

DRAFT



Government of the People's Republic of Bangladesh

**National Plan for Disaster
Management
(2021-2025)**

*Action for Disaster Risk Management
Towards Resilient Nation*

March 2020

Ministry of Disaster Management and Relief

EXECUTIVE SUMMARY

National Plan for Disaster Risk Management 2021-2025

Preamble: Bangladesh is ranking as one of the most disaster-prone countries. People in Bangladesh are often affected by water-related natural disasters, including floods, riverbank erosion and cyclones. In addition, recent rapid urbanization increases the risks for earthquake as well as man-made disasters. National Plan for Disaster Management (NPDM) 2021-2025 exemplified the strategic plan of the Government of Bangladesh in its Vision and the Mission of the Ministry of Disaster Management and Relief (MoDMR) between 2021 and 2025 towards building resilient nation. NPDM 2021-2025 has core goals for actions to save life, reduce economic losses in every disaster cycle stages which includes Disaster Risk Reduction (DRR), Humanitarian Response and Emergency Recovery Management. NPDM builds on GoB's past lesson learns in disaster risk management and international DRR frameworks, and adopts a phase-wise approach with 34 core targets to be implemented in partnership with relevant stakeholders.

Overview of NPDM 2016-2020: NPDM 2021-2025 is upgraded from the previous National Plan for Disaster Management (NPDM) 2016-2020 as well as 2010-2015, which were the first policy document of its kind. NPDM 2016-2020 reflected a paradigm shift from relief-based disaster response to proactive disaster risk reduction, with emphasis on capacity strengthening. NPDM 2016-2020 was drawn from regional and global frameworks including the Sendai Framework for Disaster Risk Reduction (SFDRR) and Asia Regional Plan for Implementation of Sendai Framework for Disaster Risk Reduction 2015-2030. It was recognized the national strategy for addressing global and regional targets.

Achievements, lessons and remaining gaps of NPDM 2016-2020: A review of NPDM 2016-2020 indicated the achievement of reducing the disaster victims, ensuring early warning and response mechanism, mainstreaming disability and gender inclusive disaster risk management, strengthening civil-military coordination for humanitarian response and starting Implementation of SFDRR, etc. However, still piecemeal works or patchwork-based pilot interventions are dominant in DRR sector. It is necessary for enhancing the capacity for whole disaster cycle management including increasing no regret investment, tackling urban disasters, enhancing information management mechanism etc.

NPDM 2021-2025: Action for disaster risk reduction: NPDM 2021-2025 was prepared under the leadership of MoDMR and is aligned with national, regional and international frameworks including Delta Plan 2100, 8th 5 Year Plan of Government of Bangladesh, SFDRR, Asia Regional Plan for Implementation of the Sendai Framework for Disaster Risk Reduction, Dhaka Declaration 2015 Plus for Disability Inclusive Disaster Risk Management. The plan places importance for disaster risk management linking with rapid urbanization and climate change, and the necessity of DRR for sustainable development, and is flexible and adaptive in cognizance of the changing nature of risks in Bangladesh. NPDM 2021-2025 produced through a participatory and inclusive approach through extensive stakeholder and expert consultations.

Purpose and approach of NPDM 2021-2025: The purpose of NPDM 2021-2025 is to guide implementation of the Disaster Management Act 2012 and Standing Orders on Disaster 2019, allowing Ministries/Department of GoB and other agencies to use it to produce their Annual Work Plans. The plan takes a ‘whole-of-Society’ approach for effective implementation.

Strategic aims and objectives: NPDM 2021-2025 have a set of strategic aims reflecting its alignment with SFDRR, strategy guidance to relevant stakeholders, recognition of disaster risks and phased implementation of prioritized actions. A set of objectives allow operationalizing the aims through identifying priority actions, providing a roadmap for implementation of at least 20 core investments area, incorporating DRM aspects in sectoral plans, exploring public-private investments, ensuring inclusivity, addressing emerging risks, promoting risk governance and illustrating how the work of various stakeholders can contribute to GoB’s DRM vision.

Legal context: The Disaster Management Act 2012 is the legal framework for DRM in the country. The National Disaster Management Council (NDMC), headed by the Prime Minister, is the supreme body for providing overall direction for DRM, with the MoDMR having the role of “Secretariat” to NDMC. NPDM 2021-2025 is prepared to achieve national long-term DRM goals in line with the DM Act 2012, DM Policy Delta Plan 2100 and 8th 5-Year Plan.

Scope: NPDM 2021-2025 is GoB’s ‘white paper’ document and abides by national DRM institutional and policy regimes. It embodies both rapid and slow onset disasters and it also includes recurrent, anticipated and climate induced disasters. Following the investment scenario of the country and potential engagement of the private sector, NPDM 2021-2025 promotes risk-informed planning and implementation of investment initiatives for business continuity in disasters.

Plan development process: The development of NPDM 2021-2025 consisted of a preliminary desktop review, then guided by a steering committee to draft its initial contents. The development process was participatory and inclusive, involving consultations with a wide range of stakeholders including GoB agencies, NGOs and CSOs, facilitated by NRP, JICA, UNDP and MoDMR from 2019. An intensive review of the SFDRR, UN Sustainable Development Goals (SDGs) and the Paris Climate Change Agreement allowed synergies between international drivers, the country context and priorities linked with the NPDM 2021-2025. A set of thematic and regional workshops allowed drawing diverse insights, and a national consultation workshop was conducted to gain feedback through a SFDRR-based framework. These workshop outputs were made available online for further feedback and subsequently the draft NPDM 2021-2025 was also made available online, with eventual approval by an inter-ministerial committee.

A changing risk environment: Bangladesh is highly disaster-prone and managing disasters has been a major focus, with investments in DRM significantly decreasing disaster mortality in recent decades. The context, however, is changing - Bangladesh is highly at risk from climate change and earthquakes pose a challenge for its rapidly growing cities. Women are disproportionately impacted by disasters, requiring more emphasis on managing risks in a gender-responsive manner. These emerging risks present major challenges to human development, where the poorest communities are hardest hit by disasters. Despite these challenges, Bangladesh has made major recent socio-economic gains, achieving a lower middle-income country status. Nonetheless, significant economic losses due to disasters continue to occur and the industrial sectors are highly vulnerable. The speed of urbanization with resultant growth of informal settlements requires prioritizing resilient urban design, planning and delivery of services.

Main hazards: The following hazards impact Bangladesh: flood; cyclone and surge; tornado; earthquake; riverbank erosion; landslide; salinity intrusion; drought; tsunami; lightning; arsenic contamination; human-induced hazards and health hazards. The last hazard has potential for assuming significance because of the emerging risks in Bangladesh.

Disasters and development linkages: Disasters are often the outcome of inadequate development choices and can eradicate years of development effort where disaster risk and poverty are closely linked. Since poverty, sustainable development, disasters and climate change are interlinked, it is crucial to integrate DM measures in development initiatives. It is not only the business of the government, but involves every part of society because DM for resilience contributes to sustainable development. Development and investment plans should be risk-informed based on disaster risk assessments and avoid generating new risks or exacerbating existing ones.

National DM instruments: DM in Bangladesh is guided by a number of national drivers which includes: National DM plans (NPDMS) that strategize the management of both risks and consequences of disasters, community involvement and integration of structural and non-structural measures; Disaster Management (DM) Policy (2015), which places importance on the DM fund as a dedicated financial resource for DM activities at all levels; DM Act 2012, which endorses the Standing Orders on Disaster (SOD) and provides a legal basis.

Institutional structure: MoDMR has the responsibility for coordinating national DM efforts and NDMC is the supreme body for providing overall direction. Functional and hazard-specific planning and execution responsibilities are vested in sectoral agencies. The Standing Orders on Disaster (SOD) issued by the ministry in 1997 was an important milestone towards guiding and monitoring DM activities in Bangladesh. Key national level DM institutions include: NDMC; Inter-Ministerial Disaster Management

Coordination Committee (IMDMCC); National Disaster Management Advisory Committee (NDMAC); National Platform for Disaster Risk Reduction (NPDRR); Earthquake Preparedness and Awareness Committee (EPAC); and Focal Point Operation Coordination Group of Disaster Management (FPOCG). At sub-national levels: Disaster Management Committees (DMCs) at district, upazila, union, pourasava and ward levels.

Disaster-Development linkages – national and international frameworks: NPDM 2021-2025 draws from several national and international frameworks including: Vision 2041, which is concerned with protection from climate change and environmental impacts, and ecological development; 8th Five-Year Plan relating to the overall goal of DM in Bangladesh to build resilience and corresponding identification of national resources; Bangladesh Climate Change Strategic Action Plan (BCCSAP), which is pro-poor and prioritizes adaptation and disaster risk reduction based on key thematic areas with cognizance of the link between climate change and disasters; Paris Climate Change Agreement, providing Bangladesh the opportunity to leapfrog into a sustainable future by investing on renewable energy; Sustainable Development Goals (SDGs), where DRR is the foundation and allows safeguarding development efforts from disasters; and most importantly, SFDRR, which is integrated into the objectives, goals and activities of NPDM 2021-2025 and serves as a template for translation to the Bangladesh context. SFDRR is built on four priority areas which are also integrated into the goals and activities for DM of GoB's 8th Five Year Plan.

Vision, Strategies and Priorities of NPDM 2021-2025

Vision: building on achievements: NPDM 2021-2025 is based on SFDRR and follows the national targets indicated in SFDRR and is aligned with its four priorities. Bangladesh has invested strongly on DRR, and despite frequent disasters, disaster mortality has reduced, GDP growth is maintained, food security is improved and almost all the MDGs were achieved. However, a changing risk context means new challenges, but also opportunities for building resilience. Thus, building on past achievements and tackling new risks, the vision of NPDM 2021-2025 is: “Winning resilience against all odds”.

Strategy directions: The disaster and institutional context of Bangladesh, and review of NPDM 2016-2020, point to the following eight key strategic directions for achieving resilience: Upgrading existing DM programs and policies; DM governance; Investments for building resilience against chronic disasters; Social protection; Inclusive development; Private sector engagement; Resilient post-disaster response and recovery; and Emerging risks.

NPDM 2021-2025 focus areas: Bangladesh aligns its DM strategies and plans with SFDRR and the following focus areas will enable implementing them: Promoting policy coherence among DM and development in-country; Making disaster risk reduction a development practice to achieve resilient public investment and the SDGs; Encouraging private sector engagement towards risk sensitive investments; Building capacity and leadership to implement NPDM 2021-2025 at the national and local level. These areas will need to be supported by adequate capacity and resources at the local level; knowledge and

information from the scientific and academic community; and practical guidance and tools, following an inclusive approach. NPDM 2021-2025 thus provides two main implementation guides: Broad policy direction in terms of national level action plans to guide DM in Bangladesh in alignment with SFDRR in the national context of the SDGs; Action plans with indicative timeframes over the next 5 years and 34 core targets to be continued until 2030.

Inclusion as an underlying strategy: Social inclusion is an underlying and cross-cutting strategy in all the action plans of NPDM 2021-2025, and were informed by the outputs of stakeholder consultations. Two main inclusivity areas should inform all DM initiatives, policies, programs and planning: To ensure incorporation of gender issues in decision making and participation of women and men in all NPDM 2021-2025 priority actions; To ensure adequate considerations for people with vulnerabilities across implementation of NPDM 2021-2025.

Accountability framework: Implementation of NPDM 2021-2025 is linked to the framework of national policy, legislation and business rules, involving various strategies, including: Ministry, department and agency focal point; Links between policy and operations; Expanding the scope of planning; Political consensus and allocation of resources; Contingency/Preparedness plan; Periodic review of the implementation of the plan; Funding requirement and resource mobilization; and Coordination, Communication and Cooperation.

Priority level action plans: The extensive stakeholder and expert consultations undertaken to develop NPDM 2021-2025 focused on the following SFDRR priorities and action plans were derived following an ‘all-hazards’ approach with hazard-specific activities linked to broader priority level action plans.

- *Priority 1: Understanding disaster risk* – Action plans under this priority focus on raising awareness, research and development activities, networking, and information/knowledge management.
- *Priority 2: Strengthening disaster risk governance to manage disaster risk* – This priority area is concerned with inclusion of Disaster Impact Assessment (DIA) into policy, inter-ministerial coordination, institutional capacity strengthening, public-private engagement, and international and regional cooperation.
- *Priority 3: Investing in disaster risk reduction for resilience* – Under this priority, actions plans include nationwide capacity building, physical works for resilience, DM financing, institution building, addressing the key hazards of floods and cyclones, but also following an ‘all-hazards’ approach.
- *Priority 4: Enhancing disaster preparedness for effective response and to “Build Back Better” in recovery, rehabilitation and reconstruction* – Concerned action plans include strengthening forecasting and early warning systems, emergency response capacity building, sector-wise preparedness, inclusive recovery and rehabilitation, business continuity, and multi-hazard response and recovery measures.

Investment priorities for NPDM 2021-2025: To aid the planning process in terms of timeframes, the above priority actions are abbreviated to summary action statements corresponding to the SFDRR priorities (P1, P2, P3 and P4).

Timeline, actions and targets of NPDM 2021-2025: This is an indicative plan for 2020-2030 when the SFDRR is its full of operation. The timeline for the 5-year NPDM 2021-2025 has three program periods: 2021 - preparatory year with continuation of existing programs; 2021-2022 - initiation of new actions plus actions continuing from the previous period; and 2023-2025 - more initiatives and an activity peak relating to expected growth in institutional capacity. Many of the core targets will continue to be implemented over the long term until 2030. After each period, review and updating processes will be undertaken with stakeholders' feedback, making NPDM 2021-2025 an adaptive document.

A set of tables are presented showing the action plans according to the 3-block timeline, with the summary actions grouped according to the SFDRR priorities with the corresponding 34 core targets to be committed by GoB.

Table of Contents

Executive Summary	i
Acronyms	ix
1. National Planning for Disaster Risk Management	1
1.1. Preamble	1
– <i>Government vision</i>	
– <i>MoDMR mission</i>	
– <i>Core goals: Saving lives; Protecting investments; Effective recovery for resilience</i>	
1.2. Overview of NPDM 2016-2020	3
1.3. Achievements, lessons and remaining gaps of NPDM 2016-2020	4
1.4. NPDM 2021-2025: Addressing a changing risk context	6
1.5. Purpose and approach of NPDM 2021-2025	8
1.6. Strategic aims and objectives	7
1.7. Legal context	8
1.8. Scope	9
1.9. Plan development process	9
2. Risk Contexts and Trends	10
2.1. A changing risk environment	10
2.2. Main hazards	11
– <i>Flood</i>	
– <i>Cyclone and surge, tornado</i>	
– <i>Earthquake</i>	
– <i>Riverbank erosion</i>	
– <i>Landslide</i>	
– <i>Salinity intrusion</i>	
– <i>Drought</i>	
– <i>Tsunami</i>	
– <i>Lightning</i>	
– <i>Arsenic contamination</i>	
– <i>Human-induced hazards</i>	
– <i>Biological hazards</i>	
2.3. Disaster and development linkages	14

3. Institutional Structure and Drivers for Disaster Management	15
3.1. National DM instruments	15
– <i>National DRM Plan (NPDM)</i>	
– <i>DM policy</i>	
– <i>DM Act 2012</i>	
– <i>Standing Orders on Disaster 2019</i>	
3.2. Institutional Structure	15
3.3. Disaster-Development linkages – national and international frameworks	17
– <i>Vision 2041</i>	
– <i>8th Five-Year Plan</i>	
– <i>Bangladesh Climate Change Strategic Action Plan (BCCSAP)</i>	
– <i>Paris Climate Change Agreement</i>	
– <i>Sustainable Development Goals (SDGs)</i>	
– <i>Sendai Framework for Disaster Risk Reduction (SFDRR)</i>	
4. Vision, Strategies and Priorities of NPDM 2021-2025	20
4.1. Vision: building on achievements	20
4.2. Strategic directions	20
– <i>Upgrading existing DM programs and policies</i>	
– <i>DM governance</i>	
– <i>Investments for building resilience against chronic disasters</i>	
– <i>Social protection</i>	
– <i>Inclusive development</i>	
– <i>Private sector engagement</i>	
– <i>Resilient post-disaster response and recovery</i>	
– <i>Emerging risks</i>	
4.3. NPDM 2021-2025 focus areas	21
4.4. Inclusion as an underlying strategy	21
4.5. Accountability and monitoring framework	22
4.6. Priority level action plans	24
– <i>Priority 1: Understanding disaster risk</i>	
– <i>Priority 2: Strengthening disaster risk governance to manage disaster risk</i>	
– <i>Priority 3: Investing in disaster risk reduction for resilience</i>	
– <i>Priority 4: Enhancing disaster preparedness for effective response and to “Build Back Better” in recovery, rehabilitation and reconstruction</i>	
4.7. Investment priorities for NPDM 2021-2025	27
4.8. Timeline, actions and targets of NPDM 2021-2025	29
– <i>Key targets of NPDM 2021-2025</i>	

Appendixes	41
Appendix 1: National level actions from the Sendai Framework for Disaster Risk Reduction	
Appendix 2: Indicators for Measuring Resilience	47

Acronyms

ADB	Asian Development Bank
BCCSAP	Bangladesh Climate Change Strategic Action Plan
BNBC	Bangladesh National Building Code
BWDB	Bangladesh Water Development Board
CCA	Climate Change Adaptation
COVID-19	Corona Virus Disease - 19
CRI	Climate Risk Index
DAE	Department of Agricultural Extension
DC	Deputy Commissioner
DDM	Department of Disaster Management
DDMC	District Disaster Management Committee
DRM	Disaster Risk Management
DWA	Department of Women Affairs
EPAC	Earthquake Preparedness and Awareness Committee
FPOCG	Focal Point Operation Coordination Group of Disaster Management
FSCD	Fire Service Civil Defence
GAR	Global Assessment Report
HBRI	House Building Research Institute
ILO	International Labour Organization
IMDMCC	Inter-Ministerial Disaster Management Coordination Committee
JICA	Japan International Cooperation Agency
JMREMP	Jamuna-Meghna River Erosion Mitigation Project
MoDMR	Ministry of Disaster Management and Relief
NDMAC	National Disaster Management Advisory Committee
NDMC	National Disaster Management Council
NOC	No Objection Certificates
NPDM	National Plan of Disaster Risk Management
NPDRR	National Platform for Disaster Risk Reduction
NRP	National Resilience Programme
OSHE	Occupational Safety, Health and Environment Foundation
RMG	Ready Made Garment
SDG	Sustainable Development Goals
SFA	SAARC Framework for Action
SFDRR	Sendai Framework for Disaster Risk Reduction
SOD	Standing Orders on Disasters
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
UZDMC	Upazila Disaster Management Committee
WDMC	Ward Disaster Management Committee
WB	World Bank
WFP	World Food Programme

1. National Plan for Disaster Management

1.1 Preamble

1. Disaster risk reduction and emergency response and recovery is integrated in disaster management (DM) policy and practice in Bangladesh as exemplified in the vision of the Government, which is translated into practice in the mission of the Ministry of Disaster Management and Relief (MoDMR).

Government Vision

“The disaster management vision of the Government of the People’s Republic of Bangladesh is to reduce the risk of people, especially the poor and the disadvantaged, from the effects of natural, environment and human induced hazards to a manageable and acceptable humanitarian level and to have in place an efficient emergency response management system.”

MoDMR Mission

“To achieve a paradigm shift in disaster management from conventional response and relief to a more comprehensive risk reduction culture, and to promote food security as an important factor in ensuring the resilience of communities to hazards.”

2. The significance of disaster management and resilience building is enormous in the developmental context of Bangladesh. Considering the changes in the disaster patterns and other factors over the years, preparation and updating of the country’s plan for DM is undertaken on a regular basis in 5-year cycles.
3. National Plan for Disaster Management (NPDM) 2016-2020 has completed its term and National Plan for Disaster Management (NPDM) 2021-2025 is a follow-up of the earlier plan. It enhanced coherence and alignment with the implementation of 2030 global agreements including SFDRR, Climate Change Agreement and the Sustainable Development Goals (SDGs). Considering all the changes occurring in the interim and recognizing the need for continual development, GoB has decided to take stock of the progress made in the implementation of the NPDM (2016-2020) and draw lessons from the past five years to feedback into the plan for 2021-2025. The new plan NPDM 2021-2025 will be periodically reviewed and updated and thus will be a live and adaptive document.
4. NPDM 2021-2025 is designed to support the government of Bangladesh’s target to become a middle-income country by 2021 and a developed country in 2041. The plan, which sets out priorities and core targets for the next five years within a longer-term perspective for 2030, aims to realize the country’s economic and development goals by safeguarding them from the impacts of disasters through disaster management (DM) for resilience. DM to achieve resilience is highly important in Bangladesh for reducing the adverse impacts of disasters and thereby safeguarding the socio-economic progress of the country and contributes towards sustainable development.

5. **The plan has three core goals:**

- Saving lives
 - Protecting investments
 - Effective recovery and rebuilding
6. The plan is built on GoB's past successes in disaster risk reduction by making a paradigm shift from purely emergency response to include measures for building resilience. However, it also critically analyzes disaster risk in the current development context within changing social, political, economic and environmental circumstances. It is developed in line with the Disaster Management Act and other policies of GoB including the 8th Five Year Plan and the Delta Plan. The plan is consistent with GoB's commitment to the Sustainable Development Goals (SDGs), Paris Climate Agreement and Sendai Framework for Disaster Risk Reduction (SFDRR).
7. A phase-wise approach is adopted by the plan. This proposes 34 key targets to be completed or initiated by 2025 and continued until 2030.
8. Bangladesh has taken a holistic approach towards disaster management, where emphasis has been given to working together with all stakeholders to build strategic, scientific and implementation partnerships with all relevant government departments and agencies, and other key non-government players including NGOs, academic and technical institutions, the private sector and donors. Significant progress has been made in terms of reducing the vulnerability of Bangladesh's people, for example through an upgraded early warning system, efficient preparedness and community-based response capacity.
9. Bangladesh is in the midst of rapid change spurred by urbanization and climate change, where the nature of disaster risk is also changing. There is thus the need to regularly update and reformulate disaster management plans not only to adapt to the changing circumstances, but to also utilize the opportunities offered by new technologies and global linkages.
10. The national institutional structure and policy instruments are well-established to support the country's efforts in disaster management. Yet again the long, medium and short term plans and programmes of the Government of Bangladesh (GoB) have included disaster management as a priority area. The National Plan for Disaster Management (NPDM 2021-2025) builds on the achievements and existing institutional framework in Bangladesh and aims to guide national efforts to achieve key disaster management priorities. The role of GoB is primarily to continue ensuring that disaster management for resilience is a focus of national policy and programmes. NPDM 2021-2025 serves as a transformational instrument to build the resilience of the vulnerable people of the country by addressing existing risks and avoiding the creation of new risks. It builds on the preceding National Plan for Disaster Management (NPDM 2016-2020).

1.2 Overview of NPDM 2021-2025

11. The National Plan for Disaster Management (NPDM 2021-2025) is the successor to the previous 5-year National Plan for Disaster Management (NPDM 2016-2020). NPDM 2016-2020 was the first policy planning document of its kind and an outcome of the national and international commitments of the Government of Bangladesh (GoB) and the Disaster Management and Relief (MoDMR) for addressing the disaster risks in the country comprehensively. The plan reflects the basic principles of the SAARC Framework on Disaster Management.
12. NPDM 2016-2020 was developed on the basis of the GoB Vision and MoDMR mission to reduce vulnerability, particularly of the poor, to the effects of natural, environmental and human-induced hazards to a manageable and acceptable humanitarian level by: (a) Bringing a paradigm shift in disaster management from conventional response and relief practice to a more comprehensive risk reduction culture; and (b) Strengthening the capacity of the Bangladesh disaster management system in improving the response and recovery management at all levels. Thus the aim was to build resilience through improved disaster risk reduction policies and practices, and at the same time maintain and improve capacity for disaster response and recovery as part of the humanitarian mandate of MoDMR.
13. NPDM 2016-2020 reflected the paradigm shift in disaster management from conventional response and relief towards resilience.
14. The key focus of NPDM 2016-2020 was to establish institutional accountability in preparing and implementing disaster management plans at different levels of the country. It included examples of Development Plans incorporating Disaster Risk Reduction and Hazard Specific Multi-Sectoral Plans to be used as a tool for reducing risk and achieving sustainable development.
15. Evident in NPDM 2016-2020 was the purpose of GoB to implement its global and national commitment for establishing a disaster risk reduction framework. Execution of the Standing Orders on Disaster, drafting of the Disaster Management Act, developing the National Disaster Management Policy, launching of the MoDMR (MoDMR was at that time the Ministry of Food and Disaster Management) Corporate Plan, developing the Bangladesh Disaster Management Model and developing the National Plan for Disaster Management were the major milestones.
16. The goal of NPDM linked to international and national drivers so that the plan could articulate the long-term strategic focus of disaster management in Bangladesh. NPDM 2016-2020 was informed by the SFDRR, SDG and the Paris Agreement Climate Change. Inclusion of a Policy Matrix in the plan on Comprehensive Disaster Management towards poverty reduction and growth in Poverty Reduction Strategy (PRS) was at the national level an indicator of mainstreaming risk reduction and consideration of disaster-development linkages.
17. It was expected that NPDM 2021-2025 would contribute towards the formulation of a way forward for the development of strategic and operational plans by various entities. It was indicative to what the relevant regional and sectoral plans would consider to address the key issues like risk reduction, capacity building, climate change adaptation, livelihood security,

gender mainstreaming, community empowerment and response and recovery management. The plan aimed to act as a basic guideline for all relevant agencies in strengthening working relations and enhancing mutual cooperation. This is an area that requires continued attention, which is reiterated in the new NPDM 2021-2025.

18. NPDM 2021-2025 recognized the need for addressing emerging issues such as climate change, drought, desertification and human induced hazards in national policies and plans. For the first time, a national document on disaster management had included both natural and human-induced hazards in its action plan, involving government, non-governmental organizations and the private sector.

1.3 Achievements, lessons and remaining gaps of NPDM 2016-2020

NPDM 2016–2020 is a successor to the previous NPDM 2010–2015 which was designed for implementation by MoDMR in partnership with other relevant ministries and NGOs, and targeted for addressing the disaster risks faced by vulnerable communities in the disaster-prone context of Bangladesh.

The purpose of the plan was to guide implementation of the Disaster Management Act, allowing GoB ministries and other agencies to use it to produce their Annual Work Plans.

A set of objectives allows operationalising the aims through identifying priority actions, providing a roadmap for implementation of at least 20 core investments, incorporating DM aspects in sectoral plans, exploring public-private investments, ensuring inclusivity, addressing emerging risks, promoting risk governance and illustrating how the work of various stakeholders can contribute to GoB's DM vision.

The plan aims to promote risk informed planning and implementation of investment initiatives for business continuity in disasters. The plan embodies eight key strategic directions for achieving resilience (i) Upgrading existing DM programs and policies (ii) DM governance (iii) Investments for building resilience against chronic disasters (iv) Social protection (v) Inclusive development (vi) Private sector engagement (vii) Resilient post-disaster response and recovery and (viii) Emerging risks.

The plan is well synchronized but may be a bit ambitious of having 34 targets. To implement such a plan inter-ministerial engagement and mainstreaming at all levels of government would be necessary, but quite often, not only in Bangladesh but in many countries around the world this remains a challenge, where often different ministries, NGOs operate as silos and are even territorial.

The greatest hurdle for progressing in the implementation process was persistent barrage of disasters continuously distracting institutional attention and action to focus on emergency response.

Despite the Plan timeline ending in 2020, there is provision to continue implementing the targets until 2030. There is thus opportunity for flexibility and having an incremental and gradual approach to implementation, which could prove to be a practical approach to implementing an ambitious set of action plans. NGOs and Private Sector in Bangladesh can be valuable partners of the plan.

The experiences from NPDM 2016-2020 offered valuable lessons for the next plan. A review undertaken by a group of independent consultants pointed to several disadvantages in the plan and

its implementation, and noted that the following in particular needed to be addressed in the next plan:

- *Urban disasters pose a particular challenge:* A clearly defined pre-established coordination mechanism and incident command system for urban disasters is needed. The cadres of urban volunteers being developed can be effective in dealing with risk assessment and risk reduction, as well as crisis response, but this will require an institutional mechanism to manage and keep the volunteers motivated and engaged.
- *Retraining and 're-tooling' district and Upazila administration:* At the district and Upazila level, the local officials may be generally aware of the SOD, but often require further capacity building on emerging concepts of disaster preparedness, DRR and resilience, as well as on coordination systems involving international and national agencies in times of major disasters.
- *Resourcing the plan:* The safety net and social protection programme provides an excellent opportunity to strengthen risk management and risk reduction in Upazilas and Unions and enhance resilience of the poor and vulnerable to shocks and stresses.
- *Less integration of gender in the plan:* Despite evidence that disasters affect men, women and children differently, the plan – and the actions emanating from it – were weak on addressing the gendered nature of vulnerability and impacts of disasters.
- *Coherent information management is the key to good disaster response:* The current system of information generation and dissemination by multiple agencies (DMIC, NDRCC and AFD) requires more coordination. The Government needs to develop a vision for the more appropriate system and then move forward towards it so that all future investments in this area clearly contribute to the achievement of the agreed vision.
- *Synergy between CCA and DRR plans:* There is an increasing convergence between elements of CCA and DRR agendas in so far as climate related stress directly affect vulnerability and exacerbate disaster risks. Greater emphasis will be needed in the future on bringing about coherence and synergy between the two plans (CCA and DM) as well as in monitoring their implementation.
- *Monitoring mechanism:* The plan needs to be accompanied by an inter-ministerial mechanism for monitoring and for ensuring that rules of allocation of business within different departments/ministries incorporated the activities identified in the plan.
- *The concept of integrated DM is complex:* There is a need to build leadership and technical capacity on in the Department of Disaster Management (DDM) to provide assistance on multi-faceted DM and undertake advocacy to facilitate a GoB-wide process. With the changing nature of disaster risk, multi-disciplinary and multi-stakeholder DM needs to be an adaptive field with regular learning.
- *Coordination and command system to manage disaster response:* The country's capacity to provide efficient and timely disaster response in times of major disasters is overwhelmed as coordination and incident command system for such 'non-routine' disasters are not well established. It will also be critical to define the relative DM responsibilities of military and civilian organizations.

- *User-friendliness of the plan:* For a plan to be useful, it needs to be practical, concise and ought to clearly spell out how implementation of it would be monitored and resourced.
- *Inadequate socialization of NPDM 2016-2020:* A proactive communication and dissemination strategy need to be in place to ensure ownership of the plan by various stakeholders.

1.4 NPDM 2021-2025: Addressing a changing risk context

19. NPDM 2021-2025 reaffirms GoB's commitment to strategic planning for disaster management for resilience demonstrated in the preceding NPDM 2016-2020. As clearly articulated then, the focus in the new plan is similarly on disaster risk reduction for achieving resilience, but also as clearly emphasized then, humanitarian response, particularly post-disaster response and recovery is an essential part of the plan aligned to the mandate of MoDMR for "Humanitarian Assistance" management and provision.
20. NPDM 2021-2025 was prepared under the leadership of Ministry of Disaster Management and Relief (MoDMR), GoB. The plan is a follow-up of and based on the lessons and experiences of the earlier NPDM 2016-2020. The National Plan for Disaster Management 2021-2025 for Bangladesh is prepared in full alignment with national and international policy drivers including the 8th 5-year plan and the Sendai Framework for Disaster Risk Reduction (SFDRR). While NPDM 2021-2025 takes national, regional and local priorities into consideration, it recognizes the critical importance of emerging issues and opportunities in the areas of urban disasters, lightning hazards and involvement of the private sector in the disaster management arena.
21. During the timeframe of NPDM 2016-2020, there were good number of natural disasters in Bangladesh and many localized hazard events, with economic losses ranging from 0.8 to 1.1 per cent of GDP. This is a reminder of the necessity to continue improving disaster management in the country to safeguard sustainable development through the planning process of a series of disaster management plans. With increasing urbanization and industrialization, together with climate change, Bangladesh is set to experience newer and dynamic risks, necessitating NPDM 2021-2025 to be flexible and adaptive.
22. The term "disaster management" (DM) is followed in cognizance of disaster response being one of the mandates of MoDMR. But beyond that, here the term encompasses disaster risk reduction and management to achieve resilience. The plan is concerned with all aspects of disasters with the aim of resilience at its core.
23. When NPDM 2016-2020 was at a conclusive stage, the 'Sendai Framework for Disaster Risk Reduction' (SFDRR) was adopted in 2020 at the 3rd United Nations World Conference on Disaster Risk Reduction, Japan. Bangladesh is a signatory to SFDRR and will therefore aim to translate the SFDRR priorities to the national context, which is the approach followed in NPDM 2021-2025.
24. Despite NPDM 2016-2020 is aligned with SFDRR but to some extent it did not adequately address the SDGs as interconnected issues in a coherent manner. NPDM 2021-2025 is a

succinct policy plan and unlike NPDM 2016-2020 did not provide action plans for different administrative levels nor detailed hazard-specific plans. However, many of the consultation processes at the different stages of development of NPDM 2021-2025 preceded SFDRR and had focused on a hazard-based approach; these consultations provided valuable inputs to the plan and their essence has been incorporated. For details of some of the outputs of the consultations, see Appendices 2-3.

25. NPDM 2016-2020 was prepared in a participatory way, having several consultations with stakeholders and established a way forward of effective partnership with organizations working at local, national and regional levels. It was expected to contribute towards developing and strengthening regional and national networks. NPDM 2021-2025 also follows a similar approach – its participatory and inclusive approach is reflected in the extensive stakeholder and expert consultation processes undertaken for developing the plan. Additionally, by aligning with SFDRR and ARPDRR, NPDM 2021-2025 makes provisions for international and regional networks.

1.5 Purpose and approach of NPDM 2021-2025

26. The purpose of the plan is to guide enhancing the implementation of the Disaster Management Act 2012, DM Policy 2015 and SOD 2019 which seek to promote safer and more resilient communities. It is a Government-wide framework for the effective integration of disaster management planning and programming focusing on risk reduction and resilience approach across agencies and sectors. Various ministries of GoB and other relevant agencies are expected to use this framework as a guidance to produce their detailed Departmental/Agency-specific Annual Work Plans.
27. The plan takes the ‘in a ‘whole of society’ approach to disaster risk management and response initiatives through gender responsiveness and disability inclusive approach for resilience. It also seeks to promote mainstreaming of climate change adaptation and mitigation to reduce existing and future risks. The NPDM 2021-2025 pursues disaster risk management into relevant areas of activity of the entire government, businesses and non-government entities. In the advent of rising significance of the area of private sector investment, the plan attaches importance to the engagement of other sectors beyond the public sector.

1.6 Strategic aims and objectives

Aims

- To align with SFDRR and meet its objectives.
- Provide strategic direction to the government ministries, private sector and other stakeholders on priority actions to make Bangladesh a resilient country.
- Provide an analytical framework on how the character of risk is changing to guide the national planning for resilience.
- Provide a set of prioritized actions to be implemented in three phases until the end of 2025.

Objectives

28. Maintaining the overall goal of building a resilient Bangladesh, the major objectives of the plan are to:
- Identify the priority actions to guide the implementation of DM acts, policies and programmes in terms of action plans;
 - Provide a roadmap for progress and implementation of at least 35 core investments;
 - Incorporate DM aspects in the plan and programmes of the sectoral ministries and agencies to ensure risk informed development plans;
 - Explore the investment areas both in public and private sectors and also in hazard-prone regions, communities;
 - Ensure inclusion of disability, class, ethnicity, religious minority and address gender responsiveness in all plans and programmes;
 - Include emerging disaster risks (earthquake), emphasize urban disaster risk (fire, building collapse) and align those in the plan;
 - Promote risk governance in the DM programmes, compliance including oversight and accountability and monitoring; and
 - Illustrate to other ministries, Development Partners, UN agencies, I/NGOs, civil society and the private sector how their work can contribute to the achievements of the strategic goals and government vision for DM.

1.7 Legal context

29. As the principal legal document, the Disaster Management Act 2012 of GoB provides the institutional framework for DM in the country. The National Disaster Management Council (NDMC), headed by the Prime Minister, is the supreme body for providing overall direction for DM, which includes disaster risk reduction, mitigation, preparedness, response and recovery. As DM is a multi-sectoral and multi-functional field, functional and hazard-specific planning and execution responsibilities are vested in agencies with primary technical/management focus related to specific sectors, with the MoDMR having an overall coordinating and facilitating role as “Secretariat” to NDMC.
30. The country has a long-term perspective plan as expressed in the 8th 5-Year Plan, Delta Plan 2100, the DM Act 2012 and other related frameworks as major policy guidance for disaster management. The NPDM is prepared to deal with and achieve the DM aspects of the country’s long-term plan. The plan aims to strengthen implementation of the SFDRR through different ministries/divisions/departments and other actors. It also re-iterated the implementation of SOD 2019.

1.8 Scope

31. NPDM 2021-2025 is GoB's 'white paper' document for the management of disasters and associated events. It includes recurrent and mega disaster, anticipated and climate induced disasters. SFDRR is fundamental to the vision and ambition of the Government of Bangladesh in the area of DM and NPDM 2021-2025 complies with the objectives, priorities and major activities of SFDRR. NPDM 2021-2025 is guided by the mission and disaster management focus of the vision 2041, Delta Plan 2100 and the 8th 5-Year Plan. Following the current and upcoming investment scenario of the country and potential engagement of the private sector, NPDM 2021-2025 promotes risk-informed planning and implementation of investment initiatives for business continuity in disasters.

1.9 Plan development process

32. The methodology for development of NPDM 2021-2025 consisted of a preliminary desktop review which included a review of publicly available documentation on disaster and climate risk management, all national and international frameworks including, laws, rules, policies, strategies, available reports of assessment as well as findings from the review of the NPDM 2016-2020, which was conducted by a team of experts.
33. A committee consisting of 10 members was formed to guide the drafting committee including drafting the contents of NPDM 2021-2025. A Review Panel was formed to review and finalize the plan.
34. The process of developing NPDM 2021-2025 was participatory and inclusive, with a clear identification of local and national priorities through a series of extensive consultations with key stakeholders and experts. Consultations with a wide range of stakeholders including GoB agencies, NGOs and CSOs were initiated by National Resilience Program, JICA, UNDP and MoDMR from 2019, resulting in a 'base document' plan.
35. An intensive review of the Sendai Framework for Disaster Risk Reduction (SFDRR), Sustainable Development Goals (SDGs) and Climate Change Agreement were done to make synergies between international drivers, the country context and priorities linked with the NPDM 2021-2025.
36. Two workshops were conducted on "Disability Inclusive DRM" and "Private Sector and Resilience", which allowed drawing insights from specific important sectors.
37. As part of finalizing the Draft Plan further consultations will take place shortly.

2. Risk Contexts and Trends

2.1 A changing risk environment

38. Bangladesh is highly disaster-prone and throughout its existence has been shaped by the impact of both extensive (low-severity, high-frequency events) and intensive (high-severity, mid-frequency to low-frequency events) natural hazards. As a result, managing disasters and their impact has been a major area of focus, with investments in DM decreasing disaster mortality in the past four decades to 1 per cent in 2020 compared to disaster mortality in the 1970s.
39. The disaster risk context, however, is changing. Bangladesh is as one of the countries in the world most at risk from the negative impacts of climate change including increases in incidence and intensity of extreme weather events and hazards such as soil salinization, rising sea levels and riverbank erosion. There is also the risk of earthquakes, posing a challenge particularly for Bangladesh's growing cities. As recent phenomenon, biological (e.g. Bird Flu, nCOVID-19) hazards and few hydro-meteorological hazards including lightning.
40. Women & girls and Persons with Disability in Bangladesh are disproportionately impacted by disasters. However, their ability to contribute in disaster risk reduction are often overlooked and remain unrecognized, and current national DM systems and mechanisms require more emphasis on managing risks in an inclusive manner.
41. These emerging risks present major challenges to the continued human development, poverty reduction and sustainable economic growth of the country, and to the lives, livelihoods and health of its people. The poorest, most marginalized and vulnerable communities are hardest hit by disasters in Bangladesh as they are repeatedly exposed to natural hazards without the means to recover well.
42. Despite these challenges, Bangladesh has made major gains in improving socio-economic conditions in recent years with positive economic trends, accelerating growth, making growth pro-poor and improving the indicators of social progress. With over 7 per cent economic growth in the last 10 years, the country is moving towards reaching lower middle-income country status by 2021. As an ascending middle-income country, Bangladesh has entered a new development context with a growing asset base and connectedness to global markets.
43. However, the national economy is at risk from disaster events and climate stresses and a large amount of gross domestic product (GDP) is lost each year due to these events. This is affecting the efforts towards middle income country by keeping current trends of GDP that requires to reach to the target goal. To attain and sustain the current effort for resilience it needs effective disaster risk management to protect the development gains.
44. The industrial, SMEs and informal economic sectors are highly vulnerable to economic losses - the garments sector incurs major losses in floods and is particularly at risk from earthquakes. In addition to causing a devastating death toll, a major earthquake would also lead to large economic losses.
45. With urban industrial production facilities and road networks likely to be damaged or blocked by debris, lengthy disruption of business would be expected. With the urban private sector being the major driver of national economic growth, protracted disruption of production due

to the shock of a major earthquake would have a significant, long-lasting negative impact on national economic growth and poverty reduction.

46. The speed of urbanization will be an important driver of change: the majority of new migrants in urban areas will live in informal settlements or inadequate housing. Urban design, planning and delivery of services that both improves the quality of life for residents and makes expanding cities resilient to natural hazards will therefore be a priority.

2.2 Main hazards

Flood

47. Flood is an annual phenomenon generally affecting 30 per cent of the country, but up to 70 per cent in extreme years. Flood-related fatalities are decreasing, but economic losses have been increasing over the years. The government has been developing and implementing various measures to better equip the country to deal with floods. Important initiatives include the flood action plan, flood hydrology study, flood management model study, national water management plan, national water policy, flood early warning study and construction of flood embankments and flood shelters. The flood damage potential is increasing due to climate change, urbanization, growth of settlements in flood-prone areas and overreliance on flood control works such as levees and reservoirs.

Cyclone and surge, tornado

48. Severe cyclones with storm surges sometimes in excess of ten meters frequently impact Bangladesh's low-lying coast. GoB has a well-coordinated cyclone forecasting, early warning and evacuation system and the cyclone mortality rate has been reduced greatly from 300,000 in 1971 to 138,882 in 1991 for the same category of cyclone. However, growing and higher concentration of assets has resulted in increasing economic losses. Tornadoes are seasonal and occur in the pre-monsoons season. The frequency of tornadoes in Bangladesh is among the highest in the world. The Brahmanaria tornado of 2013 struck 20 villages and killed 31 people and injured around 500 in Brahmanbaria district.

Earthquake

49. Bangladesh is located in a tectonically active region and some of the major cities including Dhaka, Chittagong and Sylhet are at risk of massive destruction by earthquakes from nearby seismic faults. To address the earthquake hazard, the Bangladesh National Building Code (BNBC) was updated in 2020. Other initiatives include Urban Community Volunteers trained in search-and-rescue and first aid, training on safe construction to masons and construction workers, and school safety and evacuation drills. The Urban Development Directorate (UDD) is promoting risk-integrated land-use planning and updating the existing policy for planned urbanization. Earthquake risk assessments in some of the main cities was undertaken under CDMP. Earthquakes pose one of the highest risks in Bangladesh and NPDM 2021-2025 has prioritized earthquake risk reduction as a key action plan.

Riverbank erosion

50. Riverbank erosion is a common problem in Bangladesh due to the deltaic topography and it has been forcing people to migrate or resettle. Riverbank erosion has rendered millions homeless; the majority of slum dwellers in large urban and metropolitan towns and cities are victims of erosion. The major rivers like the Jamuna, the Ganges, the Padma, the Lower Meghna, Arial Khan and Teesta are highly erosion-prone. Structural interventions are costly and need to be complemented by non-structural measures, such as erosion prediction and warning. From 2005, prediction activities were funded by the Jamuna-Meghna River Erosion Mitigation Project (JMREMP) and EMIN project of the BWDB and WARPO, and in 2008, by UNDP.

Landslide

51. Landslides have emerged as a major hazard, usually triggered by heavy rainfall in hilly areas (18% of the total area of the country). Human settlements and activities on the slopes makes landslides lethal. An online landslide early warning system has been developed for Chittagong city under the BUET-JIDPUS project. Community-based early warning has been piloted in Cox's Bazar and Teknaf districts under GoB's Comprehensive Disaster Management Programme (CDMP).

Salinity intrusion

52. Salinity intrusion is an increasing hazard in the coastal areas of Bangladesh, posing a threat to ecosystems, livelihoods and public health and diminishing access to freshwater for household and commercial use. About 20 million people in the coastal areas of Bangladesh are affected by salinity in their drinking water. Bangladesh Water Development Board (BWDB) undertook studies on groundwater availability and found in some coastal districts there was no freshwater layer as deep as 300 meters; in many cases, saline water was found in aquifers at 200 meters.

Drought

53. Drought is seasonal – northwestern parts of Bangladesh experience drought in the crop season. During the last 50 years, Bangladesh suffered about severe 20 drought episodes. As much as 20 per cent of the main crop - wet season paddy - may be lost in a typical year due to drought. Drought-prone areas are also affected by cold waves with impacts on human health. There is opportunity for supporting resilience to drought through institutional initiatives. The consultations for developing NPDM 2021-2025 strongly suggested the need for addressing drought through structural and non-structural measures.

Tsunami

54. The 2004 Indian Ocean Tsunami raised awareness of the tsunami hazard, though Bangladesh suffered relatively minor damages. The Bangladesh Meteorological Department monitors tsunami risk and early warning. A tsunami inundation risk assessment was undertaken with support from CDMP for the coastal areas of Bangladesh. The assessment identified fault zones in the Bay of Bengal which could possibly cause tsunami inundation in many coastal areas.

Lightning

55. Bangladesh is prone to electrical storms. Deaths caused by lightning strike often occur during the pre-monsoon season - usually between March and May and often in rural areas where people work outdoors. The open haor areas are particularly at risk. MoDMR has declared lightning strike as a hazard in Bangladesh.

Arsenic contamination

56. Increasing arsenic contamination of groundwater in Bangladesh is a major disaster, especially in the southwest and southeast parts. Out of 64 districts, 61 are seriously affected by arsenic contamination of drinking water. Seventy-five million people are at risk and 24 million potentially exposed to arsenic contamination. GoB has set up the Arsenic Policy Support Unit (APSU) under the Local Government Division of the Ministry of Local Government, Rural Development & Cooperatives in 2003. The National Arsenic Policy and Implementation Plan for Arsenic Mitigation were passed in 2004.

Human-induced hazards

57. Industrial hazards occur regularly in Bangladesh. Many chemical factories and warehouses are located in residential areas, making densely built urban areas highly vulnerable. Chemical explosion is another incident common in the industrial premises in Bangladesh. On average 21 people die in Bangladesh due to toxic chemicals each month.
- **Fire:** Every year, major fires occur causing huge loss of lives and properties in Bangladesh. Bangladesh Fire Service and Civil Defense (BFSCD) is well-trained and equipped, but often hindered by traffic congestions in provision of timely response.
 - **Building collapse:** Weak construction and non-compliance with building regulations cause frequent collapse of buildings in Bangladesh. Such disasters highlight the need to develop an incident command system, training for professional rescue workers and volunteers, adequate and readily accessible tools and prepositioned supplies and better coordination with national and international agencies.
 - **Oil & Toxic Chemical Spills:** Spill of oils and toxic chemicals from maritime vessels is on the rise in Bangladesh. The most recent incident is the oil spill in the Shela river in the Sundarbans protected forest area in 2014. 70,000 liters of oil had to be cleaned up by local residents, Bangladesh Navy and GoB.
 - **Health and Bio-hazard:** Health and Biohazard refer human induced /natural causes which can make human vulnerable to disaster risk by its exposure. In Bangladesh, there are hazardous substances increase the vulnerability by human activities. Use of formalin in preserving fish, fruits and other process is a growing concern for Bangladesh. GoB has taken some regulatory and awareness building programme to protect people from its harm. Water contamination with chemical, microorganism also put people vulnerable thus need appropriate preventive and regulatory initiatives to reduce the risk. Biological hazard is the triggering factor for human health affecting by vector borne disease like bird flu, avian influenza, COVID-19 etc. All these needs include in comprehensive disaster risk management strategy, programmes and plans.

2.3 Disaster and development linkages

58. Disasters are often the outcome of inadequate development choices or gross capacity gaps to implement sound policies and programs to reduce risk. Disasters are a major threat to people's life and livelihoods. In a short time, a disaster can eradicate years of development effort. Catastrophic disasters in Bangladesh have shown how disaster risk and poverty are closely interlinked. Earthquakes pose one of the greatest risk to urban lives and assets where building codes and micro zonation maps are not followed in construction of high-rise buildings.
59. Climate change also poses risks to development, requiring climate change adaptation to be integrated with relevant DM national policies and strategies as well as in the socio-economic development process, natural resources management and livelihoods support efforts. Since poverty, sustainable development, disasters and climate change are closely interlinked, it is crucial to integrate DM measures in development initiatives where people's livelihoods are at risk.
60. DRR/CCA is not only the business of the government, but involves every part of society, every part of the government, and every part of the professional and private sectors with the view that DM for resilience is part of sustainable development.
61. Development plans should be based on disaster risk assessments and avoid generating new risks or exacerbate existing ones. So, when planning for new infrastructure projects or other developments, it needs to be risk-informed so that additional problems are not caused in the future.

3. Institutional Structure and Drivers for Disaster Management

3.1 National DRM instruments

62. DM in Bangladesh is guided by a number of national and international drivers which among others includes: a) Disaster Management Act 2012; b) Standing Orders on Disasters (SOD) first introduced in 1997 and then revised in 2010 and 2019 respectively; c) National Plan for Disaster Management 2010-2015 and 2016-2020 (renamed as NPDM); d) Disaster Management Policy 2015, Disaster Management Act 2012; e) SAARC Framework for Action (SFA) 2006-2020; f) Sendai Framework for Disaster Risk Reduction (SFDRR) 2021-2030; g) Asian Regional Plan for Disaster Risk Reduction (ARPDOR); and the Sustainable Development Goals (SDGs). GoB's 8th Five Year Plan (draft) reflects the essence of international disaster related frameworks in its long-term sectoral plans that allow translating disaster risk reduction measures into the different sectors.

National DM plans (NPDM)

63. The National Plan for Disaster Management (2010-2015, 2016-2020) is linked to global frameworks including the HFA and SFDRR. The approach to planning is guided by the core aim of achieving resilience, with a group of broad-based strategies including: a) DM involves the management of both risks and consequences of disasters that include both resilience building and emergency response and post-disaster recovery; b) Community involvement in preparedness programmes is a major focus. Involvement of local government bodies is an essential part of the strategy. Self-reliance should be the key for preparedness, response and recovery; c) Non-structural mitigation measures such as community disaster preparedness training, advocacy and public awareness are given high priority, requiring integration of structural and non-structural measures.

DM policy

64. The Disaster Management (DM) Policy has been approved by GoB in 2020, with a strong emphasis on Disaster Risk Reduction (DRR). The policy places importance on the DM fund as a dedicated financial resource for DM activities at all levels. It is expected that the policy will be an effective instrument to advance DM in Bangladesh.

DM Act 2012

65. The objectives of this Act are substantial reduction of disaster risk to an acceptable level with appropriate interventions. The Disaster Management Act 2012 of GoB endorses the Standing Orders on Disaster (SOD) and provides the legal basis for DM in the country.

3.2 Institutional structure

66. The Ministry of Disaster Management and Relief (MoDMR) of the Government of Bangladesh has the responsibility for coordinating national disaster management efforts across all agencies. The National Disaster Management Council (NDMC), headed by the Prime Minister, is the supreme body for providing overall direction for DRM which includes disaster risk reduction, mitigation, preparedness, response and recovery. As DRM is a multi-sectoral and multi-

functional discipline, functional and hazard-specific planning and execution responsibilities are vested in agencies with primary technical /management focus related to specific sectors, with MoDMR having an overall coordinating and facilitating role as “Secretariat” to NDMC.

67. The Standing Orders on Disaster (SOD) issued by the ministry in 1997 was an important milestone towards guiding and monitoring DRM activities in Bangladesh.
68. The National Disaster Management Council (NDMC) and Inter-Ministerial Disaster Management Coordination Committee (IMDMCC) coordinate disaster-related activities at the National level. Coordination at District, City Corporation/Municipality, Upazila (Sub-district) and Union levels is done by the respective local level Disaster Management Committees (DMCs). A series of inter-related institutions, at both national and sub-national levels, function to ensure effective planning and coordination of disaster risk reduction and emergency response management.
69. Key national level DM institutions include:
 - National Disaster Management Council (NDMC) headed by the Honourable Prime Minister to formulate and review DRM policies and issue relevant directives;
 - Inter-Ministerial Disaster Management Coordination Committee (IMDMCC) headed by the Honourable Minister in charge of the Disaster Management and Relief Division (DM&RD) to implement disaster management policies and decisions of NDMC/ GoB;
 - National Disaster Management Advisory Committee (NDMAC) headed by an experienced person;
 - National Platform for Disaster Risk Reduction (NPDRR) headed by Secretary of MoDMR;
 - Earthquake Preparedness and Awareness Committee (EPAC) headed by Honourable Minister for MoDMR;
 - Focal Point Operation Coordination Group of Disaster Management (FPOCG) headed by the Director General of DDM.
 - Chemical Disaster Management and Awareness Committee headed by Secretary MoDMR
 - Forecast based Financing/Action (FbF/A) headed by an Additional Secretary, MoDMR
70. At sub-national levels:
 - Divisional Disaster Management Committee (Div.DMC) headed by divisional Commissioner;
 - District Disaster Management Committee (DDMC) headed by the Deputy Commissioner (DC);
 - City Corporation/Municipality Disaster Management Committee at City and ward levels
 - Upazila Disaster Management Committee (UZDMC)s at upazila, union and ward levels.

3.3 Disaster-Development linkages – national and international frameworks

Vision 2021

71. The vision of the perspective plan is to take effective measures to protect Bangladesh from the adverse effects of climate change and global warming. The plan targets to take all possible steps to protect vulnerable people from natural calamities and human induced, to take actions for the prevention of industry and transport related air pollution and to ensure disposal of waste in a scientific manner. Steps will also be taken to make Bangladesh an ecologically attractive place and to promote tourism.

8th Five-Year Plan

72. The overall goal of DRM in the Bangladesh context is to build resilience of the poor and reduce their exposure and vulnerability to geo-hydro-meteorological hazards, environmental shocks, human induced disasters, emerging hazards and climate-related extreme events to make cities, human settlements and resources safe, resilient and sustainable.
73. Under the 8th FYP, the Disaster Management Act of 2012 will be institutionalized and implemented to achieve adequate decentralization throughout the Government and accountability for delivery. Adequate national resources will be identified to finance risk reduction and enable appropriate allocation of resources for disaster resilience through local and national level mechanisms. Regional cooperation will be further strengthened for DRM and resilience.

Bangladesh Climate Change Strategic Action Plan (BCCSAP) 2009

74. GoB's Vision is to eradicate poverty and achieve economic and social wellbeing for all the people. This will be addressed through a pro-poor Climate Change Strategy, which prioritizes adaptation and disaster risk reduction, and also addresses low carbon development, mitigation, technology transfer and the provision of adequate finance. Accordingly, GoB has developed and enacted the Bangladesh Climate Change Strategy and Action Plan (BCCSAP) in 2009. It also includes a 10-year program to build the capacity and resilience of the country to meet the challenge of climate change over the next 20-25 years based on the following thematic areas with full cognizance of the link between climate change and disasters:
 - Food security, social protection and health targeted for the poorest and most vulnerable in society;
 - Comprehensive disaster management to further strengthen the country's already proven disaster management systems;
 - Infrastructure to ensure that existing assets (e.g. coastal and river embankments) are well-maintained and fit-for-purpose;
 - Research and knowledge management to predict the likely scale and timing of climate change impacts on different sectors;

- Mitigation and low carbon development to evolve low carbon options;
- Capacity building and institutional strengthening to enhance the capacity of government ministries and agencies.

Paris Agreement on Climate Change

75. The Paris Agreement is an agreement within the United Nations Framework Convention on Climate Change (UNFCCC) dealing with greenhouse gases emissions mitigation, adaptation and finance starting in the year 2025. Adopted by consensus in December 2020, it was opened for signature in April 2021. As of October 2021, 192 UNFCCC members have signed the treaty, 89 of which have ratified it. Given the as yet low levels of industrial development, Bangladesh has the opportunity to benefit from this agreement to leapfrog into a sustainable future by investing more on renewable energy.
76. The agreement aims to mobilize \$100 billion annually by 2025 to address the needs of developing countries and help mitigate climate-related disasters. Strengthening the resilience and adaptive capacity of more vulnerable regions such as Bangladesh are emphasized to go with efforts to raise awareness and integrate measures into national policies and strategies. Addressing climate change is one of the 17 Global Goals of the 2030 Agenda for Sustainable Development. An integrated approach is crucial for progress across the multiple frameworks.

Sustainable Development Goals (SDGs)

77. Officially known as ‘Transforming our World: The 2030 Agenda for Sustainable Development’, the Sustainable Development Goals (SDGs), is a set of 17 aspirational “Global Goals” with 169 targets between them. The SDGs were adopted at the UN Sustainable Development Summit in 2015, USA. The Sustainable Development Goals (SDGs) aim to place countries and the planet on a more sustainable path by 2030. These goals are the foundation of an ambitious new development agenda that seeks to end poverty, help the vulnerable, transform lives and protect the planet. The 17 SDGs are expected to guide policy and funding for the next 15 years. The SDGs build on the success of the Millennium Development Goals (MDGs). The MDGs helped establish measurable, universally approved objectives for eradicating extreme poverty and hunger, preventing deadly but treatable disease, and expanding educational opportunities for all.
78. Disaster risk reduction for resilience is the foundation for achieving the SDGs. Each of the SDGs rely on reduced disaster impacts to meet its targets. NPDM 2021-2025 articulates the disaster-development linkages as relating to the broader national development agenda. Resilience allows safeguarding development efforts and investments from the negative impact of disasters and provides opportunity for socio-economic development through maximizing return on risk-informed investments, revenue, and private and public sector budgets.

Sendai Framework for Disaster Risk Reduction (SFDRR)

79. SFDRR is fundamental to the vision and ambition of GoB and thus requires full implementation. It is integrated into the objectives, goals and activities described below and serves as a template for translation to the Bangladesh context. The Government's disaster resilience strategy is in line with the SFDRR, which it has adopted. The framework aims to achieve the following in the coming 15 years:

- "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."
- This outcome will be realized by the achievement of the following goal, drawing on the "strong commitment and involvement of political leadership in every country at all levels in the... creation of the necessary conducive and enabling environment."
- "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 that prevent and reduce hazard exposure and vulnerability to disaster, increase preparedness for response and recovery, and thus strengthen resilience."

80. The framework is built on four priority areas of action which are integrated into the goals and activities for DM of the 8th Five Year Plan:

- Understanding disaster risk;
- Strengthening disaster risk governance to manage disaster risk;
- Investing in disaster risk reduction for resilience;
- Enhancing disaster preparedness for effective response and to "Build Back Better" in recovery, rehabilitation and reconstruction.

4. Vision, Strategies and Priorities of NPDM 2021-2025

4.1 Vision: building on achievements

81. NPDM 2021-2025 is also based on SFDRR and follows the national targets indicated in SFDRR and is aligned with its four priorities (see Appendix 1). Such alignment also relates to the Asian Regional Plan for Disaster Risk Reduction (ARPD RR), which derives from SFDRR.
82. Over the last few decades Bangladesh has invested strongly on disaster risk reduction. As a result, despite frequent disasters:
 - Disaster mortality has reduced significantly;
 - Over 7 per cent GDP growth was maintained;
 - Food and nutrition security is improved.
83. However, a changing risk context due to climate change, urbanization and other factors means new challenges, but also opportunities for building resilience. Thus, there is the need to build on past achievements and tackle new risks, and the vision of NPDM 2021-2025 is:
“Winning resilience together against all disasters”.

4.2 Strategic directions

84. The above description of the disaster and institutional context of Bangladesh as well as the review of NPDM 2016-2020 points to a number of strategic directions responsive to the key needs of the country in terms of achieving resilience. Translating these strategies into programs and operations would involve identifying firstly priorities, and then sectoral components as well as inter-sectoral linkages. Eight key strategic directions were derived:
85. **Upgrading existing DRM programs and policies**, for example activation of urban DMCs, capacity raising of CPP;
86. **DM governance** as a specific area led by MoDMR with inter-ministerial mainstreaming linkages to relevant ministries;
87. Intensive **investments for building resilience against chronic disasters** such as floods and drought;
88. **Social protection** policies and programs to address poverty and vulnerability and contribute to resilience;
89. **Inclusive development** incorporating disaster risk reduction with sensitivity to gender, disability, age and other vulnerabilities;
90. Risk-informed **private sector engagement** to risk-proof economic and physical investments and for business continuity;
91. **Resilient post-disaster response and recovery** following a strengthening ‘whole of society’ approach;

92. Planning for **emerging risks** with specific focus on potentially catastrophic urban disasters such as earthquakes.

4.3 NPDM 2021-2025 focus areas

93. Bangladesh aligns its DRM strategies and plans with SFDRR, SDG and Climate Agreement. Over the coming years in order to expedite the implementation of SFDRR, additional emphasis will need to be given to:
 - Promoting policy coherence among DRM and development in-country;
 - Making disaster risk reduction a development practice to achieve resilient public investment and the SDGs;
 - Encouraging private sector engagement towards risk sensitive investments;
 - Building capacity and leadership to implement NPDM 2021-2025 at the national and local level.
94. These focus areas also need to be supported by provisioning of adequate capacity and resources at the local level; knowledge and information from the scientific and academic community; and practical guidance and tools. Adopting an inclusive approach – via multi-sector/stakeholder DRR platforms, both at national and local levels – is particularly important. It should embrace the leadership of persons with disability, women, children and youth and the significant contribution of the private sector.
95. NPDM 2021-2025 provides two main implementation guides:
 - Broad policy direction in terms of national level action plans to guide DM in Bangladesh in alignment with SFDRR in the national context of the SDGs;
 - The action plans that are prioritized in line with the national disaster context and institutional framework are given indicative timeframes over the next 5 years and 35 core targets to be continued until 2030.

4.4 Inclusion as an underlying strategy

96. Social inclusion is a basis for achieving resilience and is an underlying and cross-cutting strategy in all the action plans of NPDM 2021-2025. All DRM initiatives, policies, programs and planning are to be inclusive with emphasis on two main areas:
97. To ensure incorporation of gender issues in decision making and ensure participation of women and men, girls and boys in all the priority actions of NPDM 2021-2025.
98. To ensure adequate considerations for people with vulnerabilities (e.g. single marital status, age, disability) in DRM policies and programs and across implementation of NPDM 2021-2025.

4.5. Accountability and monitoring framework

99. Implementation of NPDM 2021-2025 is connected with national laws, rules, regulations, strategies, polices, rules of business and mandates including SOD 2019. For implementation of the plan various strategies have been formulated. These are as below.

Ministry, department and agency focal point

100. The focal point is the key agency that has the authority and resources to coordinate all related bodies for DRM such as ministries, departments, research organizations, international donor agencies, NGOs and the private sector. The agency focal points need a core of well-trained staff and adequate resources and should be supported by appropriate legislation and authority for decision making and implementation of the plan.

Links between policies and operations

101. The system must ensure a very close working relationship between the policy formulating body of each of the ministries and set up a wing or cell to deal with the issues of DRM and CCA within the sectoral laws, policies, plans, projects and programs. Arrangement to be made so that the operational agency must implement the decisions and prepare reports of the actions. For this reason, there are significant advantages in placing the focal point in all the line ministries and in the Prime Ministers' office.

Expanding the scope of planning

102. While most disaster planning describes how to react to a disaster, if disaster risks are to be reduced, it is essential that planning becomes pro-active with an emphasis on preparedness, mitigation and resilience. So disaster and climate risk assessment and risk analysis should be an integral part of decentralized local planning. Donors funding participatory planning and disaster planning initiatives should support the Government to formulate necessary rules, policies, guidelines and tools for a decentralized risk informed planning process in Bangladesh for greater resilience.

Political consensus and allocation of resources

103. Consensus must be reached among all political parties to ensure implementation of national disaster management plans and legislation and allocate resources to execute the plan. International assistance through national budgets can improve national institutional capacities, development performance, and accountability to its citizens.

Contingency / Preparedness plan

104. Contingency / Preparedness Plans providing a description of a systematic approach to disaster preparedness must be prepared by all government departments at all districts, upazilas and unions. The plans must be constantly revised and updated and should be interlocked with and supplemented by compatible local level preparedness plans with a more specific focus on operational issues.

Periodic review of the implementation of the plan

105. 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 MoDMR. It is also required to review the allocations for implementation of the plan by all relevant ministries and departments along with the outputs and outcomes.

Funding requirement and resource mobilization

106. Mobilization of necessary resources for the implementation of the plan by relevant government departments is the important task. Ministries and Departments, local governments will be encouraged to earmark appropriate resources within their budget for DRM. Ministries and Departments, local governments must financially contribute to the priority level actions. They may however request for additional financial assistance for DRM activities from the National/District Disaster Management Fund. The management of the National DRM Fund will be facilitated by MoDMR as per provisions of the rules.

Coordination, Communication and Cooperation

107. 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 same end result.
108. Close working linkages are needed between bodies responsible for relief and mitigation programs to ensure that risk reduction measures are introduced in the immediate post-disaster situation and to enhance future preparedness.
109. Links are critical between national, regional, district and community levels to facilitate implementation and ensure effective vertical communication with, for example, information flowing up and resources flowing down.
110. GoB will engage in bilateral agreements with donor agencies for recovery and rehabilitation. Line Ministries will be encouraged to develop appropriate project proposals to be submitted to potential donor agencies for funding.
111. GoB will engage the participation of the private sector and non-governmental organisations in DRM. In so doing it will also emphasise the importance of resilience and the benefits that can be derived from participating in disaster risk reduction activities.

4.6. Priority level action plans

112. Extensive stakeholder and expert consultations, also focusing on the SFDRR priorities, were undertaken in the process of developing NPDM 2021-2025. The consultations focused on specific hazards as evident from the outputs of the National Consultation Workshop, included in Appendix 3. Because the consultations were grouped into addressing the four SFDRR priorities, action plans could be derived from them that meet each of the priorities, as presented below. This plan follows an ‘all-hazards’ or multi-hazard approach; hazard-specific activities where suggested are linked to broader priority level action plans.

Priority 1: Understanding disaster risk

113. To upgrade and strengthen national awareness raising initiatives on hazards and DRM through community, institutions and media. To involve the community in DRM projects and programs as a way of building awareness, including participating in hazard mapping, risk assessments and risk-informed planning. Production and dissemination of contextually relevant awareness raising materials to be a key component. To utilize contemporary technologies and innovations for improved weather and climate monitoring, prediction and forecasting including upgrading current observation stations and satellites. In addition to hydro-meteorological hazards, information systems and models to monitor other hazards such as landslides and riverbank erosion to be developed.

114. Special attention to be given to awareness raising and data products on earthquakes, particularly in the rapidly urbanizing context. Bangladesh has experience in DRM of cyclones and floods because of their recurrent nature, but yet to experience a major earthquake in recent history although there is high risk. Earthquake risk assessment and mapping to the level of small and medium-sized cities and assessment of current standards of earthquake preparedness and safety to identify existing capacities, gaps and risks are some of the key priority activities.

115. To continue to support and engage in DRM-related research and development activities with academic institutions, scientific and research bodies, both nationally and internationally. Indicative examples of scientific data products include area-based forecasting, flood zoning maps, geomorphological research to understand water-logging, model for sea surface monitoring and coastal tide monitoring and study of river morphology. Studies to be also undertaken on socio-economic and long-term impacts of disasters, particularly in coastal areas experiencing climate change impacts.

116. To invest in creation of a risk repository which is accessible to public sector planners to ensure that major investment of the government is planned and designed with systemic risk information (such as export processing zones).

117. To strengthen regional and international DRM networks and establish new ones to share and learn from experiences elsewhere. To establish a regional hub for transboundary sharing of hydro-meteorological catchment and maritime data, and other data including seismic and tectonic information.

118. To develop information products and management strategies for a range of less prominent but nonetheless devastating hazards including cold wave, lightning, fire, chemical hazards and oil spills. The response, management and building resilience strategies are different for these hazards and require specific studies to be done.

Priority 2: Strengthening disaster risk governance to manage disaster risk

119. To risk-proof public investments and inclusion of Disaster Impact Assessment in the EIA and SIA processes. To invest in building capacity of government staff to utilize the risk information for the planning, implementation and monitoring processes.
120. To undertake inter-ministerial coordination to develop sectoral policies and capacity building, and to review and carry out risk-informed updating and implementation of relevant policies, protocols and legislation such as relating to water management and drainage, safe storage and handling of chemicals and toxic materials, and resilient public buildings and housing through application of building codes and land-use planning.
121. To review and update the National Earthquake Contingency Plan and formulate risk mitigation and contingency plans at the local level.
122. To strengthen the capacity of DMCs at all levels for policy advocacy and effective operations for resilient DRM. To consider strategies for activation of all urban DMCs.
123. To strengthen formal institutional capacities including local financial institutions and insurance specially for agriculture, and to also strengthen the financial capacity of social protection institutions.
124. Invest in risk reduction of private sector for resilience through engagement and dialogue with sector stakeholders. The guidelines to include issues such as risk-proofing investments, business continuity plans and funding DRM projects, and to serve as a legal, technical and accountability instrument.
125. To close gaps in institutional policies and programs regarding drought and cold wave hazards by ensuring the implementation of the National Water Policy and supporting a range of measures such as establishing buffer food stock for crises, drought-sensitive land-use planning, cold shelters for vulnerable people, ground water recharge technology in urban areas and use of rainwater.
126. To strengthen at the national and ministerial level international and regional cooperation and knowledge/information sharing with key DM-related bodies and other ministries.

Priority 3: Investing in disaster risk reduction for resilience

127. To undertake nationwide capacity building for resilience, including dealing with new human-induced and chemical hazards, through training workshops, seminars, drills and simulation exercises and equipment support such as for fire-fighting equipment for Bangladesh Fire Service and Civil Defence, search-and-rescue equipment, personal protective equipment and emergency transportation.
128. To carry out physical works and structural measures for resilience including construction of fire stations in all towns and commercially important areas. The major priorities will be: (i) retrofitting important buildings, (ii) supporting resilient rural and urban housing and infrastructure, (iii) building emergency back-up centers outside Dhaka for earthquake evacuation, creation of open spaces in high-density urban areas and tree plantation. To ensure all new construction complies with the Bangladesh National Building Code (BNBC) and earthquake resilient construction is followed in high-risk areas.
129. To investigate DRM financial options such as private sector investment for resilience, insurance for disaster risk reduction and funding to support resilient and alternative livelihoods, skill development training and initiation of employment for social protection.
130. To invest in resilience institutions including a Research & Development Center for excellence and a National Emergency Operations Center.
131. To strengthen flood management through existing and new policies and programs on river management for erosion-prone areas, riverine and coastal regions, improving urban/rural drainage systems and dredging/re-excavation of water channels, repairing and maintaining existing flood embankments and sluice gates, dams and reservoirs, dikes and levees, retaining ponds, flood channels, and flood walls, building erosion prevention structures and storage facilities for preserving rainwater.
132. To strengthen cyclone management by upgrading and extending of the Cyclone Preparedness Programme (CPP) in all coastal areas and constructing more multipurpose and inclusive killas and shelters with adequate services in all coastal areas.
133. To follow an ‘all-hazards’ approach by recognizing the linkages between the different hazards and developing emergency, resilience and capacity building plans for specific hazards and regions, with attention also to emerging hazards such as lightning, fire and industrial/chemical hazards.

Priority 4: Enhancing disaster preparedness for effective response and to “Build Back Better” in recovery, rehabilitation and reconstruction

134. To strengthen the national forecasting and early warning system, to provide support for community-based early warning systems and to give special attention to developing an early warning system for floods. To expand coverage of existing warning systems and developing systems for hazards including drought, lightning, cold wave, riverbank erosion and landslides.

135. To build capacity of relevant services personnel and volunteers on emergency response including first responder search-and-rescue, first aid and rapid deployment of relief and also to build capacity on earthquake preparedness at municipal and ward levels in large and medium-sized cities. To establish a national DRM network and volunteers' database for quick deployment and response.
136. To formulate and strengthen sector wise preparedness measures and drills specifically for earthquakes in critical facilities including schools and hospitals. Preparedness and emergency response measures to be in place for other critical facilities including transportation buildings, public buildings and evacuation shelters.
137. To develop an early/medium/long-term recovery and rehabilitation strategy with strong inclusion of gender, children, senior citizens and disability for disaster-affected or displaced households. The strategy to have provision for recovery from riverbank erosion, drought and other localized disasters.
138. To create market and value chain facilities to enable communities to operate enterprises during disaster, serve as pre-disaster storage depots and to create alternative livelihood options in disaster hot spots. Other financial instruments to include recovery compensation packages or loans for housing reconstruction and alternative employment generation.
139. To develop policies and programs for emergency preparedness and response to human-induced disasters including factory safety measures, slum firefighting and management of oil spills.
140. To strengthen preparedness and response measures for slow-onset hazards by utilizing forecasting technologies, for example for drought. DRM for drought to involve preparedness activities and contingency planning at all administrative levels in at-risk areas, together with a strategy for recovery and rehabilitation of crops, livestock and from health impacts.

4.7. Investment priorities for NPDM 2021-2025

141. To aid the planning process in terms of timeframes, the above priority actions are abbreviated to summary action statements that capture the key point of each action. The summary action statements are listed below corresponding to SFDRR priorities (P1, P2, P3 and P4).

142. P1: Understanding disaster risk

- Upgrade and strengthen national awareness.
- Awareness raising and data products on earthquakes.
- Contemporary technologies and innovations for improved weather and climate monitoring, prediction and forecasting.
- DRM-related research and development activities on scientific and socio-economic issues.
- Develop and implement tool for disaster impact assessment (DIA) by all sector

- Risk repository for planning major investments
- Strengthen regional and international DRM networks.
- Studies on other hazards (e.g. cold wave, lightning, fire, chemical hazards, health hazard/biological hazard and oil spills).

143. P2: Strengthening disaster risk governance to manage disaster risk

- Risk proof public investments and inclusion of Disaster Impact Assessment.
- Inter-ministerial coordination to develop sectoral policies and capacity building.
- Review and update the National Earthquake Contingency Plan.
- Strengthen the capacity of DMCs; activation of urban DMCs.
- Strengthen formal institutional capacities and social protection institutions.
- Guidelines for private sector investment for resilience.
- Close gaps in institutional policies and programs on drought and cold wave hazards.
- International and regional cooperation and knowledge/information sharing.

144. P3: Investing in disaster risk reduction for resilience

- Nationwide capacity building for resilience.
- Physical works and structural measures for resilience.
- DRM financial options - private sector, insurance and funding for social protection.
- Resilience institutions - Research & Development Center, National Emergency Operations Center.
- Strengthen flood management.
- Strengthen cyclone management.
- Follow an 'all-hazards' approach.

145. P4: Enhancing disaster preparedness for effective response and to “Build Back Better” in recovery, rehabilitation and reconstruction

- Strengthen forecasting and early warning systems.
- Build capacity on emergency response.
- Sector wise and critical facilities preparedness and emergency response measures.
- Inclusive recovery and rehabilitation strategy.
- Financial instruments e.g. recovery compensation or loans.
- Business continuity.
- Emergency preparedness and response to human-induced disasters.

- Preparedness and response measures for slow-onset hazards.

4.8. Timeline, actions and targets of NPDM 2021-2025

146. The timeline for the 5-year NPDM 2021-2025 is structured into three program periods: (a) 2021 is a preparatory year and many of the actions are continuation of existing programs; (b) 2022-2023 is planned for initiation of new actions in addition to existing actions undertaken in the previous period; and (c) 2024-2025 will include more initiatives and an activity peak is planned by taking into account the expected growth in institutional capacity through the actions of the preceding stages. Many of the core targets will continue to be implemented over the long term until 2030.
147. After each of the three periods, the plan will be reviewed and updated based on lessons learned and stakeholders' feedback. NPDM 2021-2025 is therefore an adaptive document that will roll out and gain lessons at successive stages and be regularly updated.
148. Many of the actions that are continued across the different plan periods are essential to DRM in Bangladesh and will form an integral part of any national DRM plan. Many of them are existing programs, which may require upgrading and strengthening, which implementing across the timeline will allow.
149. The tables below show the action plan according to the 3-block timeline, with the summary actions grouped according to the SFDRR priorities with the corresponding 34 core targets to be committed by GoB.

Key Targets of NPDM 2021-2025

Activities	Targets	Lead	Associate	2021	2022	2023	2024	2025
P1: Understanding Disaster Risk								
1. Reviewing and sharing result of existing multi-hazard Risk Assessment and Plans for Earthquake Preparedness and Response Programme	Earthquake preparedness and response programme reviewed	MoDM R	FSCD/ Rajuk/ CC	x	x	x	x	x
2. Conducting and Reviewing Community based Risk Assessment (CRA/URA)	1,000 Union Parishad and 500 city wards conducted CRA/URA	MoDM R	LGIs	100+50	200+100	300+100	300+100	100+150
3. Innovating models for forecasting and warning system (e.g. flood, landslide)	2 models are being implemented and institutionalized	MoDM R/DDM	MoWR	1	1	-	-	-
4. Capacity building programme for professionals, responders and DMCs	500 DMCs, 500 professionals and 5000 responders are trained	MoDM R	LGI/SS D	50+100+1000	100+100+1000	150+100+1000	100+100+1500	100+100+500
5. Updating and developing DRM training curriculum	5 training institutes reviewed curricula and conducting training	MoDM R/DDM	BPAT C, NAPD, NILG, TTC/PTI	1	1	2	1	
P2: Strengthen Disaster Risk Governance								
6. Participating and implementing the decisions of APMCDRR and GPDRR.	Planned activities adopted	MoDM R	Associated ministries	GPDRR (Geneva)	APMCDRR	GPDRR (Geneva)	APMCDRR	GPDRR (Geneva)

7. Implementing of SOD 2019 planned activities including coordination and monitoring	Socialization and implementation continued	MoDM R	Associated ministries	x	X	x	x	x
8. Enhancing SFDRR implementation, monitoring and consolidation of the progress for submission	Operational plan produced in line with SDG	MoDM R	Associated ministries	x	X	x	x	x
9. Establishing National Volunteer Organization	Rule published	MoDM R	FSCD, Scouts, BNCC/Ans & VDP	x				
10. Institutionalizing DIA in preparing TAPP/DPP in development and DRM programme	DIA is being used in DPP/TAPP	MoP	Associated ministries	x	X	x	x	x
11. Strengthening national, regional and international civil-military cooperation for mega disaster response	DREE and other drill continued RCGs decisions are being implemented	MoDM R	AFD, FSCD, SSD, PSD, MoD, MoFA	X	X	X	X	X
12. Reviewing NPDM 2021-2025 periodically through by Inter-Ministerial Disaster Management Coordination Committee (IDMCC)	NPDM reviewed 3 times by IMDMCC	MoDM R	IMDMCC	X		X		X
13. Establishing NEOC and Humanitarian Staging Area (HSA)	NEOC and HSA established and operating	MoDM R	Associated ministries	HSA	NEOC	-	-	-

P3: Investing in disaster risk reduction for resilience								
14. Scaling up/Institutionalization of Flood Preparedness Programme (FPP)	10 districts are implementing FPP through its programme	MoDM R	Associated ministries	1	2	2	3	2
15. Implementing DRR integrated/inclusive social safety net programme	Scaling and piloted DRR integrated/inclusive social safety net programme through 10 different SSN programme	MoDM R	MoSW, LGD, MoWCA, P&ME, MoL&F, MoA etc	2	2	2	2	2
16. Expanding of disability inclusive DRM	Piloted and disseminated disability inclusive DRM	MoDM R, MoSW	MoWCA	X	X	X	X	X
17. Expanding earthquake program including review & update and developing national and local contingency plan	8 new cities and 8 municipalities implementing earthquake preparedness programme	MoDM R, MoH &PW,F SCD, AFD	Associated ministries	1+1	2+2	1+2	2+1	2+2
18. Strengthening Research & Development projects on DRM	Conducted Hazard specific research and DRR in development and paper produced	MoDM R, MoD	MoE, MoS&T, ICTD	X	X	X	X	X
19. Studies on resilience building for at least two human-induced hazards	2 studies conducted and report produced for implementation	FSCD, AFD	MoD MR		1	1		
20. Establishing seismology and earthquake engineering department in universities	At least 2 public universities	MoDM R, MoE, MoH&				X	X	

		PW							
21. Integrating earthquake engineering module in private and public universities	At least 5 universities incorporated	MoDM R, MoE, MoH& PW		1	2	2			
22. Developing and implementing Risk Reduction Action Plan (RRAP) through Community Risk Assessment (CRA) & Urban Risk Assessment (URA) through multi-hazard approach	1000 UP level RRAP developed 300 ward level RRAP/contingency plan developed	MoDM R	LGD	100+50	200+50	300+100	200+50	200+50	
23. Developing & implementing National DRM capacity building plan focusing on Disability inclusiveness and CPM-MH issues	At least 500 responders received Psycho-social management training and provide field services in disaster	MoDM R, MoH	MoS, MoH	100	100	100	100	100	
24. Reviewing and updating of secondary, higher secondary and university level curricula on DM	Curium of the relevant subjects are reviewed and updated up to class XII and 12 university curricula reviewed	MoDM R, MoE, MoP& ME	1+1	2+2	3+2	2+2	2+3	2+2	
25. Reviewing/updating/ developing all guidelines for preparedness and response as per SOD	10 guideline/SOP are updated/prepared	MoDM R	1	2	3	2	2	2	
26. Expanding Capacity raising programme of CPP	Enhanced capacity raising programme to the 6 new CPP regions/districts	MoDM R/CPP	LGD	1	1	2	1	1	

P4: Enhancing disaster preparedness for effective response, recovery and reconstruction								
27. Capacity building of the professional (planner, designer, architecture/structural engineer) on earthquake resilient building construction system	1000 professionals/policy stakeholders are trained	MoDM R,MoH PW, FSCD, AFD, MoE	Other stakeholders	100	200	200	200	300
28. Developing Master Plan of Fire Service for strengthening manmade/natural disaster management system (fire/building, collapse, earthquake)	Master plan are risk informed and response modality strengthened	FSCDm MoH&P W	MoDM R		1			
29. Preparing sectoral DRR strategies/guidelines for ministries/division as per SOD	5 ministries/division to be prepared sectoral guidelines	MoDM R, MoP, MoA, MoF&L S,MoW CA		1	1	1	1	1
30. Preparing recovery strategy/guideline for disasters	Strategies for 5 hazards	MoDM R,LGD, MoH& PW, MoE	Other associated ministries	1	1	1	1	1
31. Mainstreaming of social protection in DRR of disaster resilience coordinated by cell/wing in MoDMR/DDM	Cell established and DRR integrated	MoDM R	Other associated ministr		1			

			ies					
32. Developing guidelines for risk-informed private sector investments.	Guideline produced and disseminated	MoP	Other associated ministries	1				
33. Developing National Logistics Preparedness Plan for effective response	Plan produced and disseminated through	MoDMR	Other associated ministries and other actors		1			
34. Developing National Displacement Management Strategy due to natural disaster	Strategy developed	MoDMR	Other associated ministries and other actors	1				
35. Preparing DRR financing strategies for strengthening resilience	Strategies developed and disseminated	MoF, MoDMR, MoP	Other associated ministries		1			

APPENDIX 1: National level actions from the Sendai Framework for Disaster Risk Reduction (SFDRR)

National level actions

The national level actions below are excerpted from SFDRR and they correspond to the four priority areas of the framework, as shown below. GoB ministries and other relevant stakeholders should take into consideration the key activities listed under each of these four priorities and should implement them, as appropriate, taking into consideration respective capacities and capabilities, in line with national laws and regulations.

Priority 1: Understanding disaster risk

- To promote the collection, analysis, management and use of relevant data and practical information and ensure its dissemination, taking into account the needs of different categories of users, as appropriate;
- To encourage the use of and strengthening of baselines and periodically assess disaster risks, vulnerability, capacity, exposure, hazard characteristics and their possible sequential effects at the relevant social and spatial scale on ecosystems, in line with national circumstances;
- To develop, periodically update and disseminate, as appropriate, location-based disaster risk information, including risk maps, to decision makers, the general public and communities at risk of exposure to disaster in an appropriate format by using, as applicable, geospatial information technology;
- To systematically evaluate, record, share and publicly account for disaster losses and understand the economic, social, health, education, environmental and cultural heritage impacts, as appropriate, in the context of event-specific hazard-exposure and vulnerability information;
- To make non-sensitive hazard-exposure, vulnerability, risk, disaster and loss-disaggregated information freely available and accessible, as appropriate;
- To promote real time access to reliable data, make use of space and in situ information, including geographic information systems (GIS), and use information and communications technology innovations to enhance measurement tools and the collection, analysis and dissemination of data;
- To build the knowledge of government officials at all levels, civil society, communities and volunteers, as well as the private sector, through sharing experiences, lessons learned, good practices and training and education on disaster risk reduction, including the use of existing training and education mechanisms and peer learning;
- To promote and improve dialogue and cooperation among scientific and technological communities, other relevant stakeholders and policymakers in order to facilitate a science-policy interface for effective decision-making in disaster risk management;

- To ensure the use of traditional, indigenous and local knowledge and practices, as appropriate, to complement scientific knowledge in disaster risk assessment and the development and implementation of policies, strategies, plans and programmes of specific sectors, with a cross-sectoral approach, which should be tailored to localities and to the context;
- To strengthen technical and scientific capacity to capitalize on and consolidate existing knowledge and to develop and apply methodologies and models to assess disaster risks, vulnerabilities and exposure to all hazards;
- To promote investments in innovation and technology development in long-term, multi-hazard and solution-driven research in disaster risk management to address gaps, obstacles, interdependencies and social, economic, educational and environmental challenges and disaster risks;
- To promote the incorporation of disaster risk knowledge, including disaster prevention, mitigation, preparedness, response, recovery and rehabilitation, in formal and non-formal education, as well as in civic education at all levels, as well as in professional education and training;
- To promote national strategies to strengthen public education and awareness in disaster risk reduction, including disaster risk information and knowledge, through campaigns, social media and community mobilization, taking into account specific audiences and their needs;
- To apply risk information in all its dimensions of vulnerability, capacity and exposure of persons, communities, countries and assets, as well as hazard characteristics, to develop and implement disaster risk reduction policies;
- To enhance collaboration among people at the local level to disseminate disaster risk information through the involvement of community-based organizations and non-governmental organizations.

Priority 2: Strengthening disaster risk governance to manage disaster risk

- To mainstream and integrate disaster risk reduction within and across all sectors and review and promote the coherence and further development, as appropriate, of national and local frameworks of laws, regulations and public policies, which, by defining roles and responsibilities, guide the public and private sectors in: (i) addressing disaster risk in publically owned, managed or regulated services and infrastructures; (ii) promoting and providing incentives, as relevant, for actions by persons, households, communities and businesses; (iii) enhancing relevant mechanisms and initiatives for disaster risk transparency, which may include financial incentives, public awareness-raising and training initiatives, reporting requirements and legal and administrative measures; and (iv) putting in place coordination and organizational structures;
- To adopt and implement national and local disaster risk reduction strategies and plans, across different timescales, with targets, indicators and time frames, aimed at preventing the

creation of risk, the reduction of existing risk and the strengthening of economic, social, health and environmental resilience;

- To carry out an assessment of the technical, financial and administrative disaster risk management capacity to deal with the identified risks at the local and national levels;
- To encourage the establishment of necessary mechanisms and incentives to ensure high levels of compliance with the existing safety-enhancing provisions of sectoral laws and regulations, including those addressing land use and urban planning, building codes, environmental and resource management and health and safety standards, and update them, where needed, to ensure an adequate focus on disaster risk management;
- To develop and strengthen, as appropriate, mechanisms to follow up, periodically assess and publicly report on progress on national and local plans; and promote public scrutiny and encourage institutional debates, including by parliamentarians and other relevant officials, on progress reports of local and national plans for disaster risk reduction;
- To assign, as appropriate, clear roles and tasks to community representatives within disaster risk management institutions and processes and decision-making through relevant legal frameworks, and undertake comprehensive public and community consultations during the development of such laws and regulations to support their implementation;
- To establish and strengthen government coordination forums composed of relevant stakeholders at the national and local levels, such as national and local platforms for disaster risk reduction, and a designated national focal point for implementing the Sendai Framework for Disaster Risk Reduction 2020–2030. It is necessary for such mechanisms to have a strong foundation in national institutional frameworks with clearly assigned responsibilities and authority to, inter alia, identify sectoral and multisectoral disaster risk, build awareness and knowledge of disaster risk through sharing and dissemination of non-sensitive disaster risk information and data, contribute to and coordinate reports on local and national disaster risk, coordinate public awareness campaigns on disaster risk, facilitate and support local multisectoral cooperation (e.g. among local governments) and contribute to the determination of and reporting on national and local disaster risk management plans and all policies relevant for disaster risk management. These responsibilities should be established through laws, regulations, standards and procedures;
- To empower local authorities, as appropriate, through regulatory and financial means to work and coordinate with civil society, communities and indigenous peoples and migrants in disaster risk management at the local level;
- To encourage parliamentarians to support the implementation of disaster risk reduction by developing new or amending relevant legislation and setting budget allocations;
- To promote the development of quality standards, such as certifications and awards for disaster risk management, with the participation of the private sector, civil society, professional associations, scientific organizations and the United Nations;

- To formulate public policies, where applicable, aimed at addressing the issues of prevention or relocation, where possible, of human settlements in disaster risk-prone zones, subject to national law and legal systems.

Priority 3: Investing in disaster risk reduction for resilience

- To allocate the necessary resources, including finance and logistics, as appropriate, at all levels of administration for the development and the implementation of disaster risk reduction strategies, policies, plans, laws and regulations in all relevant sectors;
- To promote mechanisms for disaster risk transfer and insurance, risk-sharing and retention and financial protection, as appropriate, for both public and private investment in order to reduce the financial impact of disasters on Governments and societies, in urban and rural areas;
- To strengthen, as appropriate, disaster-resilient public and private investments, particularly through structural, non-structural and functional disaster risk prevention and reduction measures in critical facilities, in particular schools and hospitals and physical infrastructures; building better from the start to withstand hazards through proper design and construction, including the use of the principles of universal design and the standardization of building materials; retrofitting and rebuilding; nurturing a culture of maintenance; and taking into account economic, social, structural, technological and environmental impact assessments;
- To protect or support the protection of cultural and collecting institutions and other sites of historical, cultural heritage and religious interest;
- To promote the disaster risk resilience of workplaces through structural and non-structural measures;
- To promote the mainstreaming of disaster risk assessments into land-use policy development and implementation, including urban planning, land degradation assessments and informal and non-permanent housing, and the use of guidelines and follow-up tools informed by anticipated demographic and environmental changes;
- To promote the mainstreaming of disaster risk assessment, mapping and management into rural development planning and management of, inter alia, mountains, rivers, coastal flood plain areas, drylands, wetlands and all other areas prone to droughts and flooding, including through the identification of areas that are safe for human settlement, and at the same time preserving ecosystem functions that help to reduce risks;
- To encourage the revision of existing or the development of new building codes and standards and rehabilitation and reconstruction practices at the national or local levels, as appropriate, with the aim of making them more applicable within the local context, particularly in informal and marginal human settlements, and reinforce the capacity to implement, survey and enforce such codes through an appropriate approach, with a view to fostering disaster-resistant structures;

- To enhance the resilience of national health systems, including by integrating disaster risk management into primary, secondary and tertiary health care, especially at the local level; developing the capacity of health workers in understanding disaster risk and applying and implementing disaster risk reduction approaches in health work; promoting and enhancing the training capacities in the field of disaster medicine; and supporting and training community health groups in disaster risk reduction approaches in health programmes, in collaboration with other sectors, as well as in the implementation of the International Health Regulations (2005) of the World Health Organization;
- To strengthen the design and implementation of inclusive policies and social safety-net mechanisms, including through community involvement, integrated with livelihood enhancement programmes, and access to basic health-care services, including maternal, newborn and child health, sexual and reproductive health, food security and nutrition, housing and education, towards the eradication of poverty, to find durable solutions in the post-disaster phase and to empower and assist people disproportionately affected by disasters.

Priority 4: Enhancing disaster preparedness for effective response and to “Build Back Better” in recovery, rehabilitation and reconstruction

- To prepare or review and periodically update disaster preparedness and contingency policies, plans and programmes with the involvement of the relevant institutions, considering climate change scenarios and their impact on disaster risk, and facilitating, as appropriate, the participation of all sectors and relevant stakeholders;
- To invest in, develop, maintain and strengthen people-centred multi-hazard, multisectoral forecasting and early warning systems, disaster risk and emergency communications mechanisms, social technologies and hazard-monitoring telecommunications systems; develop such systems through a participatory process; tailor them to the needs of users, including social and cultural requirements, in particular gender; promote the application of simple and low-cost early warning equipment and facilities; and broaden release channels for natural disaster early warning information;
- To promote the resilience of new and existing critical infrastructure, including water, transportation and telecommunications infrastructure, educational facilities, hospitals and other health facilities, to ensure that they remain safe, effective and operational during and after disasters in order to provide life-saving and essential services;
- To establish community centres for the promotion of public awareness and the stockpiling of necessary materials to implement rescue and relief activities;
- To adopt public policies and actions that support the role of public service workers to establish or strengthen coordination and funding mechanisms and procedures for relief assistance and plan and prepare for post-disaster recovery and reconstruction;
- To train the existing workforce and voluntary workers in disaster response and strengthen technical and logistical capacities to ensure better response in emergencies;

- To ensure the continuity of operations and planning, including social and economic recovery, and the provision of basic services in the post-disaster phase;
- To promote regular disaster preparedness, response and recovery exercises, including evacuation drills, training and the establishment of area-based support systems, with a view to ensuring rapid and effective response to disasters and related displacement, including access to safe shelter, essential food and non-food relief supplies, as appropriate to local needs;
- To promote the cooperation of diverse institutions, multiple authorities and related stakeholders at all levels, including affected communities and business, in view of the complex and costly nature of post-disaster reconstruction, under the coordination of national authorities;
- To promote the incorporation of disaster risk management into post-disaster recovery and rehabilitation processes, facilitate the link between relief, rehabilitation and development, use opportunities during the recovery phase to develop capacities that reduce disaster risk in the short, medium and long term, including through the development of measures such as land-use planning, structural standards improvement and the sharing of expertise, knowledge, post-disaster reviews and lessons learned and integrate post-disaster reconstruction into the economic and social sustainable development of affected areas. This should also apply to temporary settlements for persons displaced by disasters;
- To develop guidance for preparedness for disaster reconstruction, such as on land-use planning and structural standards improvement, including by learning from the recovery and reconstruction programmes over the decade since the adoption of the Hyogo Framework for Action, and exchanging experiences, knowledge and lessons learned;
- To consider the relocation of public facilities and infrastructures to areas outside the risk range, wherever possible, in the post-disaster reconstruction process, in consultation with the people concerned, as appropriate;
- To strengthen the capacity of local authorities to evacuate persons living in disaster-prone areas;
- To establish a mechanism of case registry and a database of mortality caused by disaster in order to improve the prevention of morbidity and mortality;
- To enhance recovery schemes to provide psychosocial support and mental health services for all people in need;
- To review and strengthen, as appropriate, national laws and procedures on international cooperation, based on the Guidelines for the Domestic Facilitation and Regulation of International Disaster Relief and Initial Recovery Assistance.

APPENDIX 2: Indicators for Measuring Resilience

SFDRR Indicators Customized for Bangladesh (Will be finalized soon)

TARGET-A

1.9.1.1.1 National Standard for Defining Death due to different Hazards

Hazard	Recognizing Death
Flood	Washed Away, Drowning, Snake Bite, Boat Capsize; Food Poisoning
Cyclone	Washed Away; death due to object falling; due to house collapse; Trauma; Electric Short Circuit;
Landslide	Buried due to mud flow; due to object falling; due to house collapse
Lightning	Due to electrified; Heart Attack due to sound
Fire	Due to burn, due to smoke inhaling, due to house collapse during fire incident; Explosion of Gas Cylinder
Earthquake	Due to building/infrastructure collapse, due to object falling, due to burn of fire aftermath of the EQ
Chemical Hazard	Acid Burn
Tornado	Falling object, Flown away
Road Accident	Trauma, Spot Death
Building Collapse	Spot Death; Suffocation; Dust & smoke inhaling; Fire Burn
Boat/Ferry Capsized	Drowning

1.9.1.1.2 National Standard for Defining Missing due to different Hazards

Hazard	Recognizing Missing
Flood	Missing after boat capsized; Missing after washed away
Cyclone	Missing after boat capsized; Missing after washed away; Trafficking
Landslide	Missing after buried under the mud flow
Fire	Missing until the dead body is confirmed by DNA test
Earthquake	Missing after buried under the collapsed structure ; Missing until the dead body is confirmed by DNA test
Boat/Ferry Capsized	Missing after boat capsized;

TARGET-B

1.9.1.1.3 INDICATOR- B-2: NUMBER OF INJURED OR ILL PEOPLE ATTRIBUTED TO DISASTERS, PER 100,000 POPULATION.

B-2: Number of injured attributed to disasters

1.9.1.1.4 National Standard for Defining Injured due to different Hazards

Hazard	Recognizing Injury
Flood	Suffered from water borne diseases, snake bite, electric shock, Trauma
Cyclone	Suffered from water borne diseases; Physical injured (broken leg/hand; Cut; Head Injury) due to tree collapse or any other object fall
Landslide	Physical injured (broken leg/hand; Cut; Head Injury); Trauma
Lightning	Body Burning , Trauma, other injury
Fire	Percentage of Body Burnt
Earthquake	Physical injured (broken leg/hand; Cut; Head Injury)

Chemical Hazard	Percentage of Body Burnt
Tornado	Physical injured (broken leg/hand; Cut; Head Injury)
Road Accident	Physical injured (broken leg/hand; Cut; Head Injury)
Building Collapse	Physical injured (broken leg/hand; Cut; Head Injury)
Boat/Ferry Capsized	Physical injured (broken leg/hand; Cut; Head Injury)