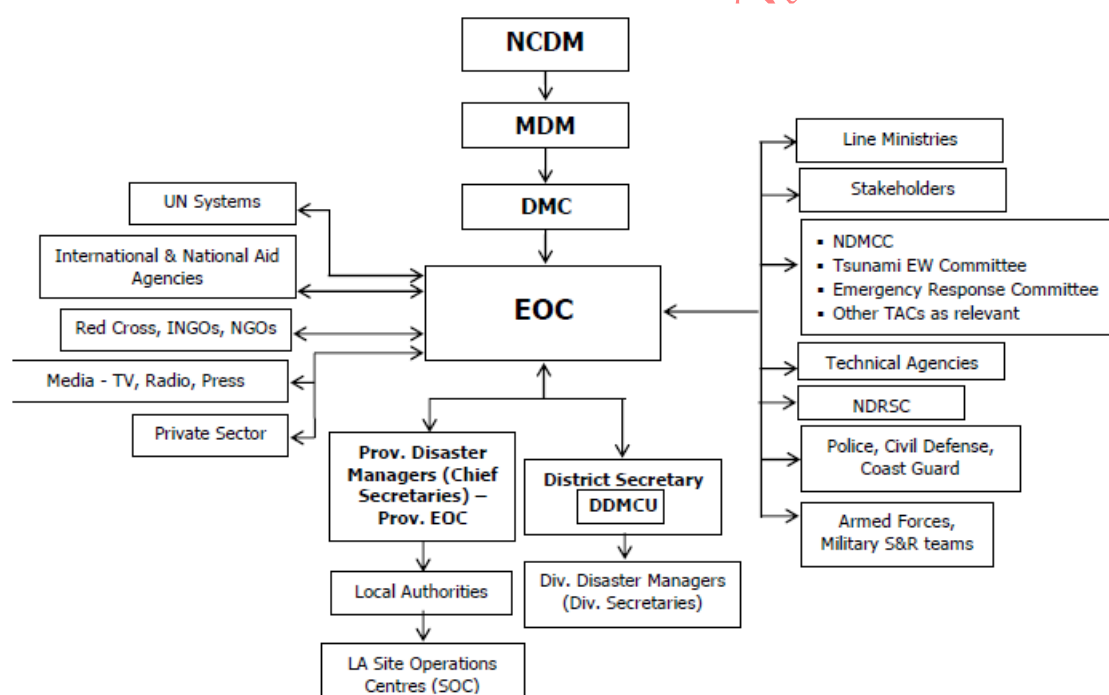
- Introductory workshop with the Generic Format and Guidance Note organized and conducted by the DMC at national or provincial level with a group of agencies. Each organization will appoint / nominate a responsible officer who will participate in the workshop along with the senior level official.
In case of extremely vital organizations or installations this may be a one-to-one meeting with the DMC.
- Appointment of a disaster management committee in each organization. The composition will vary depending on the nature of the organization.
- Collection of information / plans / maps, an analysis of the possible hazard situations in the organization / production process / buildings as relevant, possible alternative procedures for responding in an emergency situation. A group decision must be taken on the procedures to be adopted.
- Preparing the draft plan. The following have to be in place in this process:
 - Plans of the establishment / building showing dangerous or hazardous locations, evacuation routes, and safe locations to go to
 - Awareness for all employees
 - Evacuation drills
- If appropriate a discussion with the DMC with the draft plan and general agreement
- Concurrence for the draft by the DM Committee and the relevant Ministry as appropriate
- Finalizing the draft and editing by a selected Editorial Committee appointed by the agency.
Editing will be for the correctness of the procedures / content, typing mistakes and essential components / presentation of the report.
- Final meeting / workshop among DM Committee and / or employees with copies of draft plan distributed. In case of extremely vital organizations or installations the relevant ministry may be present. DMC also may be present. Obtained concurrence for the final plan and approval for printing.
- Arrangement for printing (Proof reading on receiving the proof from the printer by Editorial Committee)
- Make the final plan available to all relevant.

Annex M: Technical Institutions Responsible for Forecasting and Issuing Early Warning Alerts for Different Hazards

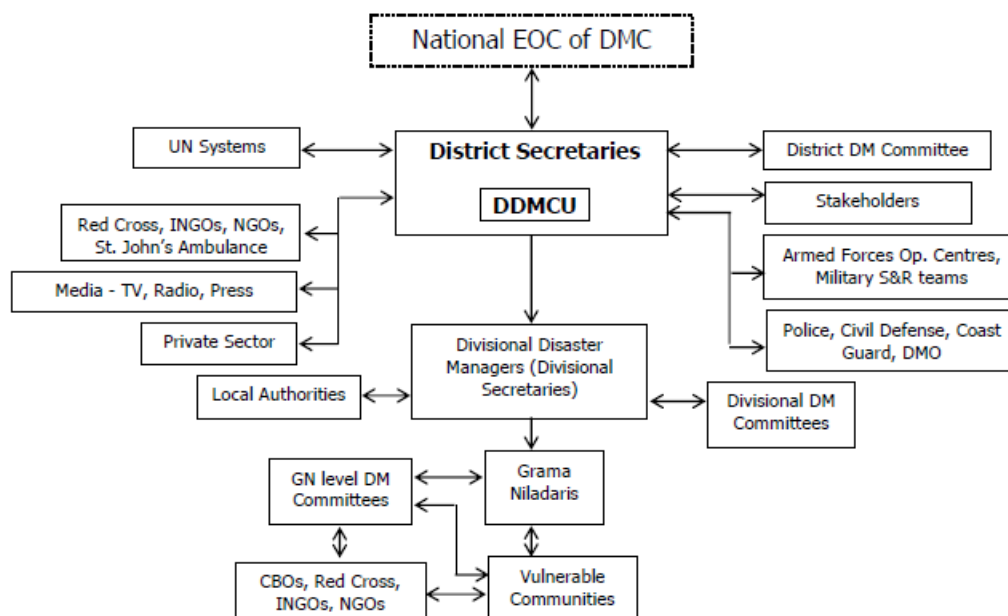
Hazard	Responsible Institution
Adverse climatic conditions, cyclones and storm surges, lightening, tornadoes, high winds.	Meteorology Department
Landslides	National Building Research Organization (NBRO)
River floods	Irrigation Department Mahaweli Authority of Sri Lanka (MASL)
Floods due to heavy spilling from reservoirs, breaching of reservoirs, flood water releases from reservoirs etc.	-Irrigation Department - Mahaweli Authority of Sri Lanka (MASL) - Ceylon Electricity Board (CEB) - National and Provincial Agrarian Services Departments See Annexure 3 for specific dams /reservoirs within the Purview of the different agencies
Drought	- Meteorology Department - Agriculture Department - Irrigation Department
Tsunami	Dept. of Meteorology
Coastal flooding storm surges	Coast Conservation & Coastal Resource Management Department
Epidemics, communicable diseases, Bird flu, AIDS, SARS, poisoning etc., and possible biological hazards; possibility of spread of such diseases through people coming from abroad	Department of Health Services
Oceanic surges (excluding storm surges), Sea level rise	National Aquatic Resources, Research and Development Agency (NARA)
Seismic Events in and around Sri Lanka	Geological Survey & Mines Bureau
Road / Traffic Accidents - Ministry of Railways and Transport	Railways Department Dept. of Motor Traffic / Police
Industrial and Toxic Chemical hazards; International Hazardous Chemical Alert System	Ministry of Industries? Safety & Hygiene Divisions of Labour Department National Authority for Implementation of Chemical Weapons Convention (NACWC)

Contamination of water sources	National Water Supply and Drainage Board Water Resources Board
Marine oil spills and other hazardous contaminations	Marine Environment Protection Authority Sri Lanka Navy
Forest / bush fire	Department of Forests Department of Wildlife Conservation
Radioactive and Nuclear related hazards	Atomic Energy Authority
Aircraft crash/ Air raids/ Civil or internal strife	Authority of Airport & Aviation

Annex N: National Level Response Structure on Occurrence of a Disaster



Annex O: District Level Response Structure



Annex P: Detailed Actions and Responsibilities of Various Stakeholder Agencies after Issue of Early Warning or on Occurrence of a Disaster

Actions / Responsibilities	Responsible Stakeholder Agencies
EW Providers	Technical agencies/ Mandatory agencies
Information & EW Dissemination	DMC, Army, Navy, Air Force, Police, Medical, Ministry of Administration
General coordination of all activities with assistance from DMC officials, departmental officials at respective levels	Administrative heads at respective levels (Provincial, district, divisional, local authority etc.)
Assisting in and coordinating all aspects work	Assistant Director – District and DMC Coordinators at respective levels
Search & Rescue, Safety of rescue workers, Evacuation etc.	Administrative heads at respective levels (Provincial, district, divisional, local authority etc.) DMC Coordinators at respective levels Fire Service Departments of LAs Community Volunteer Teams NGO/ INGO
In case of a technological disaster	The responsible technical agency
Restoration of communication facilities	Telecom
Restoration of power supply	CEB

Clearing of roads, repairs and identifying alternative roads etc.	RDA, PRDA, Local Authorities
Restoration and distribution of water, Sanitation	NWS&DB, Local Authorities
Assisting other agencies in: Law & order; Assisting in and coordinating Search & Rescue, Safety of rescue workers; Other response activities; Clearing roads; Providing essential services	Armed Services & Police, fire service departments
Search & Rescue, First aid, Temp. shelter, Relief activities, cooked food, Cattle camps, Health & sanitation	Fire Service Departments NGO & CBOs, Communities
First aid, Medical aid, Disposal of dead bodies, Health & sanitation	Central and Provincial Ministries of Health; Govt. & Private Hospitals; SLRC / NGOs, Fire Service Departments; Communities
Relief activities, cooked food, dry ration etc.	National Disaster Relief Services Centre, NGOs, INGOs, CBOs, Communities etc., Dept. of Social Services if applicable
Temp. shelter and facilities	Respective levels of administration with Education Authorities, NGOs, CBOs, Communities religious leaders etc., NWS&DB, CEB, Army, Navy, Air Force, Police
Disposal of lethal, toxic and adverse chemicals etc.	CEA, Police, Military, AEA, fire service departments, other
Entry & Exit (Goods & People)	Airport & Aviation, Custom, Immigration, Ministry of Health, Ministry of Foreign Affairs, NDRSC, Ports Authority

Annex Q: Detailed actions and responsibilities of various stakeholder agencies after issue of early warning or on occurrence of a disaster

Annex R: A matrix of major stakeholder agencies responsible for different activities in post disaster recovery, rehabilitation & reconstruction

DRAFT: NOT FOR CIRCULATION AND ONLY FOR REFERENCE

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