

APPENDIX 3-2

**Guideline on UzDRRAP Formulation and
Its Summary**

**Guideline for
Formulation of a Upazila Disaster Risk
Reduction (DRR) Action Plan**

June 2025

**The Project for Capacity Enhancement on Formulation and
Implementation of Local Disaster Risk Reduction Plan (LDRRP)**

Executive Summary: Guidelines for Formulation of a Upazila Disaster Risk Reduction Action Plan (UzDRRAP)

Date: April 2025

1. Overall Framework

1-1. Purpose and Scope of the Guidelines

Outlines the intent and scope of the UzDRRAP Guidelines, targeting Upazila-level planners to systematically reduce disaster risks through integrated planning, budgeting, implementing, monitoring & supervision.

2. Legal and Policy Framework

The “UzDRRAP” aligns with national and international frameworks such as SOD 2019, NPDM (National Plan for Disaster Management), Delta Plan 2100, and SFDRR.

2-1. Key Features of the UzDRRAP

The plan highlights the three key pillars like scientific risk analysis, risk-based target setting, and multi-agency coordination.

2-2. Benefit of the UzDRRAP

The appealing points to develop UzDRRAPs in the context both of local and national governance.

Key Benefit	Description
Efficiency	Coordinated actions reduce time, duplication and cost.
Risk Awareness	Shared understanding of hazard and vulnerability.
Project Preparation	DRR priorities help develop fundable projects (DPPs).
Local Ownership	Stakeholder participation ensures resilience and sustainability.
Global Reporting	Supports SFDRR and SDG monitoring.

2-3. Disaster Management Policy in Bangladesh

The UzDRRAP is aligned with major national policies in Bangladesh, like the Delta Plan 2100, 8th Five Year Plan, NPDM 2021–2025, and NSDS. These policies emphasize integrating disaster risk reduction into development planning, strengthening local government capacity, and promoting climate-resilient infrastructure. Strategic actions include climate-proofing polders, afforestation, adaptive agriculture, and increased investment in DRR.

2-4. Administrative Context and Integration

Explains the administrative framework under the Upazila Parishad Act, and how UzDRRAP bridges vertical and horizontal coordination gaps.

2-5. Alignment with the Sendai Framework

UzDRRAP aligns with SFDRR’s four priorities: understanding risk, governance, investment in resilience, and building back better.

3. Plan Structure and Contents

3-1 The table of Contents of the UzDRRAP

- 1. Introduction
- 2. General information (Upazila Profile)
- 3. Hazard and Risk Assessment
- 4. DRR Targets
- 5. Action Plan and Monitoring

3-2 Details the five chapters of the UzDRRAP

Chapter 1 - Introduction outlines the plan’s objectives, legal status, and methodology.

Chapter 2 - General information describes Geographic, socioeconomic, and meteorological context.

Chapter 3 – Hazard Characteristic and Disaster risk focuses on Disaster risk assessment using hazard maps, past records, exposure analysis, stakeholder consultation, and scatter plots.

Chapter 4- Disaster Risk Reduction Target establishes Short-, medium-, and long-term DRR targets based on assessed risk and feasibility.

Chapter 5 – Action Plan for DRR Measures outlines structural and non-structural measures, responsible agencies, and monitoring mechanisms.

Overall, the guidelines promote evidence-based, participatory DRR planning at the Upazila level, integrating scientific analysis with local knowledge to develop practical and actionable plans.

Key Elements in Plan Formulation

1) Risk Assessment

Risk assessment follows the formula "Hazard x Vulnerability x Exposure," focusing on floods, storm surges, landslides, and earthquakes. The key steps include:

- Hazard Analysis using disaster records, hazard maps, and geographic data;
- Exposure Identification of people, housing, agricultural products, infrastructure, and critical facilities, especially in densely populated zones like city centers;
- Vulnerability Consideration based on socioeconomic and accessibility factors;

- Prioritization via Scatter Plots to highlight high-risk unions;
- Incorporation of Local Knowledge through meetings, workshops and fieldwork.

These elements together create the risk profile that guides DRR target setting and action planning.

2) Setting DRR Targets

DRR targets are defined based on the results of risk assessment and the local context. Each target considers the following perspectives:

- **Geographic Focus:** Identification of priority unions and critical assets.
- **Time Horizon:** Short to medium term (up to 10 years) / Long term (beyond 10 years)
- **Outcome Indicators:** For example, reduction in flood-affected households or increased community preparedness.
- **Prioritization Criteria:** Based on risk levels, technical feasibility, and social considerations. For instance, in case of river bank erosion, DRR target is described as follows:

Hazard	Area	DRR Target (Short and mid term)	DRR Target (Long term)
Riverbank Erosion	Along rivers	Control the progress of riverbank erosion by emergency measures at riverbanks, revetment maintenance and dredging in areas with significant erosion damage.	Reduce the risk of riverbank erosion in the entire riverfront area through riverbank revetment and channel improvement, etc.
	Char area	Control the progress of riverbank erosion by emergency measures for riverbanks and dredging in areas with significant erosion damage	Reduce the risk of riverbank erosion in administrative and commercial centers through emergency measures and dredging of revetments in some areas

Targets are finalized through consensus among stakeholders and serve as the basis for program formulation in the action plan.

3) Action Plan and Implementation Framework

The action plan illustrates DRR targets into operational strategies using a logical framework of Objectives and Programs:

- **Objectives:** Medium-term results derived from DRR targets (e.g., reduction of flood-related crops and housing loss).
- **Programs:** Sets of structural and non-structural measures organized to achieve each objective. A single objective may be supported by multiple programs.

Key components of the action plan include:

1. Classification of Measures:
 - Structural (e.g., embankments, shelters, drainage)
 - Non-structural (e.g., awareness campaigns, evacuation planning, early warning systems)

2. Prioritization:
 - Based on risk levels, vulnerability, feasibility, and cost-effectiveness
3. Implementation Responsibilities:
 - Each program is assigned to lead and supporting agencies (e.g., LGED, BWDB, DDM, PWD, NGOs)
4. Timeframe:
 - Implementation phases are categorized as short-, medium-, or long-term
5. Budget Alignment and Integration:
 - Ensures coordination with DPPs, ADPs, and national funding mechanisms

Objective	Related Program Example	Lead Agency	Timeframe
Reduce earthquake-related fatalities	Shelter retrofitting	LGED + PWD	1-3 years
Improve readiness evacuation	Public awareness campaign	DDM + NGOs	Ongoing
Reduce flood-affected area	Embankment construction	BWDB	5-10 years

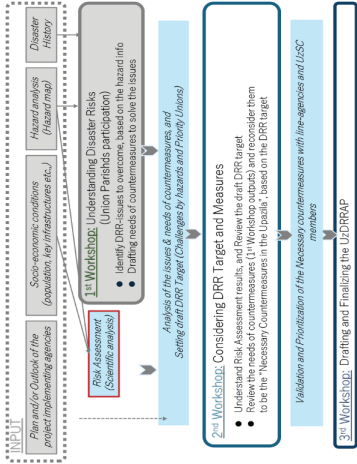
The action plan is continuously updated through coordinated efforts among UzDMC, UzSC, and Union DMCs, ensuring alignment with development priorities.

3-3. Planning Process Based on Field Activities

Chronologically outlines the entire planning process:

1. Inception and institutional setup
2. Data collection (hazard, baseline, GIS)
3. Risk analysis and issue identification
4. Community consultations and initial DRR targets
5. Development and refinement of countermeasures
6. Validation through UzSC and UzDMC meetings
7. Finalization and approval
8. Integration with development plans and monitoring

The above steps will be as follows in an event-based workflow:



Work flow of UzDRRAP elaboration

Conclusion

The guidelines reaffirms that UzDRRAP provides a structured, practical approach to mainstream DRR into local planning, enabling Bangladesh to achieve long-term resilience.

Prepared by: The Project for Capacity Enhancement on Formulation and Implementation of Local Disaster Risk Reduction Plan (LDRRP)

Date: April 2025

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Chapter 1 Introduction

1-1 Purpose of the Guidelines

This Guideline contains a concrete and simple explanation of the procedures and methods required for the development of a Upazila Disaster Risk Reduction Action Plan (hereinafter referred to as “UzDRRAP”), to support the officials of local-level administrative organizations and relevant agencies in Bangladesh to develop a UzDRRAP.

In this guideline, Upazila administration is a important target to enhance the UzDRRAP.

1-2 Scope of the Guidelines

The Disaster Risk Reduction Plan addressed in these guidelines is part of the Comprehensive Disaster Management Plan. The purpose of this guideline is to strengthen the capacity to develop a DRR plan in addition to the Contingency Plan that has been addressed in Bangladesh.

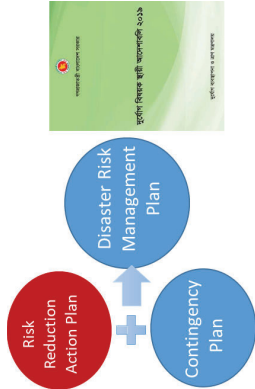


Figure-1-1 Risk Reduction Action Plan.

Therefore, the target users of this guideline are mainly DDM managers who are involved in the practical development of the Upazila DRR Action Plan and local consultants who manage workshops, collect and analyze information, and write the plan.

These Guidelines consist of the following four chapters.

- Chapter 1: Purpose of the Guidelines
- Chapter 2: DRR Planning Approach and Legal Background
- Chapter 3: Planning Process and method

Chapters 1 and 2 are chapters designed to confirm a basic understanding of Local Disaster Risk Reduction Plan.

Chapters 3 provides a guidance for practitioners who actually formulate the plans, explaining the specific objectives of each chapter in UzDRRAP and necessary steps to organize the description.

Chapter 2: DRR Planning Approach and Legal Background

2-1 DRR Planning Concept and Legal Status of Bangladesh

1) What is the Disaster Risk Reduction Plan by Upazila DMC?

This Plan corresponds to the Risk Reduction Action Plan (RRAP) that is required to be developed as a part of the Disaster Risk Management Plan (DRMP) by Disaster Management Committees (DMC) at District, Upazila and Union DMCs, according to the Standing Orders on Disaster 2019 (SOD). In the SOD, it is recommended to prepare a RRAP by local DMCs, as well as a Contingency Plan. While the disaster response which is covered by the Contingency Plan has been relatively conducted as required in emergencies, risk reduction measures based on the objective hazard and risk assessment had not been sufficiently implemented at the Upazila level. In consideration of this situation and the importance of the DRR investment for the further development of the country, this plan, therefore, emphasises disaster risk reduction and proposes the necessary actions as a master plan corresponding to the RRAP of the Upazila Disaster Management Plan (UzDMP), which directly leads to the preparation of Development Project Proposals (DPPs) and Annual Development Programmes (ADPs).

While the UzDRRAP plays an advisory role to each implementing agency, it is also unique in that it is not the plan of the implementing agency itself. This is due to the special circumstance that the plan is developed by the UzDMC, a coordinating committee.

The Objective of UzDRRAP

The UzDRRAP is a document that organizes and expresses the Upazila administration's policy on disaster risk reduction based on objective hazard information and the sector plans of each Line Ministry.

The effective development and implementation of the plan require sustained coordination with implementing agencies. In this context, the roles of the Upazila Sub-Committee for Disaster Risk Reduction Planning (UzSC)-a local level body under the UzDMC and the Focal Point Operational Coordination Group (FPOCG)-a central-level advisory body led by LDRRAP Unit in DDM both defined in the Standing Orders on Disaster (SoD)—are crucial. These bodies are instrumental not only in shaping the content of the plan but also in ensuring its practical advancement through continuous inter-agency coordination and follow-up.

2) Features of the Plan

The features of this plan are 1) Scientific Analysis for Local Hazards, 2) Setting DRR Targets

based on Risk Quantification, and 3) Involvement of Project Implementing Agencies, which are expected to contribute to the actual execution of the effective countermeasures.

Feature 1: Scientific Analysis for Local Hazards:

The hazard maps are developed by technical analysis, which processes differ from the Community Risk Assessment (CRA) under the Comprehensive Disaster Management Programme (CDMP), using disaster records, Digital Elevation Model (DEM), and current hazard maps. The developed hazard maps represent the vulnerable areas of the Upazila, and help promote to objectively understand the hazard potential.

Feature 2: Setting DRR Targets based on Risk Quantification:

Risks in Upazila area are quantified based on risk quantification using the hazard maps and various factors such as natural conditions and socio-economic factors and visualized to share with relevant agencies. A DRR target is set based on the result of identifying which areas are mostly affected by hazards, by these risk quantifications.

Feature 3: Involvement of Project Implementing Agencies:

The Upazila Sub-Committee (UzSC), which is composed of the Upazila chairman, UNO, PIO, engineers from LGED, BWDB, and DPHE in the Upazila, Upazila officials, Union Parishad chairman, is established to identify disaster risks and consider priorities of countermeasures against the disasters at the Upazila level. Since the committee at the Upazila level does not have the authority to determine the countermeasures listed in the plan to be implemented, the members from the line ministries at the central level are involved in the planning processes to promote the schemes/projects listed in the UzDRRP and secure budgets.

2-2 Benefit of the Upazila Disaster Risk Reduction Action Plans

Participation of potential stakeholders, in particular responsible agency like Line ministries and various kinds of development project partners such as urban planning and infrastructures such as roads, bridges, and riverbanks as well as health and education sectors must be a key element to establish a subcommittee that is planned in the Upazila DRR Action Plan Formulation Project initiated by DDM.

To encourage those stakeholders to be involved in the planning process of DRR Action Plan in Upazilas, DDM, DRRO and PIO as main organizers of planning session, is expected to explain the benefits of making DRR Action Plans at the time of inception.

The benefits and advantages of making DRR plan at local administration level will also be one of the necessary topics of discussion at the beginning of the planning process when UzSC is established.

Although it will be identified in detail in the local context, in general, at least three benefits should be shared among stakeholders as a consensus.

First,

Cost efficiency for disaster management

Investment to the disaster prevention, such as installing permanent dykes against flood instead of putting sand-bags temporarily on the riverside, it will reduce the cost of disaster response and recovery, so that DDM and DMC are able to transfer their limited resources to much more vulnerable area. Eventually, more lives would be saved. Therefore, investment to DRR will help those who are committed to DM activity as well.

Second,

More available information on Hazard and vulnerability

Sharing information about disaster risk and vulnerability in local area, it will encourage the other sector's participation, and involvement of line ministries and line departments which are related to DRR issues. In addition to utilizing existing guidelines such as the CRA, more scientific approaches can be applied when the LDDRP project could collaborate with line ministries like LGED or DWDB. For example, in case of planning in Sunamganj, 2023, flood analysis method by BWDB has been applied in the UzDRRAP.

Using same information, same hazard maps, also helps stakeholders to encourage a common understanding among those line departments and ministries.

Information on local risk and vulnerability will also help the people in other sectors who have not been familiar with and accustomed to making projects in consideration of DRR. Those stakeholders become able to refer those risk information. For them, the DRR document can provide good reasoning of how the DRR project is important and can give some good explanation to them. Or it could provide accurate explanation on their DPP that avoid certain disaster risk there.

And furthermore,

Appealing to international society on DRR progress in Bangladesh

Compiling the DRR plans by DDM shall help MoDMR and Planning Commission to monitor the progress of DRR at national government level.

The disclosure of the progress of DRR as a monitoring of administrative execution of the GoB would lead Line ministries and international donors to get much more attentions to DRR related developments. Once the information on DRR related projects that the GoB have addressed through ADPs are openly share to the public, the information on UzDRRAPs enables them to obtain necessary information for future project design that they require before start seeking possibility to make DRR projects. The information of what they need is the ones, such as which projects have already done, how much the progress has been made in terms of DRR, and which areas remain to be developed as an area more vulnerable to natural disaster for the next challenges. Such information is always required for decision making. In this regard, UzDRRAP is expected to function as a master plan in general term.

2-3 Disaster Management Policy in Bangladesh

The formulation of the UzDRRAP and the implementation of the countermeasures against disasters are in line with government strategies, policies, and plans of the country, as listed below.

The Bangladesh Delta Plan 2100 mentions the importance of strengthening the disaster risk management and combating the effects of climate change.

8th Five Year Plan (July 2020-June 2025) emphasises appropriate policy and institutional capacity building to address their concerns on climate-resilient development and disaster management at all levels of the government, especially at the local government level where most of the programmes are to be implemented.

The National Plan for Disaster Management (NPDM 2021-2025) focuses on "Making disaster risk reduction a development practice to achieve resilient public investment and the SDGs" and "Building capacity and leadership to implement NPDM 2021-2025 at the national and local level".

National Sustainable Development Strategy (2010-2021), NSDS identifies disaster risk reduction and climate change as one of the three cross-cutting areas that are critical to achieve sustainability in Bangladesh. The NSDS emphasizes the need to scale up investments in disaster risk reduction so that a suitable environment for the economic and social development of the country can be created in the face of climate change. Some of the specific strategies include the rehabilitation and climate proofing of coastal polders, disaster risk reduction, mainstreaming disaster risk reduction and climate change, coastal char land afforestation, development of climate stress tolerant crop varieties and utilization of climate change funds.

*more information on NSDS P:235-238

2-4 Disaster Risk Reduction Considerations in Local Administration

1) Overview of the local administration system in Bangladesh

The highest administrative unit in Bangladesh is the Division, which divides the country into eight divisions and 64 districts. Under each division are some-Districts, under each Districts are some Upazilas, and under each Upazilas are some unions.

In urban areas, however, there are two types of cities: core cities (City Corporation) and regional cities (Paurashava). Core cities are located in large cities that lead economic development as industrial clusters, and as of 2024, there are 12 core cities in the country.

Regional cities are established in rural areas where the population is concentrated and the center of economic and social activities, and as of 2024, there are 392 regional cities in Bangladesh.

There are 495 Upazilas nationwide; Upazilas encompass unions and pourashavas and are located in the middle of the local administration hierarchy.

Upazilas coordinate and prioritize the development needs of unions and local cities within their area and implement them.

Seventeen project implementing agencies (including LGED and DPHE) were transferred to Upazila Parishad under the Upazila Parishad Act (2009), however, at this moment the budgets of the line departments transferred to Upazila continue to be allocated from the headquarters of the respective project implementing agencies, and work instructions are generally given by the higher-level line project implementing agencies' organizations.

Upazila's administration is headed by the Chief Executive Officer (Upazila Nirbahi Officer: UNO). The staff of the 17 implementing agencies were transferred by the Upazila Parishad act to the Upazila Council, which is composed of elected members of the Upazila community, to carry out their duties under the direction of the Upazila Council. However, the staff of each implementing agency is still working under the vertical line of command of their respective central line agencies. Against this background, there is generally not enough coordination among implementing agencies within Upazila.

Table 2-1 Transferred Line Department Office

Upazila Nirbahi Officer (UNO)
Transferred Line Department Office
1) Upazila Agriculture Office – Department of Agricultural Extension (DAE) 2) Livestock Office – Department of Livestock Services (DLS) 3) Fisheries Office – Department of Fisheries (DoF) 4) Family Planning Office – Directorate General of Family Planning 5) Health and Family Welfare Center – Ministry of Health and Family Welfare 6) Engineering Office (LGED) – Local Government Engineering Department 7) Public Health Engineering Office – Department of Public Health Engineering (DPHE) 8) Social Services Office – Department of Social Services 9) Women Affairs Office – Department of Women Affairs 10) Youth Development Office – Department of Youth Development 11) Cooperative Office – Department of Cooperatives 12) Rural Development Office – Bangladesh Rural Development Board (BRDB) 13) Primary Education Office – Directorate of Primary Education 14) Secondary Education Office – Directorate of Secondary and Higher Education 15) Technical Education Office – Directorate of Technical Education (in some Upazilas) 16) Forestry Office – Department of Forest (in forested Upazilas) 17) Irrigation Office – Bangladesh Agricultural Development Corporation (BADC) (in agricultural areas) *Source: Upazila Parishad Act

*Accountability for disaster management projects of 17 implementing agencies transferred to the Upazila Council (but not BWDB)

Thus, given the current state of reform in the Upazila Parishads, there are still many challenges for Upazila initiatives, even though 17-line departments have been transferred to the Upazila.

In this DRR plan formulation, it is expected to play a role in promoting horizontal collaboration and communication in the Upazila administration in the DRR field through the process of plan formulation.

Since the UzDRRAP will be prepared by the Disaster Management Committee (UzDMC) of Upazila, of which Paurashava is one of the members, the projects in the plan will encompass those of Paurashava and the City Corporation mentioned above.

In particular, road bridges, drainage management, water supply, waste, and other public facilities (shelters, hospitals, schools) in the Porushova urban plan are important from the perspective of disaster management, and collaboration and coordination with other line departments such as LGED will help to prevent duplication of projects.

2) Disaster Risk Reduction Considerations in the Upazila Parishad Act

The role of disaster risk reduction (DRR) in the Upazila Parishad Act, 2009 is to enhance the capacity and resilience of the local government bodies and the communities to cope with natural and man-made disasters. According to the Act, the Upazila Parishad has the following functions and responsibilities related to DRR¹:

- To prepare and implement disaster management plans for the Upazila area in coordination with the district and national authorities.
- To mobilize resources and allocate funds for disaster prevention, preparedness, response and recovery activities.
- To coordinate with the relevant government agencies, non-government organizations, civil society groups and local people for disaster risk reduction and emergency relief operations.
- To establish and maintain early warning systems, shelters, evacuation routes, communication networks and other facilities for disaster management.
- To conduct awareness campaigns, training programs and drills on disaster risk reduction and safety measures for the Upazila officials, staff and residents.
- To monitor and evaluate the disaster management activities and report to the higher authorities on a regular basis.

The Upazila Parishad Act, 2009 also empowers the Upazila Nirbahi Officer (UNO) as the chief executive officer of the Upazila Parishad and the head of the Upazila Disaster Management Committee (UDMC). The UNO is responsible for following issues:

- Implementing the decisions and directives of the Upazila Parishad and the UzDMC regarding disaster management.
- Supervising and coordinating the activities of the Upazila administration, the Upazila project implementation officer, the Upazila engineer, the Upazila health and family planning officer, the Upazila education officer, the Upazila agriculture officer, the Upazila livestock officer, the Upazila fisheries officer, the Upazila social welfare officer and other officers related to disaster management.
- Liaising with the district administration, the national disaster management authority, the armed forces, the police, the fire service and other agencies involved in disaster management.
- Ensuring timely delivery of relief materials, medical services, water supply, sanitation and other essential services to the affected people.
- Maintaining law and order, security and public order during and after disasters.

¹ <http://bdlaws.minlaw.gov.bd/act-details-760.html>

3) Relationship between the development plans of District, Upazila, Pourashava and the UzDRRAP

The two main relevant laws for urban planning and infrastructure development in local administration are the "Local Government Act, 2009" and the "Urban and Regional Planning Act, 2015".

The "Local Government Act (Pourashava), 2009" defines the duties of local cities and empowers them to formulate urban planning master plans and develop infrastructure.

Meanwhile, the "Urban and Regional Planning Act, 2015" presents the necessary permits for the use of all public and private lands and provides discipline in land management to prevent unplanned urbanization.

Development policies and DRR need to be consistent. In particular, knowing land use policies is very important for DRR. However, in Upazila, financial and human resources are generally scarce and budgets are limited, and there are only a few Upazilas in the country that have master plans or five-year plans. If a master plan or Upazila development plan can be referenced, it is important to check the status of infrastructure development. The plans may also include the disaster management strategies and roles of Upazilas mentioned above.

Meanwhile, the Divisions and Districts in Bangladesh have master plans or development plans that guide their socio-economic and environmental development. These plans are prepared by the respective local government bodies, such as the city corporations, the district councils, the upazila parishads and the union parishads, in consultation with the relevant stakeholders and experts.

In case of the areas where Bangladesh Economic Zone Act is adopted (EZ), such as Mohenskhali Upazila in Cox's Bazar District, Chattogram division, three EZs are designated based on Mohenskhali-Matarbari Integrated Infrastructure Development Initiative (MIDI). Those initiatives also help to understand land use strategies in target Upazila and see the impact of the natural disasters.

Master plan also can be obtained by some Pourashavas, which currently, there are 392 Pourashavas in Bangladesh. However, not all the Pourashavas have master plans.

4) Inter-Upazila Coordination and Infrastructure Consistency

DRR countermeasures should not be confined to a single Upazila but require coordination with adjacent Upazilas and District-level initiatives. Especially for infrastructure development, consistency must be ensured through prior coordination, such as:

- **Embankment continuity (e.g., between Ramu and Cox's Bazar)**
- **Road elevation and drainage systems**

Institutionalize pre-consultation mechanisms through UzSC, District DMCs and DDM.

2-4 DRR as global agenda - SFDRR and SDGs

SENDAI Framework on Disaster Risk Reduction (SFDRR)

The SFDRR represents exactly the meaningfulness of preparing and implementing Local Disaster Risk Reduction Plans in which the guidelines are aiming to.

In 2015, the UN World Conference on Disaster Risk Reduction was held in Sendai, Japan, with the participation of about 180 countries, including Bangladesh. The Sendai Framework for Disaster Risk Reduction 2015-2030 (SFDRR) was adopted as the outcome document of this meeting.



The SFDRR has upheld 4 priority actions and 38 targets and indicators.

Table 2-2 Four priority actions in SFDRR

Four priority actions	
Priority 1.	Understanding disaster risk
Priority 2.	Strengthening disaster risk governance to manage disaster risk
Priority 3.	Investing in disaster risk reduction for resilience
Priority 4.	Enhancing disaster preparedness for effective response and to "Build Back Better" in recovery, rehabilitation, and reconstruction

As indicators, a set of 38 indicators was identified to measure global progress in the implementation of the Sendai Framework for Disaster Risk Reduction. The indicators will measure progress in achieving the global targets of the SFDRR and determine global trends in the reduction of risk and losses. Indicators such as disaster mortality by 2030, reduction of number of affected people, economic loss and damage to infrastructures have been monitored at the initiative of UNISDR.

In terms of the priority 1-4, one of the most important indicators is Global Target E (GT-E), shown below.

Table 2-3. Global target (E) in SFDRR

Global target E: Substantially increase the number of countries with national and local disaster risk reduction strategies by 2020.	
E-1	Number of countries that adopt and implement national disaster risk reduction strategies in line with the Sendai Framework for Disaster Risk Reduction 2015-2030.
E-2	Percentage of local governments that adopt and implement local disaster risk reduction strategies in line with national strategies. <i>Information should be provided on the appropriate levels of government below the national level with responsibility for disaster risk reduction.</i>

From the point of making UzDRRAP, every priority of actions of the SFDRR requires when any DRR strategy and plans are prepared.

First, **understanding risks** is a key to start planning and a fundamental part of the DRR Plan. Disaster risk management should be based on an understanding of disaster risk in all its dimensions of vulnerability, capacity, exposure of persons and assets, hazard characteristics and the environment. Such knowledge can be used for risk assessment, prevention, mitigation, preparedness, and response.

Risk Governance is a second priority action in SFDRR. Disaster risk governance at the national, regional, and global levels is very important for prevention, mitigation, preparedness, response, recovery, and rehabilitation since tackling on DRR is not a single issue but in most case, cross-cutting issues. DRR must become every sector's concern. Disaster Mitigating projects which are mostly initiated by MoDMR, DDM, BWDB or LGED are not only projects which contribute to DRR, but also reexamination of the current development projects that might affect environment and might harm to the people should contribute to DRR through disaster and environmental impact assessment (EIA/DIA).

Without fostering collaboration and partnership among multiple sectors in the government and private sectors, comprehensive DRR plan cannot be done.

Furthermore, when it comes to the priority 3, **investment for DRR**, country-wide disaster risk assessment and damage assessment is indispensable to make appropriate interventions to specific area which has disaster risk, avoiding biased and disorganized information created by mass media and social media. For instance, it might happen that domestic and international agencies rush into the one location as it is broadcasted as severely affected area right after disasters if there is not enough DRR information in advance. Strengthening the capacity of disaster risk assessment would lead both the GoB and international donors to efficiently allocate their resources. In this sense, priority

1 and 3 have close connection.

No.4 priority action of SFDRR is **Building Better Society through Investment for Disaster Prevention**. It is important to determine the specific countermeasures of DRR into current every development plan when we make future design of the area, considering the disaster risk reduction during peacetime before disaster happens. Although the recovery, rehabilitation and reconstruction phase provide a critical opportunity to build back better, including through integrating disaster risk reduction into development measures, it would not be easy to start investigation for build back better development right after the disaster.

Therefore, the UzDRRAP would be a best document as a master plan to include broader and future perspective of DRR in the region.

Recently, year 2022, the Bangladesh Government published latest updates on the progress of the SFDRR, “

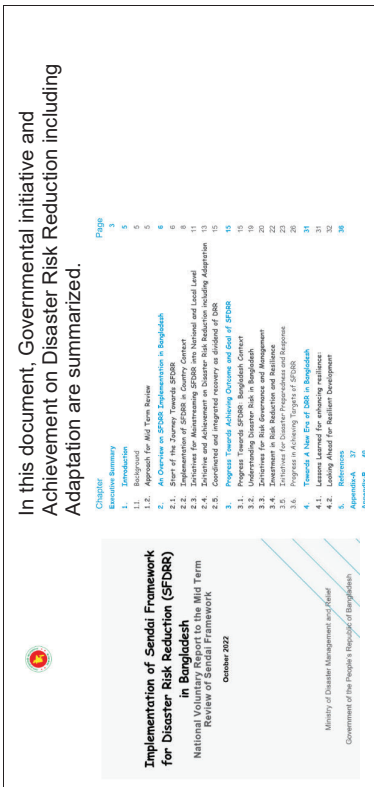


Figure 2-1 Mid-term review of SFDRR in Bangladesh

With regard to the investment to DRR, according to the document above, DRR and adaptation Fund: Total 8.8 % of National Budget was allocated to DRR Sector for last 5 years. In the 8th Five Year Plan from 2021 to 2025, around 9 to 11% of National Budget has been allocated to DRR which are closely link with climate adaptation.

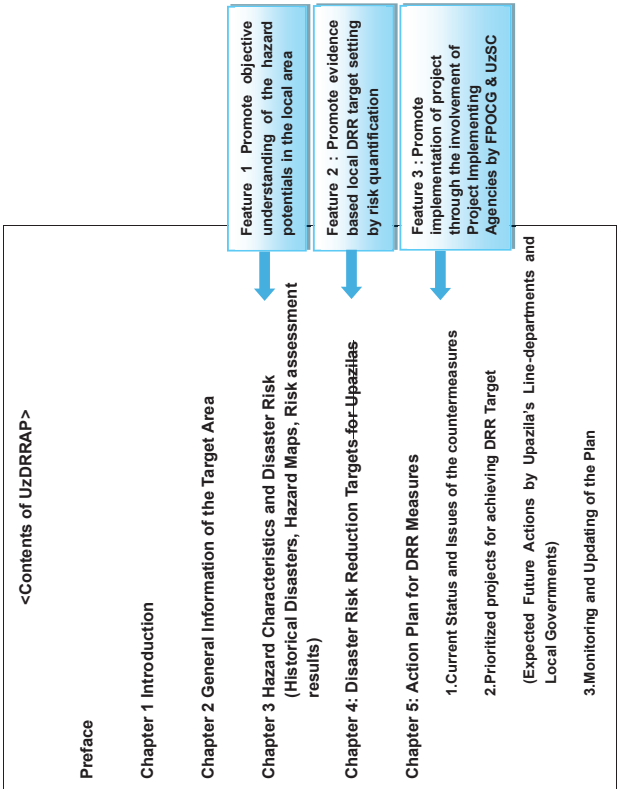
It is no doubt that SFDRR is the most influential global agenda while the Bangladesh Government is committed to some other initiatives.

Chapter 3 Planning Process and method

3-1 Structure of the Upazila Disaster Risk Reduction Action Plan

1) Structure of the Upazila Disaster Risk Reduction Action Plan

The structure of the Upazila DRR plan is as follows



The Preface will contain the expression to authorize the plan. Usually, the leader of the UzDMC, is asked to describe it.

Chapter 1 describes the objectives, scope, legal status in Bangladesh, and characteristics of the Plan.

Chapter 2 describes the geographic and socioeconomic conditions of the target area. This information is essential for understanding the hazards analyzed in Chapter 3.

Chapter 3 presents an overview of the major hazards in Bangladesh: flood, storm surge (in coastal areas), landslide, and earthquake hazards.–This chapter identifies the damage caused by the hazard based on the hazard analysis and identifies the more vulnerable areas where DRR measures are needed from the point of both scientific risk assessment and the problematic issues that local people recognize.

Chapter 4 proclaims the mission and targets that should be achieved through the countermeasures detailed in Chapter 5.

Chapter 5 analyzes the DRR measures needed in the target areas and presents a list of action plans sorted by respective policies and programs based on DRR Target in Chapter 4.

Since this plan is not made by the implementing agencies, project promotion activities, such as DPP approval, will be undertaken by each line ministry, and the FPOCG and UzSC will involve in the development of the plan, and a process for updating and monitoring project promotion.

This guideline in Chapter 3 will provide guidance on what information to include, in what volume, and in what level of detail, when describing the contents of the plan.

In describing the plan, please refer to the description of six Upazilas in Cox's Bazar district, Sunamganji and Kurigram, which have been developed prior to this guideline, as well as the guidance by this document.

The order and content of the descriptions in Chapter 1 and 2 in UzDRRAP are, in many parts, common, and the logic of those plan can be re-utilized. Many parts can be described by simply replacing proper nouns while local context must be carefully considered in Chapter 3 to 5.

2) Data Reliability and Sources

Data used in the UzDRRAP should be collected and verified through the following three layers:

- Initial information collection at the community level (e.g., CRA²)
- Verification at the Union DMC and local government workshops
- Scientific validation using public data sources (e.g., DRIP³, GIS, remote sensing)

All figures and tables must cite data sources, including year and institution.

² Community Based Risk Assessment
³ Disaster and Climate Risk Information Platform, managed by DDM

3-2 DRR plan description

This section 3-2 introduces specific objectives and intentions of each chapter of the DRR plan, showing example statements as described in Section 3-1 "Structure of the Upazila Disaster Risk Reduction Plan".

In addition, the notes, and description method of each item in each chapter of the UzDRRAP are also outlined in this section.

Throughout whole document, important practice of reporting must be emphasized. Whatever the contents are, in all chapters, whenever possible, sources should be clearly indicated (especially figures and tables).

UzDRRAP Chapter 1 Introduction

Chapter 1 of the UzDRRAP describes the objectives of the planning. It shall include a summary description of the information provided in Chapters 1 and 2 of this guideline.

The sections of Chapter 1 are as follows.

1.1	Purpose and aim of the Plan
1.2	Rationale for the formulation of the Plan
1.3	Legal Position of the Plan
1.4	Features of the Plan
1.5	Methodology for the development of the Plan
1.5.1	Institutional Arrangement
1.5.2	Planning Process

The planning process in Chapters 1-5 of the UzDRRAP includes a parallel record of actual workshops held right next to the general 8-step flow diagram for DRR planning. The following are examples of UzDRRAP descriptions in Cox's Bazar (2023).

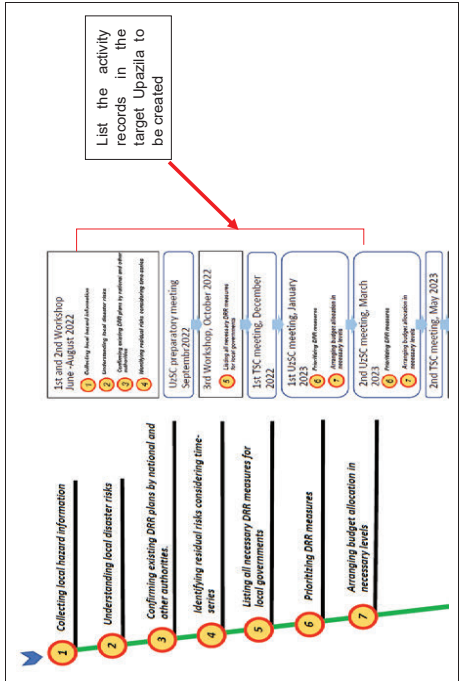


Figure 3-1 8 steps flow

UzDRRAP Chapter 1 can be identical in all Upazilas, except for the information on the history of workshops held since the purpose of the plan and legal background must be common in every plan.

Regarding the common description, please refer the document prepared in Cox's Bazar, Sunamganj and Kurigram.

UzDRRAP Chapter 2 General Information of the Target Area

Chapter 2 of the UzDRRAP describes the geographic, socioeconomic, and meteorological conditions of the target area, respectively.

These are the information that could cause the occurrence of a disaster or the spread of damage.

Each section in this chapter is organized as follows.

2.1	Location and Geographic Conditions
2.1.1	Location of Upazila
2.1.2	Topography of the Upazila
2.1.3	River system of the Upazila
2.2	Socio-economic Conditions
2.2.1	Demography
2.2.2	Economy and industry
2.2.3	Urbanization
2.3	Meteorological Conditions

UzDRRAP 2.1.1 Location of Upazila

Information on the location and Geographic Conditions of target Upazila can be found through National Spatial Data Infrastructure (NSDI), Bangladesh Geospatial Data Infrastructure (BGDI) and web research.

UzDRRAP 2.1.2 Topography of the Upazila

Topography (2.1.2) is an important information to analyze the cause of the hazards such as flood and sediment disaster. In this case, information is not necessarily limited to the rivers flowing within the boundaries of the Upazila, but if the flood-causing river is a transboundary river, information from a broader map that also shows the upstream areas originating in India is also needed.

UzDRRAP 2.1.3 River system of the Upazila

In DRR plans for frequently flooded areas, a schematic map of the basin is shown, as in the case of floods caused by large rivers that flow from their source in the Indian mountains, such as the Surma River (Sunamganj), the main cause of flooding may be the volume of water upstream, far from the affected area.

The description and maps of the basin shall be used as the information provided by the DDM initiative during the first and second planning workshops.

UZDRRAP 2.2 Socio-economic Conditions

Population statistics (UZDRRAP 2.2.1) is obtained from the most recent information from the statistical office in Upazila.

The year of the statistics obtained, such as 2011 or 2021, should be noted.

The reason for the Union's population is to determine the population of areas vulnerable to flooding and landslides. Human life is the most important factor to be protected in disaster management.

Therefore, it is desirable if it is able to collect information on the number of households, population, number of houses, and type of houses, not only in the Union but also at the ward level.

In addition, the number of people working in the ward level should be organized by occupation, so that the scale of the damage to coastal fishermen and farmers, for example, can be better understood. It is necessary to collect as much detailed population information as possible to be able to analyze affected population in Chapter 3.

Economic and industrial information (UZDRRAP 2.2.2) and urbanization (UZDRRAP 2.2.3) are important for understanding the size of industrial assets to be protected from hazards. Collected information is to be utilized when UzSC prepare Disaster Risk reduction Target in Chapter 4.

For example, in Cox's Bazar, special economic zones and coastal tourist areas emerge as damage potentials.

In other cases, reclamation of wetlands due to economic development causes the land to lose its function of storing and flowing water, increasing the flow into rivers and increasing the impact of flooding.

Such changes in land use due to development can be reflected in hazard analysis. Therefore, it is advisable to obtain a land use zoning map from the Ministry of Land when available; in the case of the plan for two Upazilas in Cox's Bazar, prepared in 2023, the map developed under the Coastal Land Zoning project was used.

Box-1

In Bangladesh, the Ministry of Land has been conducting land use zoning projects to ensure the planned and proper use of land. Under the Coastal Land Zoning project, digital land zoning maps have been prepared for 152 upazilas of 21 districts, covering the coastal areas of Bangladesh. Under the National Land Zoning (2nd Phase) project, digital land zoning maps have been prepared for 274 upazilas of 40 districts, covering the rest of the country. The land zoning maps take into account the quality and characteristics of land for various uses, such as agriculture, livestock, forestry, shrimp culture, industry, and biodiversity conservation. In addition, according to the mid-term review of SFDRR, following governmental initiative is

undergoing:

Disaster Risk Integrated City Level Master Plan/ Land Use Plan under the initiatives by the Ministry of Housing and Public Works and Local Government Division under the Ministry of Local Government Rural Development & Cooperatives (LGRD & C) of the Government of Bangladesh.

One of the examples is available online below;

http://www.mudp.gov.bd/documents/reports/Structure_Plan_MUDP.pdf

However, it might sometimes be difficult to obtain economic and industrial plans at the level of the Upazila administration because they are often created by the district administration. In such cases, it is advisable to contact the administrative office or conduct web research to find the District Development Plan or Division Development Plan for the target area.

For example, in the case of Cox's Bazar, the Cox's Bazar Development Authority has published a development plan, which can be referred to.

*Notes: The Japanese government also supports development plans and master plans as economic cooperation to the Bangladesh government. For example, in Cox's Bazar, the Moheshkhali-Matarbar Development Initiative (MMDI) and other related documents can be referred to.

<https://www.bd.emb-japan.go.jp/files/100130581.pdf>

Thus, economic and industrial information can be organized from the documents of international donors investing in the region.

The following are some points to keep in mind when summarizing this information as Chapter 2.2.

- The information in 2.2 may identify an enormous amount of documentation. However, we must not forget the purpose of describing the impact of hazards on society and the mechanisms by which social conditions could promote disasters.
- To avoid unnecessarily long lists of economic plans and detailed analyses, the entire 2.2 should be summarized and described in two to three pages.
- At a minimum, it is sufficient to list the important key industries of the region.
- In Upazila, where the population is heavily concentrated in rural areas, "Urbanization" (Chapter 2.2.3) may be omitted in some cases.

UZDRRAP 2.3 Meteorological Conditions

UZDRRAP Chapter 2.3 Information on weather conditions is important for rainfall, which can trigger flooding and landslides.

Information on rainfall and temperature is not available at the Upazila level, but at the District or Division level. Since this information is subject to change due to climate change, the year of the information relied upon must not be forgotten.

UzDRRAP Chapter 3: Hazard Characteristics and Disaster Risk

Chapter 3 describes the types and characteristics of hazards in the target area and disaster risk.

For Chapters 3 through 5, quantitative analysis based on scientific data is important while for Chapters 1 and 2, information obtained on a document basis can be organized.

One of the features of this planning process is to share this analysis with stakeholders and to take advantage of the knowledge of local residents obtained during the planning workshops.

What is a hazard?

A natural hazard is a natural phenomenon or event that has the potential to cause harm to people, property, or the environment. Natural hazards often seen in Bangladesh are earthquakes, volcanoes, landslides, floods, droughts, storms, heat waves, wildfires, epidemics, and asteroid impacts.

Hazards in the target area shall be identified during the planning workshop.

In planning workshops, it is important not only to collect disaster history information from the community, but also to share with stakeholders in the workshop information on the scientific and objective analysis of the hazard potential of the area. That is one major aspect of this planning process.

Hazard maps that have been analyzed in advance by DDM-led experts in each hazard shall be used.

The hazard maps should be verified with local stakeholders such as unions, and may be added or modified based on the hazard information that local people have in their experience.

For this hazard map, JICA experts assisted in its preparation during the JICA project. After the project is completed, the hazard maps will be obtained by utilizing the hazard data provided by DDM or by requesting experts via DDM.

A simple method of hazard and risk analysis and utilization is proposed that can be applied at the level of local disaster management planning in Bangladesh (for details, please refer to the Hazard and Risk Analysis Guidelines in the separate paper).

* The hazard analysis methodology shall be explained at the planning workshop. However, local information should be verified through workshop opportunities whenever possible.
It is important to ensure that no mistakes in the hazard analysis are pointed out later, when it comes time to analyze risks and prioritize countermeasures based on the hazard maps.
Suggested revisions based on additional data obtained are as follows.

At this time, the results of the analysis using the simplified method will be used as the basis for the plan, and the evaluation of priorities will also be used as the basis for the plan.

If additional data is submitted by workshop participants, it will be verified (at least until the second workshop).

If Union Parishads other than Priority Union Parishads **submits information that can be objectively evaluated as clearly indicating that significant damage** has occurred, those Union parishads may be included in the selection of Priority Projects, **regardless of the High Risk Union rating in the scatter plot in the Chapter 3.4.5.**

The damage that local people claim is evaluated from four aspects of the vulnerability, namely, environmental, physical, social, and economic vulnerability.

<https://www.undrr.org/terminology/vulnerability>

The sections of this chapter are generally organized as follows.

3.1	Disaster Record of the Upazila
3.2	Target Hazards of this Plan
3.3	Hazard map and disaster-prone areas by each hazard
3.3.1	Flood
3.3.2	Storm surge
3.3.3	Sediment Disaster
3.3.4	Earthquake Shaking
3.4	Disaster Risks
3.4.1	Flood
3.4.2	Storm surge
3.4.3	Sediment Disaster
3.4.4	Earthquake Shaking
3.4.5	High risk Unions

UzDRRAP 3.1 Disaster Record of the Upazila

Past disaster history shall be collected through questionnaires to Union Parishads, BWDB, LGED, and DPHE, and local disasters are extracted from the disaster database through DDM. 1st workshop for formulation of UzDRRAP is a good opportunity to start work.

Since the objective is to identify trends in disasters, the disaster history should not be limited to records of disasters in Upazila, but should be broadly described at the District or Region level, including the target Upazila.

UzDRRAP 3.2 Target Hazards of this Plan

It is clear that floods are the major disaster in Bangladesh, but the risk of occurrence of storm surge and landslide disasters varies from region to region.

For example, storm surge is a disaster specific to coastal areas, so it is not listed in Upazila,

which is located in an inland region.

Earthquakes, although a rare hazard in Bangladesh, are pointed out by experts as a potential risk because the interior of Bangladesh lies along a huge fault line formed by the collision of the Indian subcontinent and the Eurasian continent.

In some areas, lightning strikes, wind gusts, and droughts are considered major disasters. Therefore, items can be added as necessary to describe past disaster history for disasters that are difficult to organize as hazard maps.

Discussions on what to list as target disasters will be held with unions and other stakeholders through workshops.

The results of the workshop shall be compiled and included in this section.

UzDRRAP 3.3 Hazard map and disaster-prone areas by each hazard

For the 3.3 hazard map, the map prepared by the simplified analysis method will be utilized and a revised and additional map and outline will be included based on the results of the workshop.

Therefore, it is important for the person in charge of the Chapter 3 description (assumed here to be the local consultants) to summarize what was explained and discussed in the workshop on hazard and risk analysis in preparation for the Chapter 3 description.

The description should be concise, with at most one or two paragraphs of general description per disaster type. For an example, please refer to the DRR plan developed in Upazilas in Cox's Bazar district.

UzDRRAP Chapter 3.4: Disaster Risks

Chapter 3.4 of the UzDRRAP analyzes the human and economic damage caused by hazards such as flooding.

Terminology "Risk" is often used in connection with the term "hazard," but it is distinct from hazard.

While "Hazard" refers to the existence and magnitude of a potentially threatening phenomenon, such as a flood, landslide, or storm surge, "Risk" refers to the likelihood that a hazard will cause damage to society.

In other words, "Disaster Risk" is to be defined" the potential loss of life, injury, or destroyed or damaged assets"

It is characterized by the ability to measure damage quantitatively, such as the number of expected damages.

Hazard analysis" can be thought of as the analysis of the mechanisms of natural phenomena, and "risk analysis" as the analysis of the damage caused by such phenomena.

In these UzDRRAP Guidelines, the most basic element of risk is considered to be hazard exposure.

This is because most disaster vulnerabilities do not emerge without hazard exposure.

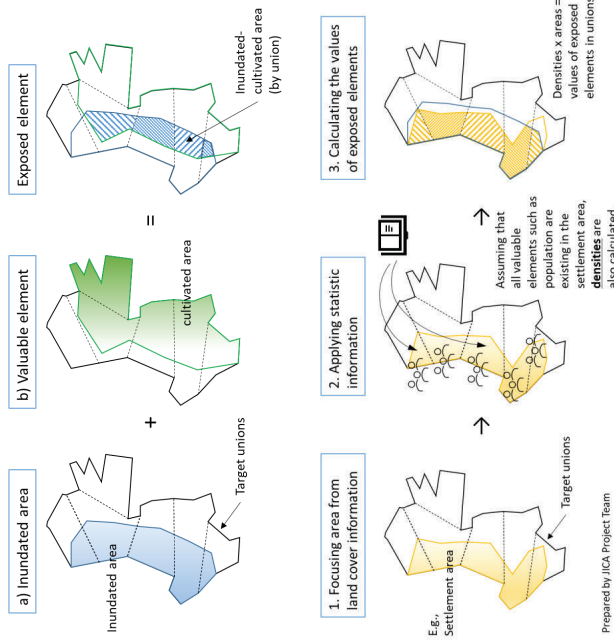


Figure 3-2 Exposure analysis

However, while it is correct to say that without hazard exposure, disaster vulnerability will not surface as damage, hazard exposure alone does not provide a full understanding of disaster vulnerability.

Disaster vulnerability must take into account not only hazard exposure, but also the underlying social, economic, and environmental factors.

In addition, disaster vulnerability is not constant: it varies with time and place. Therefore, to reduce disaster vulnerability, it is important not only to reduce hazard exposure, but also to enhance people's disaster preparedness and resilience.

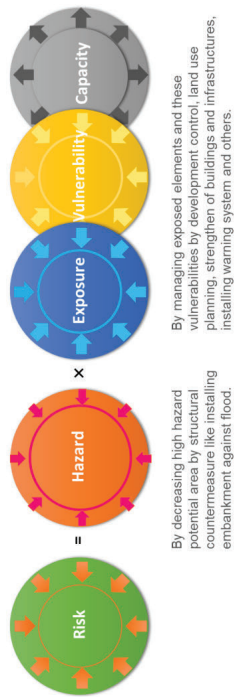


Figure 3-3 Concept of risk

By analyzing the causes of hazards and the socioeconomic areas affected by floods and other damage, it is possible to consider what measures can be taken to reduce risk.

BOX-2 Nature-based & Impact-based Forecasting

In planning areas, DDM recommends to introduce the following forecasting methods:

- Estimation of inundation zones using vegetative and topographic changes (e.g., planting Hizal and Koros in haor areas)
- Impact-based forecasting that evaluates consequences on asset value and evacuation facility functionality

It is recommended to integrate scientific forecasting with local knowledge to improve hazard and risk mapping if resources are sufficient and methods are developed enough. Further domestic and international cooperation in this field is expected.

In this connection, the moment right after the disaster is a good chance to observe the vulnerability in the affected area.

Mid Term Review of SFDRR 2022 pointed out the importance of strengthening this work as follows.

2.5. Coordinated and integrated recovery as dividend of DRR

Damage and loss assessment Form called D-Form is such an instrument which facilitates to collect Gender, age, disability disaggregated data to use in recovery and development planning process. The data collection, analysis, validation and response and recovery planning created a strong linkage from local to national through existing platform called disaster management committees. The higher-level policy decision making platform inter-ministerial committee is integral part for short-, medium- and long-term recovery through a multi-sector and stakeholders' engagement which fully aligned with Sendai Framework DRR planning frame from local to national, regional and international level. This is known as PDNA tool is mostly relevant with the first four targets of Sendai Framework and with other targets for recovery to promote build back better (BBB) approach for recovery and DRR as well as long term dividend for resilience.

However, recovery with its full potential yet remained unexplored for a one and coordinated planning there need more transformational and coordinated efforts to make the one and sector integrated process for full and resilient recovery with credible data and adequate resource mobilization.

Implementation of Sendai Framework for Disaster Risk Reduction (SFDRR) in Bangladesh
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UzDRRAP 3.4.1 Flood
UzDRRAP 3.4.2 Storm surge

The risk of flooding and storm surge in UzDRRAP Chapter 3.4.1 and 3.4.2 is assessed by the area of agricultural land and residential area exposed to flooding and storm surge.

The planning in the two Upazila of Cox's Bazar was assessed in terms of paddy fields, residential areas, and population, assuming a 20-year probability of flooding, with maps and bar charts showing the area of inundated agricultural land in each union.

Box-3 Lesson learnt from the past project activity

*The analysis was limited to agricultural and residential areas in the planning of Cox's Bazar. One reason for this is that the baseline survey emphasized that agriculture is the main industry in Cox's Bazar's Upazila.

Another reason was that the Cox's Bazar plan was the first planning exercise attempted in the UzDRRAP project, and the planning process was initiated without launching the Technical Sub Committee⁴ or UzSC. It is undeniable that the major agencies involved did not fully understand the UzDRRAP formulation at that time. Therefore, much had to be spent on time and costs to request their cooperation in the project. The result was that resources for research activities were limited to a few targeted surveys, and priority was given to sharing the results of the project UzDRRAP as soon as possible.

Risk assessment essentially requires a comprehensive risk vulnerability assessment that includes not only specific land cover conditions such as rice paddies and residential areas, but also socioeconomic infrastructure and social conditions in Upazila. While this should be the case, the actual planning process must take into account the availability of information necessary for the assessment, the time required for the planning process, and the level of capacity of the participants involved in the planning process.

At the same time, it is important to pay attention to ensure that the needs of stakeholders are not overlooked and that, at a minimum, the plan's objective of contributing to the promotion of DRR investment is secured. At the same time, however, a certain degree of compromise is required.

The amount of agricultural damage is calculated to identify priority areas to be addressed. It is important to quantify the amount of agricultural damage caused by flooding.

An example created in Cox's Bazar Sadar Upazila in 2023 is shown below.

4 Technical Sub Committee was the entity established in the JICA LDRRP Project (2021-2025) to promote coordination among line agencies at the central government level for the preparation, the implementation, and the monitoring of the UzDRRAPs.

Union	Area of Inundated Paddy Field (0.3m) [ha]	Ratio (Inundated Area / All Paddy Field)	Estimated Economic Loss (Thousand Taka)
Bhurakhal	116.31	30.8%	22,674
Charafkhali	0.32	0.1%	63
Cox's Bazar Pourashava	0.00	-	0
Ngapon	73.86	9.3%	14,359
Barabekhal	2.18	0.5%	426
Shanpur	0.37	0.3%	73
Shanpur	0.37	0.3%	73
Shanpur	368.83	69.8%	75,802
Shanpur	1.54	0.3%	301
Prata Muchkhali	491.99	42.2%	95,886
Pokhal	0.00	0.0%	0
Total	1,079.32	30.8%	209,633

NOTE: 1. 5.7% of the rice paddy area was used to estimate amount of affected rice production, which is based on the data of the Ministry of Agriculture, Government of Bangladesh, 2020 and 2021.

2. The unit price of rice was calculated with the data above (Table 3), to be 85 Taka/bag.

Union	Area of Inundated Paddy Field (0.3m) [ha]	Ratio (Inundated Area / All Paddy Field)	Estimated Economic Loss (Thousand Taka)
Bhurakhal	114.32	31.4%	22,382
Charafkhali	0.00	0.0%	0
Cox's Bazar Pourashava	0.00	0.0%	0
Ngapon	92.32	11.6%	17,997
Barabekhal	38.36	9.3%	7,600
Shanpur	36.00	26.7%	7,036
Shanpur	27.12	9.8%	5,486
Shanpur	444.24	72.7%	86,520
Prata Muchkhali	693.12	57.6%	151,221
Pokhal	0.00	0.0%	0
Total	1,294.36	34.4%	248,232

NOTE: 1. 5.7% of the rice paddy area was used to estimate amount of affected rice production, which is based on the data of the Ministry of Agriculture, Government of Bangladesh, 2020 and 2021.

2. The unit price of rice was calculated with the data above (Table 3), to be 85 Taka/bag.

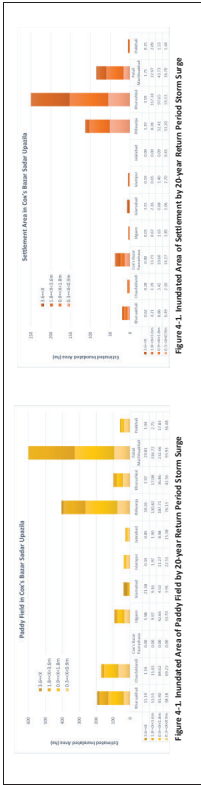
Potential economic losses (flooding and storm surge) (Cox's Bazar Sadar, 2023)

As with agricultural damage, damage to residential areas is assumed to be caused by a 20-year probability of flooding, and the area of inundated residential areas in each union is shown in the map and bar chart.

As for the distribution maps and tables of the affected population, as with the agricultural damage, they basically refer to the materials used in the Hazard Risk Analysis workshop.

If necessary, please contact the hazard map creator via DDM.

Unlike agricultural damage, human damage (population) is not expressed in terms of the amount of damage because it is difficult to calculate the amount of damage.



Flooded areas (paddy fields and residential areas) during storm surge (Cox's Bazar Sadar, 2023)

GIS software shall be utilized to calculate this area. For this bar chart, basically the material used in the hazard risk analysis workshop can be utilized, but if there are any modifications, please refer to the risk analysis guidelines and contact the hazard map creator via DDM.

For the assumption of economic damage amount, rice crop is used as the target crop, and the yield per unit and unit cost are obtained from the Department of Agriculture (DAE), and this information is then multiplied by the damaged area (calculated using Excel).

UzDRRAP 3.4.3 Sediment Disaster

3.4.3 Regarding landslides, in the case of Cox's Bazar, only damage to residential areas was extracted, without assessing damage to agricultural land, due to the characteristics of the localized disaster and the most important risk of damage to houses.

However, this was based on consideration of the hazard characteristics of the target Upazila and is not necessarily applicable to other Upazilas.

As in the case of flooding storm surge, a bar chart and map of the residential land area to be affected, as presented in the workshop, are shown, and a table and map comparing the number of affected population by union is provided.

The amount of damage is more difficult to calculate than for agricultural land because it depends on the size of the impact of the disaster.

The plan developed in Cox's Bazar in 2023 does not calculate the amount of damage due to the relatively small size of the affected human settlements and agricultural lands considered from the previous disaster history and hazard maps, but if the damage from landslides is extensive, in order to compare the cost-benefit of countermeasures, the Union and Upazila, there is room to consider the amount of damage.

In such cases, the FPOCG should take advantage of the opportunity to discuss technical guidelines.

UzDRRAP 3.4.4 Earthquake Shaking

Earthquake damage has not often been evaluated in local disaster management planning in Bangladesh, although risk analysis has been done at the university research level in the past.

The risks associated with earthquakes have not been well understood until now, especially at local context. In contrast, the seismic risk assessments that the Bangladesh government has conducted in 12 major cities are noteworthy.

BOX-4 Understanding Disaster Risk in Bangladesh

Since 2007 more prominently in 2009 government of Bangladesh has started the culture of understanding disaster risk in order to take initiatives for better preparedness. In this regard, risk assessment process started in the country aiming the prominent hazards in the context. Ministry of Disaster Management and Relief and Ministry of Housing and Public Works with the technical cooperation of development partners to initiatives for conducting Seismic risk assessment conducted (during 2007 to 2020) for 12 major cities in the country including Dhaka, Chattogram, Bandarban, Rangamati, Khagrachori, Bogra, Tangail, Dinajpur, Rajshahi, Mymensingh, Tangail. Later on through National Resilience

Programme (NRP): DDM part of MoDMR with the technical assistance of UNDP the risk assessment are done in 4 earthquake prone cities/town – Rangpur City Corporation and Tangail, Rangamati, Sunamganj Municipality. Main focus of the assessment was to understand the existence of active faults, recurrence period of earthquake based on historical events, infrastructure/building and socio-economic vulnerabilities of elements in the cities and probable damage and loss from scenario earthquakes, areas with liquefaction potential.

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In addition, the Government of Bangladesh established the Earthquake Preparedness and Awareness Committee (EPAC) in line with SFDRR Priority Action 1: Understanding Risk in 2009. EPAC headed by Minister for MoDMR is one of the major information resources in Bangladesh.⁵

Research findings should be utilized in local disaster management planning. In workshops on hazard risk assessment in planning, it is desirable to introduce the findings of earthquake experts, and based on them, it is important to at least specify the damage assumptions of earthquakes caused by vulnerable house structures and consider countermeasures.

Considering the formulation of UzDRRAP, one important perspective in describing earthquake risk is the map showing the area's susceptibility to shaking (Chapter 3) as well as the governmental effort to start risk analysis described above. Another is the earthquake resistance of buildings.

Building structures in Bangladesh can be classified into the following four categories in terms of seismic hazards.

⁵https://ddm.portal.gov.bd/sites/default/files/ddm.portal.gov.bd/pages/34fcc27_77fd_4c2b_a1b0_166166bef739/epac-1.pdf

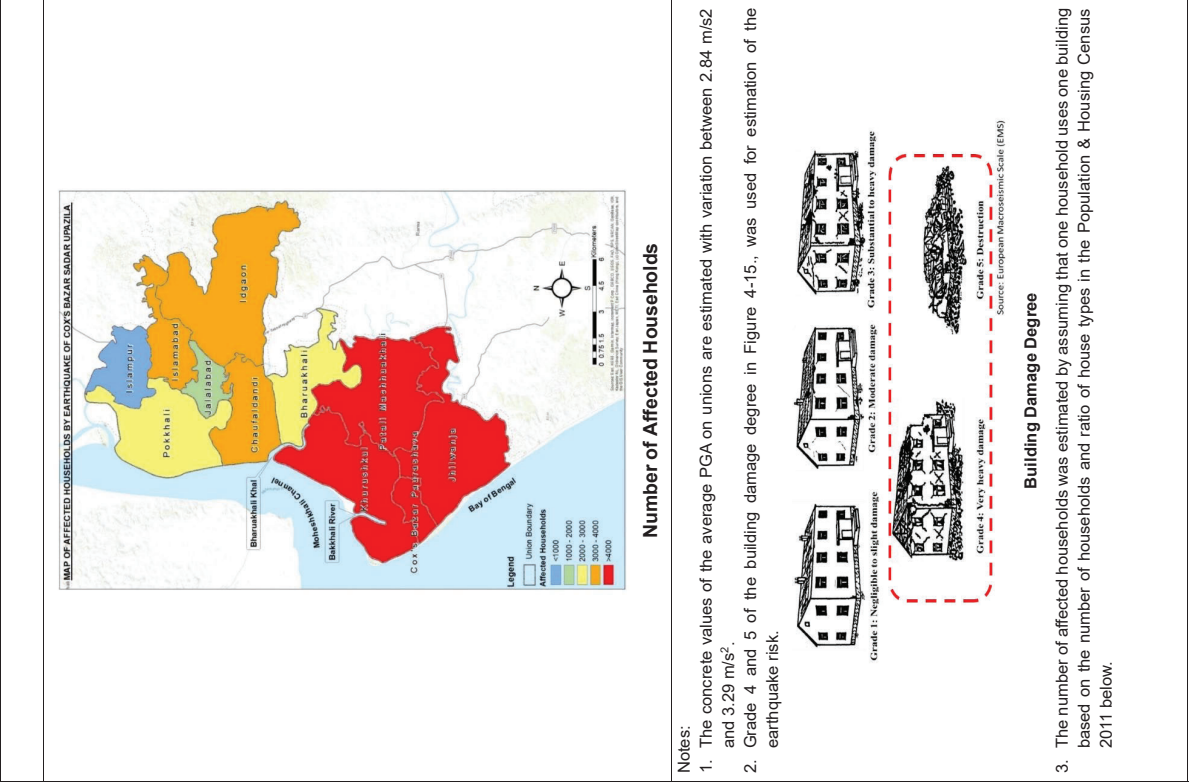
Type of structure

Type of structure	Characteristics
Pucca,	Pucca: A permanent, durable dwelling built of materials such as brick, cement, iron, wood, board, or asbestos. Characterized by flat or pitched roofs, solid walls, and cement or tiled floors. Usually has sanitary and electrical facilities. The most common type of housing in urban areas and the most expensive to build and maintain.
Semi-pucca	Semi-Pucca: Semi-permanent, durable houses built of a combination of pucca and kucha materials. They feature tiled, asbestos-thatched, or thatched roofs, brick or bamboo walls, and cement or clay floors. They may have sanitary and electrical facilities. It is the most common type of housing in semi-urban and rural areas and the most affordable for the majority of the population.
Kutchra	- Kutchra: Temporary housing built with natural and inexpensive materials such as bamboo, thatch, mud, tree leaves, and mats, which are not very durable. They have sloping roofs of thatch or leaves, walls of bamboo or mud, and earthen floors. There are no sanitary or electrical facilities. It is the most common type of housing in rural areas and the easiest to construct and replace.
jhupri	- Jhupri: Very temporary and unstable dwellings built from recycled or discarded materials such as cardboard, plastic, metal, and cloth. They have irregular roofs made of ready-made materials, flimsy walls, and floors of dirt and garbage. There are no sanitary or electrical facilities. This type of housing is most common in marginalized and extremely poor areas and is the most vulnerable to natural and social disasters.

As noted above, the building structure most vulnerable to earthquakes in terms of durability is Jhupri.

In describing seismic risk, a table of the number of households by building type for each union and a map representing that risk are organized based on information from the Bureau of Statistics.

The following is an example of the preparation in Cox's Bazar Sadar.



Percentage of Type of Structure and Number of Households					
Administrative Unit Residence Community	Number of Households	Percentage of Type of Structure			
		Pucca	Semi- pucca	Kutcha	Jhupri
Cox's Bazar Sadar Upazila Total	81523	11.8	20.4	58.2	9.6
Cox's Bazar Paurashava	30374	23.8	30.1	34.7	11.3
Bharuakhali Union Total	3939	6.9	10.6	76.2	6.4
Chauladandi Union Total	5195	5.2	13.7	78.8	2.3
Isgon Union Total	5894	8.5	24.6	58.1	8.8
Islampur Union Total	3826	5.3	8.6	73.6	12.5
Islamabad Union Total	5275	5.8	16.0	76.2	2.0
Jhalalabad Union Total	3048	11.4	21.0	60.6	7.0
Jhiliwanja Union Total	7352	9.1	20.5	56.3	14.1
Khurushkhal Union Total	6807	3.6	10.2	78.3	7.9
Patali Machhuakhali Union Total	6103	5.9	21.9	68.1	4.1
Pokkhali Union Total	3820	7.6	16.0	69.6	6.8

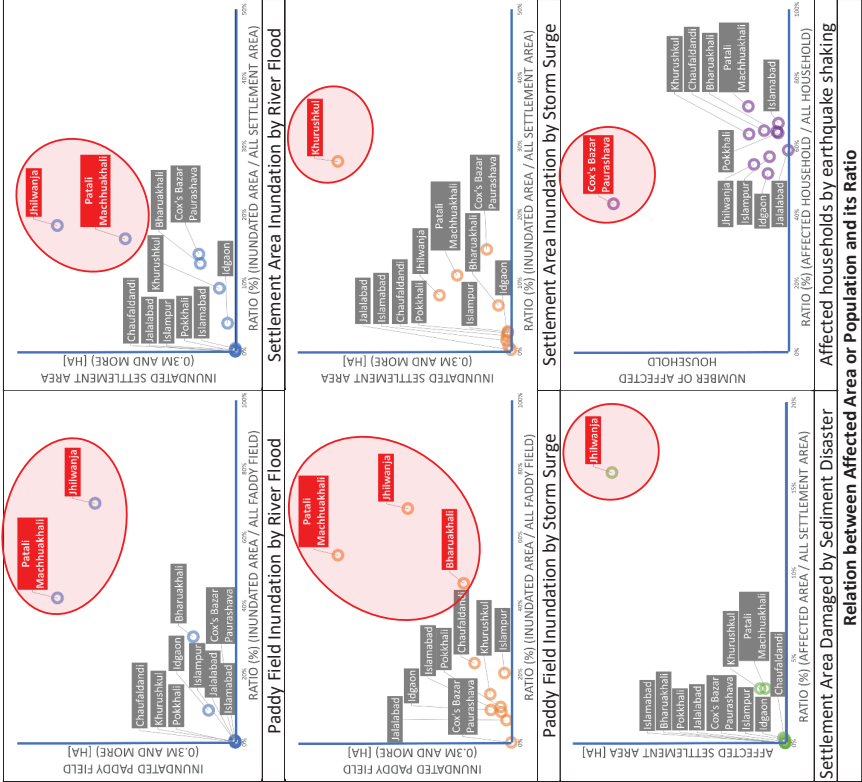
UzDRRAP 3.4.5 High Risk Union Parishads

In this section (Chapter 3.4.5), higher risk unions that should be prioritized based on quantified risk analysis which is put in this chapter are identified as a conclusion.

Scatter plots are to be used to represent the affected area and the percentage of affected area for rice crop lands and residential lands, respectively, by Union. An example of a scatter diagram for Cox's Bazar Sadar is shown below.

As in the case of the percentage of damaged area, the area of the union with the largest damaged area is normalized to "1" in order to make a relative evaluation.

The following scatterplots are examples created in Cox's Bazar Sadar (2023).



Vulnerable unions are identified using this scatterplot.

In the example in Cox's Bazar above, no specific quantitative threshold was set because it was relatively clear to distinguish between groups of unions with both a low percentage of affected area and a high percentage of affected area. However, without a threshold, vulnerable unions would not necessarily be clearly identified and extracted as clusters.

In addition, only rice cropping areas and residential areas were included in the risk assessment for convenience, as geographical information on rice cropping areas and residential areas is readily available.

Important public facilities and social infrastructure such as roads and hospitals are not represented in this scatterplot.

Therefore, it is important to share such information through those workshops, and then in the second workshop to identify risks, it is important to set reasonable threshold values based on the scatter plots created, together with workshop participants, and to reach a consensus among the parties involved.

For example, high risk unions could be identified based on the following approach.

- If the contrast between vulnerable and nonvulnerable areas is large enough to clearly group them, the contrast is used.
- If the contrast between vulnerable and nonvulnerable areas is not clear, the union with a damaged area of 0.5 or more in both size and ratio is uniformly selected as the high risk union,
- If the ratio of damaged area is low, but the damaged area is far larger than that of the other unions, the union is selected as a high risk union.
- In addition to the above methods, the impact of damage to public infrastructure such as livestock, salt fields, important industrial centers, roads and bridges, schools and hospitals, and shelters is discussed before selecting unions, taking into account risks other than rice production and housing.

It should be noted that any assessment of risk outside of rice paddies and residential areas must be based on quantitative data that is comparable across Upazila to the extent possible.

For example, if a shelter exists/should exist that is relatively low risk for the affected area but has a large capacity, it may be a priority project, and the rehabilitation of roads accessing that shelter may also be a priority.

If a reasonable explanation can be made that those projects will contribute to the relief of people in vulnerable areas, compared to the capacity of shelters in surrounding vulnerable areas, the capacity of that shelter, etc., then a decision can be made at the workshop or UzSC to add the priority of a particular union, regardless of the results of the scatterplot is possible.

In other words, prioritization is one of the most important roles of the UzSC.

Box-5 Time frame consideration

*The importance of preparation time in this explanation is a lesson learned in the planning process in Cox's Bazar. The two Upazilas in Cox's Bazar in 2022 did not allow sufficient consultation time. In future national roll-outs of DRR planning, it is important to explain the risk assessment policy from the first workshop.

The proposed explanations are as follows.

Start risk assessment with paddy fields and residential areas/population as a matter of convenience, but if there is other quantitative information available, it should be used; if it is difficult to obtain, no matter how dire the Union's request is, those that cannot be accurately risk assessed cannot be added to the plan, etc.

Based on the above discussion, priority unions are shown in the table by disaster type.

Below is an example from Cox's Bazar Sadar

High Risk Unions for Disaster	
Disaster	Priority Union
Flood	Jhilwanja and Patali Machhuakhali, Cox's Bazar Pourashava
Storm Surge	Bharuakhali, Cox's Bazar Pourashava, Jhilwanja, Khurushkul and Patali Machhuakhali,
Sediment Disaster	Jhilwanja
Earthquake Shaking	Cox's Bazar Pourashava

UzDRRAP Chapter 4: Disaster Risk Reduction Target

The DRR (disaster risk reduction) Target explained in this chapter are based on the results of specific and quantitative risk analysis in the previous chapter. The targets are set by hazard type as short-, medium- and long-term strategies for disaster risk reduction actions to be taken in the area where the plan will cover.

Key points of the DRR Target setting

- Target setting will lay the foundation for reducing disaster risk and minimizing human suffering and property loss.
- The significance of the DRR Targets lies in the fact that they provide specific policies for disaster reduction measures for each risk (e.g. floods, landslides, riverbank erosion). Measures based on these policies are detailed in Chapter 5.
- DRR targets shall be set in three phases: short/medium-, and long-term, based on the disaster risk assessments described in Chapter 3. For each risk (e.g., flood, landslide, storm surge), the area, facilities, and population to be protected should be clearly identified, and realistic, phased measures should be proposed.
- This makes it possible to clarify realistic countermeasures that are tailored to the characteristics and conditions of the area, and to implement them in stages. This phased approach is important for increasing the effectiveness of disaster mitigation measures.

Example DRR Target for riverbank erosion (Ulipur, Kurigram)

Hazard	Area	DRR Target (Short and mid) term)	DRR Target (Long term)
River Erosion	Along rivers	Control the progress of riverbank erosion by emergency measures at riverbanks, revetment maintenance and dredging in areas with significant erosion damage.	Reduce the risk of riverbank erosion in the entire riverfront area through riverbank revetment and channel improvement, etc.
	Char area	Control the progress of riverbank erosion by emergency measures for riverbanks and dredging in areas with significant erosion damage	Reduce the risk of riverbank erosion in administrative and commercial centers through emergency measures and dredging of revetments in some areas

See the example composition of the DRR Target in case of along the river below, Ulipur, Kurigram.

Control the progress of riverbank erosion **by** emergency measures at riverbanks, revetment maintenance and dredging in areas with significant erosion damage.

1. Describe what to do First in the paragraph
 2. Then describe the means of the action
- "What to do" is Control the progress of river bank erosion here, and the means of the action is emergency measures at riverbank revetment.

★ Considerations for Setting DRR Targets

When setting Disaster Risk Reduction (DRR) targets, it is crucial to evaluate which measures are effective and technically feasible for each risk, considering available resources and the technical capacities of government agencies. Additionally, determining the priority and sequencing of measures for each implementing agency requires informed technical judgment.

Notably, there may be a disconnect between residents' expectations and the feasible measures implementing agencies can undertake, particularly in addressing riverbank erosion in large rivers. For example, residents may not realize that stabilizing riverbanks is a prerequisite for establishing effective irrigation facilities in coastal areas to mitigate drought. Therefore, understanding the perspectives of line agencies responsible for structural measures and recognizing the interdependencies of these measures is essential when assessing residents' expectations.

The case study above in Kurigram district (Ulipur and Chilmari) illustrates this challenge. Located along the Jamuna and Teesta Rivers, and in the Char area, addressing flooding and riverbank erosion—the primary disasters in this region—through comprehensive structural measures is technically difficult. While the BWDB promotes coastal embankment maintenance as a fundamental structural approach, technical and budgetary limitations require prioritizing scalable coastal measures within a 10-year planning period.

To set realistic DRR targets, it is necessary to:

- 1) Outline measures that have been implemented, those pending implementation, and those that are technically or resource-constrained*. *The result will be stated in the Chapter 5-1
- 2) Avoid basing targets solely on residents' expectations, which may not align with practical feasibility or effectiveness.
- 3) Setting DRR targets demands specialized technical expertise and must be approached separately from bottom-up decision-making processes to ensure effectiveness and feasibility.

Steps for Formulating DRR Targets

Consultations with implementing agencies will be conducted both individually and through the UzSC. The steps vary based on the type of measures:

The steps in case of flood risk reduction are shown below.

1) Flood control and Riverbank erosion measures

Step 1: Develop a hazard map that incorporates risk analysis results and residents' disaster experiences.

Step 2: Compile information on current measures and future plans for each location under the BWDB's jurisdiction, distinguishing between short-term actions and long-term challenges.

Step 3: Identify residual risk based on the expected solution by means of flood control.

2) Infrastructure (Evacuation Centers, Roads, Deep Wells)

Step 1: Identify the expected solution for the residual risk based on the expected solution by means of flood control.

For high-risk areas (e.g., Char areas) where structural flood control measures are insufficient, explore alternative solutions in a short and mid-term, such as:

- Expanding evacuation routes and shelters,
- Enhancing early warning systems, and
- Relocating residents in collaboration with DDM, LGED, and other agencies.

Step 2: Ensure the Upazila government and implementing agencies share a common understanding of priority urban areas and industrial bases for protection which are not to be protected sufficiently.

Step 3: Through consultations, establish a consensus on feasible short-term and long-term measures.

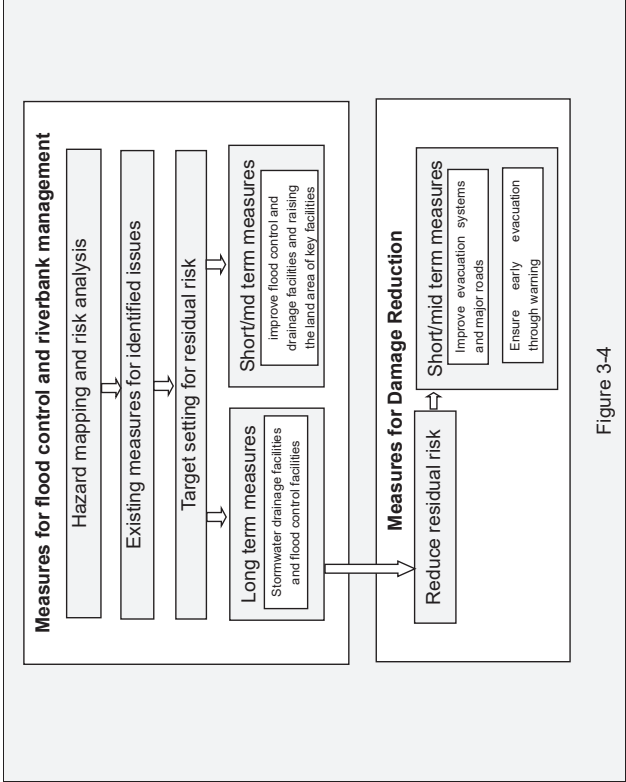


Figure 3-4

UzDRRAP Chapter 5: Action Plan for DRR Measures

Chapter 5, based on the contents of Chapters 3 and 4, summarizes the action plan for disaster reduction measures toward the DRR target as Upazila.

The sections of this chapter are generally organized as follows.

- 5.1 Current status of the structural and non-structural countermeasures

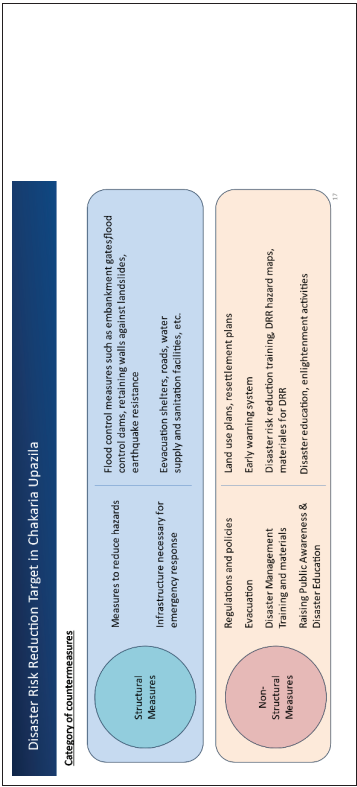
5.2 Action Plans for DRR Target

5.3 Monitoring and Updating of the Plan

The first section, Chapter 5.1, is an overview of the types of structural and non-structural DRR measures that are actually being implemented in Upazila.

Chapter 5.1 is not merely a list of measures that have already been implemented or proposed, but also a menu of DRR measures that should be taken as a whole, with the objective of confirming which measures have been taken and which have not been taken from a general perspective.

In addition, by indicating the assumed implementing agencies for the countermeasures, it will serve as an explanation for the Upazila Council and line ministries to have a common understanding of what implementing agencies are responsible for implementing which disaster countermeasures in Upazila.



UzDRRAP Chapter 5-1 Current Condition of Structural and Non-Structural Measures

Overview

Chapter 5-1 provides a comprehensive overview of structural and non-structural DRR measures implemented by local governments. The aim of Chapter 5-1 is to clarify which measures are being taken and which are not being taken in order to achieve the DRR targets set out in Chapter 4. Rather than simply listing measures, it will confirm the residual risk based on the disaster reduction goals and present an overall picture of the DRR measures that should be adopted by the District Disaster Management Committee (DDMC).

Implementing agencies for DRR measures

This section clearly identifies the implementing agencies for the disaster management measures. This information serves as a reference document to help Upazila Councils and line ministries clearly understand which agencies are responsible for each disaster management measure and to build a common understanding.

Importance of measures that have not yet been implemented or proposed

Chapter 5-1 also presents measures that have not yet been implemented or proposed by the Upazila government or line ministries. This provides an opportunity for those involved in planning to learn about a variety of options, both soft and hard, in addition to conventional DRR measures such as embankments and shelters. This is expected to promote the proposal of new measures at the next plan update.

Un-proposed measures and issues

Some of the un-proposed measures include issues that could become important in the long term. The reason for these not being proposed is not necessarily because they are not important, but often because of a lack of technical capacity in the implementing agencies, budget constraints, or institutional and political bottlenecks. The purpose of this section is to identify appropriate measures to address residual risks and to utilize them in future plan updates. It is hoped that the central government will use this information to further promote the efforts of Upazila DMCs.

Case in Cox's Bazar

For example, in Cox's Bazar, the land use plan has not yet been implemented. The reason for this is the issue of inter-organizational collaboration, which arose because the Urban Development Department (UDD) was not included in the composition of the Upazila Disaster Risk Management Committee (UDDMC) when the UzDRRAP was being formulated. In order to clarify such issues and address them in the next planning phase, it is important to present the proposed measures to stakeholders.

Notes on the description

- **Emphasize the role of the implementing agencies:** The roles and cooperation of the implementing agencies are essential for the implementation of the plan. Therefore, it is desirable to describe specific methods of cooperation between the implementing agencies (e.g. regular meetings of DMCs and improved communication). This will clarify the direction for formulating a specific implementation plan.
- **Prioritization of DRR:** It is useful to include an explanation of the priority and urgency of implementation in the list of measures. This will make it easier to monitor the implementation of the plan when updating it, and improve its effectiveness.

In this way, this section plays an important role in providing guidelines for understanding the overall picture of current DRR measures and addressing remaining risks.

An example of Cox's Bazar Sadar in the overall image is shown below.

[illegible][illegible]

Non-Structural Measures Which are Undertaken / not Undertaken

5.2 Action Plans for DRR Target

Chapter 5, Section 2: Action Plan Based on the DRR Targets

Purpose of Chapter 5-2

Chapter 5-2 outlines the necessary actions for achieving the Disaster Risk Reduction (DRR) targets from a short-term and medium-term perspective, focusing on a 10-year timeframe. While the primary actions are intended for this period, it is also beneficial to include any specific long-term actions aimed at disaster reduction.

Whereas Chapter 4 presents the principles of disaster reduction in both short and long terms, Chapter 5-2 organizes these measures into programs that address the characteristics of each disaster. This chapter provides an overview of the expected results of the action plan, the programs designed to achieve these results, and the target areas.

Structure of the Action Plan

The action plan's structure serves as a practical breakdown of the DRR targets. For example, in the case of Upazilas in the Kurigram district, the "Vision," "Target Hazard," and "Target Area" align directly with the DRR targets. The action plan then translates the "Countermeasures Objectives" for short- and medium-term targets into two distinct components:

Objectives: Objectives that guide disaster reduction efforts.

Program: Clusters of countermeasures organized by specific disaster scenarios.

For instance, in the context of flooding, a program might be titled "Improvement of flood control facilities in priority areas." This program groups various countermeasures into a cohesive framework. The specific actions within this program are determined through consultation with relevant organizations and stakeholders.

Structure of the Action Plan

Challenges by Hazard		
Vision	Objectives	Target area
The estimated human and economic damages by each disaster are reduced by 50% within 10 years	1. Flood: To ensure protection of human lives and properties (livestock) from flooding	A. Improvement of flood control facilities in some priority areas B. Improvement of DRR-related facilities and drainage facilities in some priority areas C. Raising of land area of key facilities/ Relocation to elevation areas
	1-1. Reduce at least inundation risks of Central city areas	Inland areas, areas along rivers
	1-2. Reduce/minimize damage to at least people and assets	Inland areas, areas along rivers, Char areas

Vision (from 2025 to 2035).	Target hazard	Challenges by Hazard		Target area
		Objectives	Programs	
		by improving evacuation systems and maintaining transportation networks	B. Improvement and renovation of major roads, bridges, and culvert for evacuation and emergency operations	
		1-3. Ensure early evacuation through warning	A. Development and operation of early warning networks	
	2. River Erosion: To mitigate direct damage to residence and properties against river erosion	2-1. Urgently control the progress of riverbank erosion by emergency measures	A. Introduction of emergency measures (e.g., sandbags) for revetment, and dredging	Areas with recent significant erosion damage along rivers
	3. Earthquake Shaking: To establish a resilient Upazila to withstand earthquakes	3-1. Enhance earthquake resistance	A. Promotion of the compliance with the building standard (BNBC 2020) B. Implementation of the seismic diagnosis	All areas
		3-2. Promote earthquake preparedness at home and in the community	A. Awareness raising of earthquake risks and preparedness at home, schools, and communities	All areas
		4-1. Promote appropriate response and evacuation for lightning strikes	A. Installation and maintenance of lightning arresters / evacuation shelters for people and livestock	All areas
	4. Lightning: To reduce direct damage to people and livestock caused by lightning strikes	5-1. Provide stable water supply for the fields and livestock	A. Expansion and improvement of irrigation facilities (e.g., pumps, well development) / water storage facilities (e.g., reservoir)	All areas
	5. Drought: To mitigate the impact of drought on people and livestock		A. Conversion and/or introduction of the drought-resistant crops and agricultural methods	All areas
	6. Common: To build communities capable to quick and	5-2. Promote drought-resistant crops and agricultural methods	A. Conversion and/or introduction of the drought-resistant crops and agricultural methods	All areas
		6-1. Foster human resources and prepare equipment to enable rapid disaster response	A. Implementation of disaster management training and drills B. Preparedness of the materials and equipment for disaster response	All areas

Vision	Target hazard	Challenges by Hazard	
		Objectives	Programs
	appropriate disaster response	6-2. Encourage people to prepare for the evacuation and disaster response	A. Provide DRR education and public awareness raising activities
			Target area All areas

How to prepare an action plan

An action plan is structured based on the following components:

1. Target Hazard:

The issues and corresponding countermeasures for each hazard are outlined at the beginning of the plan. These countermeasure **Objectives** are developed by analyzing:

- Issues identified by union participants during the planning process, particularly through workshops.
- Problem recognition and insights provided by implementing agencies.

2. Countermeasure Map

The countermeasure map provides a visual summary of relevant programs for a specific target hazard. To effectively prioritize actions, the map should clearly indicate critical locations, such as:

- Evacuation centers.
- Densely populated areas (e.g., central urban areas).
- Boat terminals (Ghats).
- Main roads.

However, for hazards like earthquakes that affect wide areas or for non-structural measures where specific locations cannot be pinpointed, a location map is not necessary. As a result, location maps may only be required for localized hazards, such as floods or riverbank erosion.

3. Actions

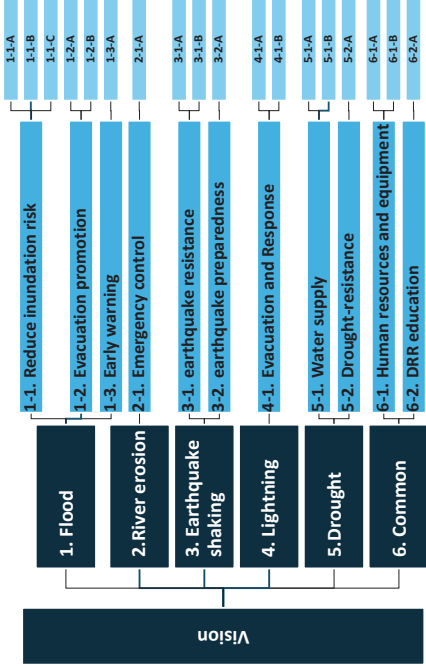
Actions should be categorized under two main headings:

- Objectives: The strategic objectives to address the hazard.
- Program: Clusters of countermeasures designed to achieve the objectives.

The table can be divided by Objectives, such as 1-1, 1-2, 1-3...

Target hazard	Objectives	
	1-1	1-2
Flood	1-1 Reduce at least inundation risks of DRR-related facilities and Central city areas	1-2 Reduce/minimize damage to at least people and assets by improving evacuation systems and maintaining transportation networks
	1-3 Ensure early evacuation through warning	
Riverbank erosion	2-1 Urgently control the progress of riverbank erosion by emergency measures	
Earthquake shaking	3-1 Enhance earthquake resistance	3-2 Promote earthquake preparedness at home and in the community

Target hazard	Objectives	
	4-1	5-1
Lightning	4-1 Promote appropriate response and evacuation for lightning strikes	5-1 Provide stable water supply for the fields and livestock
Drought		5-2 Promote drought-resistant crops and agricultural methods
Common	6-1 Foster human resources and prepare equipment to enable rapid disaster response	6-2 Encourage people to prepare for the evacuation and disaster response



The action plan for each program, organized by Objectives, consists of two parts: the action name and the action implementation plan.

The following are examples of actions taken to improve and repair major roads, bridges and culverts for evacuation and emergency activities in 1-1-A and 1-2-B (Kigam District).

Objectives	Program	Target area	Implementation plan			
			Action	Responsible agency	Ongoing activity/Current status	Timeframe for achieving the Action
1-1- Reduce at least inundation risks of DRR-related facilities and Central city area	1-1-A. Improvement of flood control facilities in some priority areas	Inland areas, areas along rivers	Action along the Teesta River	BWDB	DPP has been submitted although not Approved yet	Securing the fund (5500 million TK)
Action and Implementation plan	1) Riverbank protection works on the left bank of the Teesta River [First priority] work both in Ulipur and Chilmari (15,450 km.)	Control Embankment (Left Bank of Teesta river) [First priority] Embankment from	Riverbank protection works on the left bank of the Teesta River [First priority] work both in Ulipur and Chilmari (15,450 km.)	BWDB	DPP has not been submitted although not Approved yet Official project ID: T_LB-09, 10, and 11)	3 years

	Bajra to Teesta bridge toll plaza (30km)	BWDB	DPP has not been submitted. Official project ID: T_LB-10, 11 and 12		6 years
3)	Riverbank protection works on the left bank of the Teesta River [Second priority] Riverbank work (13,550 km)				
4)	Flood Embankment on the left bank of the Teesta River [Second priority] Embankment from Bajra to Teesta bridge toll plaza (16 km)	BWDB	DPP has not been submitted. Official project ID: N/A yet	Securing the fund (4,000 million TK)	6 years

Objectives	1-2 Reduce/minimize damage to at least people and assets by improving evacuation systems and maintaining transportation networks				
Program	1-2-B Improvement and renovation of major roads, bridges, and culvert for evacuation and emergency operations				
Target area	Inland areas, areas along rivers, Char areas				
Action and Implementation plan	Action	Responsible agency	Ongoing activity/Current status	Actions to be taken	Timeframe for achieving the Action
Establishment of the evacuation routes in the Upazila, including the access route to the shelters near the central city areas and economically important area (Along riverside and inland areas) [First Priority Roads] - Highway linking U09 to U06 which is connected with Hatia Ghat (local riverport) - Highway linking U03 to U02 - Highway linking U05 to U07 which is connected to Thetrai Union Ghat - Highway linking U10 to U11 [Second priority roads] - Road linking Fokarharhat Ghat to U08 (economically important as well) - Other economically important roads connected to waterlogging area	Establishment of the evacuation routes in the Upazila, including the access route to the shelters near the central city areas and economically important area (Along riverside and inland areas) [First Priority Roads] - Highway linking U09 to U06 which is connected with Hatia Ghat (local riverport) - Highway linking U03 to U02 - Highway linking U05 to U07 which is connected to Thetrai Union Ghat - Highway linking U10 to U11 [Second priority roads] - Road linking Fokarharhat Ghat to U08 (economically important as well) - Other economically important roads connected to waterlogging area	LGED	The condition of roads as evacuation routes is as follows. Good condition: 149942002, 149943001 and 149943021 Need to be rehabilitated with protection work : 149943017, 149943005, 149943019, 149943003, 149943022, and 149942006 149943016 is on going DPP 149943009 has been in tender	DRR consideration--more concretely in both design and construction, following the "Build Back Better" to be sustainable *More concretely Slope protection or strengthening Increasing road height Sufficient water passing structure like bridge, Culvert, U-Drain etc. Sand Piling or piling for road strengthening RCC	10 years

	[Third priority roads] Roads in the inundated area which are connected to first and second priority roads		Pavement Road Side Drain Approach Road Slope protection
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The guidelines for each item are as follows.

Action	✓	This column is for clearly stating the specific actions and activities that should be carried out. The aim is to identify the specific steps needed to achieve the project's objectives and results, and to ensure that the agencies in charge have a shared mutual understanding. It is important that the actions are consistent with each other. The plan needs to be adjusted so that one action does not prevent another action from being carried out.* <i>*Ideally, actions that are closely related to each other, such as the construction of flood prevention facilities and the development of evacuation routes in the surrounding area, should be planned as a single unit, but in light of the coordination capabilities of the UzDMC, this has not yet been achieved.</i>		
	✓	If possible, indicate the priority of each action to make it clear which actions are important. For each action, clearly indicate its "related actions" and "dependencies". For example, Action B can only begin once Action A has been completed. For some issues, the action to be taken may be an early stage one, such as a survey that is a preliminary step for the project. For example, it may be identified as the formulation of a master plan, preliminary survey, or overall project design.		
Responsible agency	✓	This item clarifies the organizations and institutions responsible for implementing the action. By designating the ministry responsible for implementing each action, the location of responsibility is clarified, making progress management easier. When multiple line agencies are involved, the main responsible agency is identified, and the supporting agencies are stated as well.		
On-going activity/Current status	✓	A section for describing the current progress and activities in progress. Grasp the current situation and show the basis for the next action to be taken.		
Action to be taken	✓	Clearly describe existing plans (e.g. DPP and funding status) and current issues. Include statuses such as "not yet approved". This is an item for describing specific actions to be taken in the next step, and for arranging the next steps in a logical manner in order to move the project forward. List feasible and specific actions, such as securing funding and starting construction work. Arrange the steps based on priority and urgency.		
Timeframe for achieving the Action	✓	This is an item that indicates the estimated time until each action is completed. It provides a measure of progress management, and contributes to clarifying schedules and		

	examining achievability. This item should clearly indicate a time period, such as by classifying it into short-term, medium-term, and long-term.
✓	

Points to consider when formulating an action plan

1. Synergy between actions:

Each action should be designed to work in coordination with other actions, not as independent functions. For example, it is possible to significantly improve disaster response capabilities by simultaneously implementing road maintenance (ensuring evacuation routes) and strengthening evacuation shelters.

2. Coordination between actions:

When actions are related to each other, it is possible to eliminate waste by efficiently sharing resources rather than duplicating them. For example, if there are multiple construction projects in the same area, sharing the survey and planning phases can lead to cost reductions. One of the issues to be discussed is how to coordinate schedules and budgets between related actions that are handled by different organizations, and eliminate unnecessary duplication.

3. Risk management:

It is also important to consider the risk of some actions being delayed or not carried out. In such cases, it is necessary to plan for the possibility of delays or non-implementation, as the impact of such delays could spread to other actions. It is useful to clarify the "critical path" and prioritize the management of progress for important actions. It is also useful to visualize the dependencies between actions (e.g. using flowcharts or Gantt charts). In particular, when planning public buildings in flood-prone areas, it is important to take into account whether or not structural measures to mitigate flood damage have been implemented in advance, so it is important to be able to see the schedule and implementation status of each action.

The list of priority projects in Section 5.2 above is described in detail in Chapter 4 in this guideline.

5.3 Monitoring and Updating of the Plan

In 5.3, the proposed projects shall be organized in terms of how they will be implemented in the implementing agencies and how this plan will be updated based on the status of implementation. The policy for updating the plan shall be confirmed at the UzSC just prior to the last workshop, and is described in this section.

The proposed description is as follows.

5.3 Monitoring and Updating of the Plan

For appropriate implementation of the projects by project implementing agencies, this plan is to be monitored and updated by UzDMC and DDMC, with the support of DDM and the Focal Point Operational Coordination Group (FPOCG; a group to advise coordination of DMC activities and provide recommendations for future actions at the central level, defined in SoD), in the following steps.

Step 1: Monthly Monitoring by UzDMC

The UzDMC reviews the status of each Action in Chapter 5.2 in the monthly Upazila Development Coordination Meeting, specifically “Ongoing activity/Current status”, with reference to the typical steps of the project implementation below, and report it to DDMC. Findings are recorded and shared with DDMC.

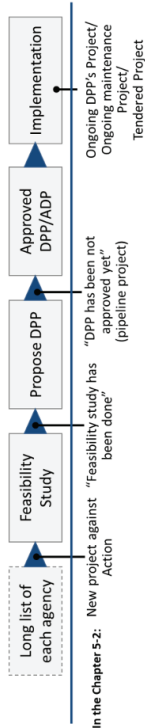


Figure. Typical Steps for reviewing the Current Implementation Status¹

Notes:

The figure above illustrates typical steps for structural countermeasures like roads and embankments. However, the exact project flow varies significantly depending on the specific project's requirements. Consequently, this general flow won't always be directly applicable to every situation.

Step 2: Consolidation by DDMC

DDMC compiles reports from UzDMCs, summarizes progress and key issues through a Monthly Development Coordination Meeting of the District, and prepares and submits a brief to DDM. DDM then compiles the reports, summarizes the progress and gaps in project implementation, and organizes information for discussion in FPOCG.

Step 3: Quarterly FPOCG Review and Coordination

FPOCG reviews and discusses the DDMC's inputs presented by DDM.

This discussion includes:

- Highlighting projects facing delays in DPP processing
- Identifying coordination needs (e.g., between road improvement and drainage system design)
- Notifying relevant stakeholders about missing feasibility studies or land acquisition issues as well as their budgets

¹ Ongoing DPP's Project/Tendered Project: Those projects/Schemes are listed in DPP. Project funds come from ADP/Annual Budget/development partners. This type of project requires F/S and DPP approval. "Ongoing" in this context refers to projects that are currently in the implementation stage or have completed the tendering process. Ongoing Maintenance Project: These projects or schemes are included in a specific maintenance list and receive annual approval as part of the Annual Development Plan (ADP). Unlike DPP projects, these do not require a Feasibility Study.

Step 4: Information Sharing and Dialogue

FPOCG shares the discussion results with MoDMR, implementing agencies, specifically their respective planning units, for taking necessary actions for implementation by them. Feedback is also provided to DDMCs, who are encouraged to follow up with UzDMCs and local line agencies.

Step 5: Recommendation to Review the Plan

If significant issues or changes are identified, DDM recommends DDMC to suggest reviewing the plan, based on the discussion in FPOCG. DDMC informs UzDMC for further action.

Step 6: Plan Updating and Documentation

UzDMC updates this UzDRRAP if needed, with DDMC validation. Updates are shared with DDM and FPOCG for record and continued monitoring.

The conceptual model for monitoring and updating this plan is shown below.

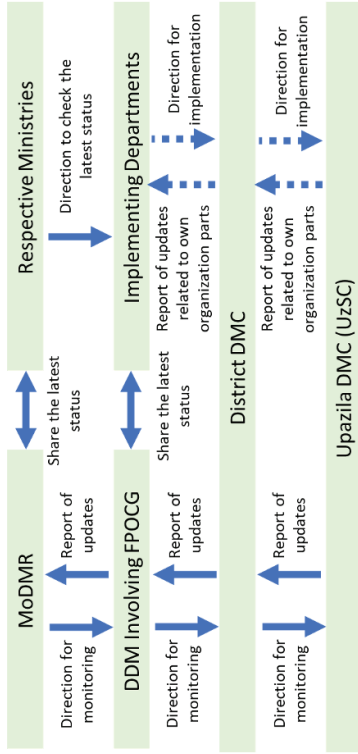


Figure. Conceptual diagram for monitoring and updating the plan

3-3 Planning and Implementation Work flow

1) Guide for the UzDRRAPs by JICA's 8-Step method

The "8-Step method" which was compiled by JICA, is a practical and feasible method to develop a local DRR strategy/plan with concrete measures for investment. It is based on the idea of SFDRR.

Very few developing countries had already completed local DRR plans. Even though, majority of plans consider only actions targeting "responses" or "preparation" for emergencies and risks, but not to "reduce" risks by themselves.

The "8-Step Guide" enables leaders and planners of local administrative organizations especially in potential risk areas, to formulate or improve their Local DRR Plans to promote investment in DRR and to ensure the steady implementation of countermeasures to reduce residual risks.

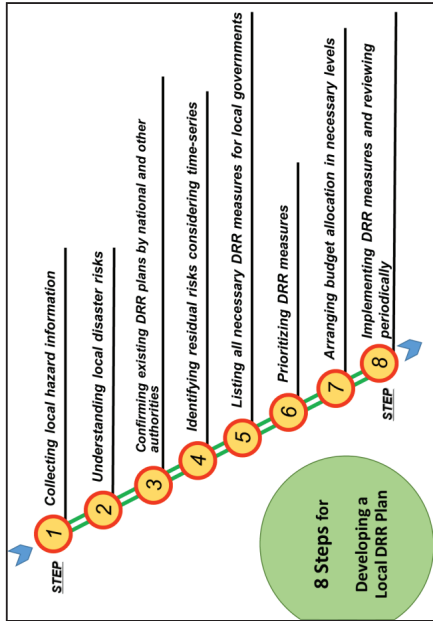
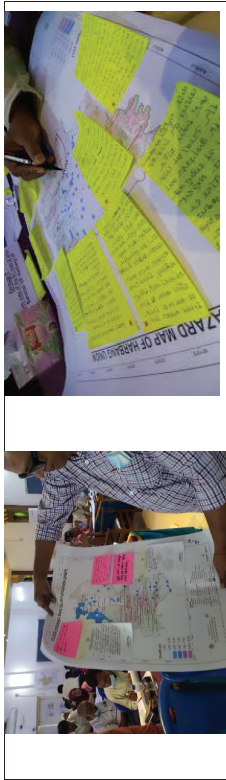


Figure 3-5 8 STEPS for developing a Local DRR Plan

2) Planning Work Flow

Local disaster risk reduction plan will be carried out by holding a workshop using a table-top exercise method. The activity aims to build a collaborative system between related organizations and to promote common awareness of cross-sectoral Disaster risk reduction.



Photos: Implementation of local disaster risk reduction plan formulation exercises

Workshops for developing local disaster risk reduction plan will be implemented through three (3) divided phases by steps. 1st workshop phase is understanding risks including "Step 1, 2, 3, 4" of the "8 step method" mentioned in 2-3. It is important to participate union DMC in the workshop to clarify local risks and actual situation. After summarizing and documentation of the result of the workshop phase 1, the workshop phase 2 will be carried out. 2nd workshop phase is considering measures including "Step 4, 5, 6" of the "8 step method". After summarizing and documentation of the whole result of the workshops, 3rd workshop for drafting the UzDRRAP will be held to share to governmental authorities and related line ministries.

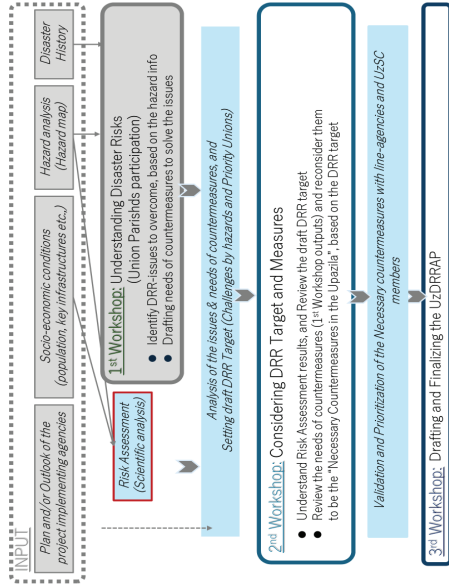


Figure 3-6 Flow of the Implementation of the Local Disaster Risk Reduction Planning

3) Implementation Schedule

The implementation schedule for formulating a Upazila Disaster Risk Reduction Plan in the target Upazila is expected to be about 6 months through the holding of 3 UzDRRP formulation workshop and at least two Upazila Sub Committee (UzSC) meetings. The implementation period can be adjusted appropriately according to the social scale of Upazila, the situation of disasters, and the structure of the implementing organization. The schedule table is shown in Figure 3-3.

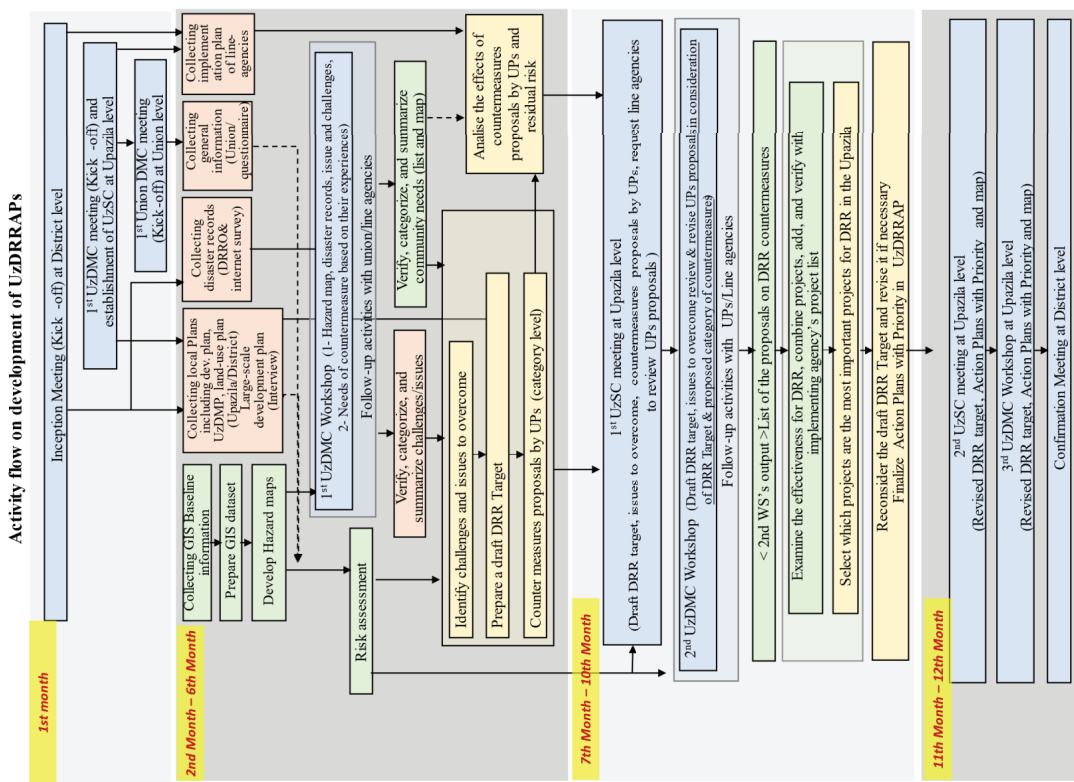
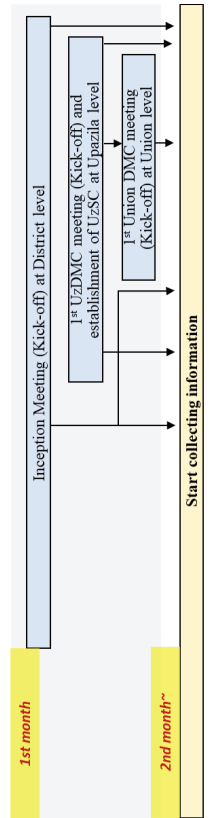


Figure 3-7. Implementation Schedule of UzDRRAP

The planning schedule can be divided into the following three phases

- ◆ Preparation phase of DRR planning
- ◆ Planning Phase -Information Gathering and Analysis -
- ◆ Approval and Monitoring Phase

Preparation phase of DRR planning (1st Month)



Before the Inception Meeting (Kick-off)

- (1) Selection of District and Upazila to support DRRP formulation by LDRRAP Unit in DDM

Work 1-1: DDM assigns personnels for the LDRRAP Unit to make decisions on Upazila priority and the number of target Upazilas.

- (2) Contracting with Local Consultant in the selected District

Work 2-1: Select a consultant to be contracted for the practical work of organizing workshops and UzSC meetings, collecting and organizing various types of information, and writing the draft UZDRRAP, specifying the period of the plan formulation, the method of formulation, and the other outputs.

Inception Meeting at District level (Kick-off) and 1st Upazila Sub Committee Meeting

- (3) Holding Inception meeting (Kick off) at District level

Work 3-1: Hold a Inception meeting to discuss the roles and responsibilities of the stakeholders (Representatives of Union Parishads, Line agencies at central and local level, and DDM) to formulate UzDRRAPs in selected Upazilas. Overall schedule until the UzDRRAP approval is agreed in this meeting.

- (4) Establishment of UzSC in selected Upazila (as a decision-making body on coordination with stakeholders, formulation schedule and setting the DRR

targets)

Work 4-1: holding a pre-meeting to establish the UzSC, inviting DRRO and key person of the DDMC

The meeting agenda includes topics below;

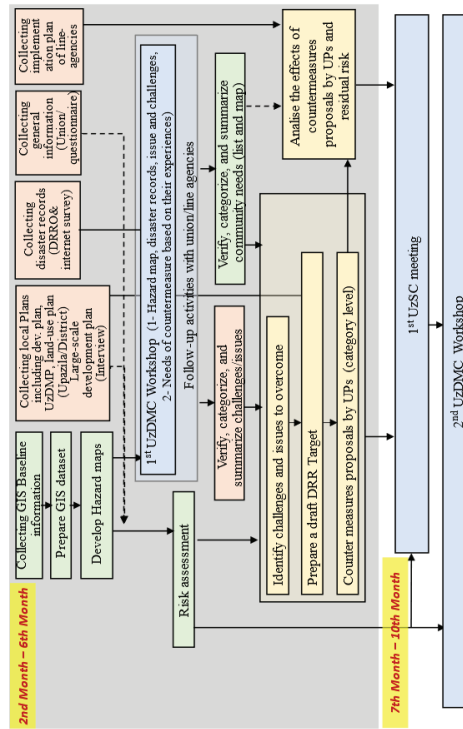
- Review of DRR plan objectives,
- Benefits of the DRR Plan,
- Planning process,
- Stakeholder responsibilities, and
- Identification of Workshop participating institutions/Union Parishads)
- Request to support for providing information

Work 4-2: holding a pre-meeting with Union DMCs individually.

The meeting agenda includes topics below;

- Review of DRR plan objectives,
- Benefits of the DRR Plan,
- Planning process,
- Stakeholder responsibilities, and
- Identification of Workshop participating institutions/Union Parishads)
- Request to support for providing information

Planning Phase-1 -Information Gathering and Analysis for 1st UzSC and 2nd WS (2nd month to 6th month)



(5) Collection of hazard and risk information

Work 5-1: Develop and distribute hazard maps → Preparing for 1st workshop
 - Sub consultant collects GIS baseline information, and prepare GIS dataset.

Work 5-2: Collect relevant information for risk assessment.

- Local plans including Upazila Development Plan, Land Use Plan, Master Plan (Implementing line agencies and Pourshava)
 - Disaster records
 - Socio economic information in Union and Upazila
- After the first workshop (preferably before the WS), the local consultant shall review the general structure of the UzDRRP, or refer to past case studies such as three districts six Upazilas (Cox's Bazar, Sunamganj, and Kurigram), to gather the necessary information to describe Chapters 1 to 3.

Questionnaires shall be distributed to Union Parishads and related implementing agencies to collect and organize the information necessary for the description of Chapters 1 through Chapter 3.

Box-6 Gender consideration

Information should be collected with attention to:

- Gender-specific disaster impacts (e.g., access to shelters, responsibilities)
- Mobility challenges of elderly and disabled individuals
- Gender-responsive evacuation and recovery planning

See Training Manual Appendix for the contents of the questionnaire items. In addition to the questionnaire, the Local Consultant shall start collecting information on the required items from the websites of the relevant government agencies, etc.

(6) Hold 1st UzDMC Workshop

Work 6-1: The 1st Workshop is to be held to share hazard map and disaster records, and discuss issues and challenges. The workshop starts collection of the needs of countermeasures based on the people's recognition of the representatives of the participants from Union Parishads.

Agenda items to be identified with stakeholders at the first workshop

- Hazard types in the region (hearing opinions including those not reflected in the hazard maps),
- Results of analysis of hazard maps (based on simplified analysis) for each disaster type (and collection of hazard information not reflected in the maps)
- The population, rice paddies, and other public facilities in the potentially affected union,
- Economic damage to paddy fields, etc.
- Expected countermeasures proposed by Union Parishads

(7) Gathering and organizing information on Countermeasures and local needs after the workshop (Following Up Task)

Work 7-1: After the 1st Workshop, challenges and issues and expected countermeasures that representative of each Union Parishad stated shall be summarized as a following-up activity of the workshop. The time allocation for this in the workshop is limited. The local consultants visit each UP to obtain those information. .

Work 7-2: The countermeasures are organized as a list and summarized in the countermeasure map based on the following-up work above.

(8) Risk assessment and drafting Disaster Risk reduction Target(DRR target)

Work 8-1: Hazard exposure for each hazard type on agricultural fields, population, transportation infrastructure, and important economic values such as public facility is to be summarized on the risk assessment map. The result to show scale of the risk in each Union shall be analyzed by quantitative method such as scattered charts to set priority area.

Work 8-2: Identified challenges and issues to be overcome must be reflected and integrated in the DRR Target when it describe necessary mission and countermeasures.

Work 8-3: Prepare a draft DRR Target, referring to hazard exposures for the values above mentioned and challenges on the hazard prone areas.

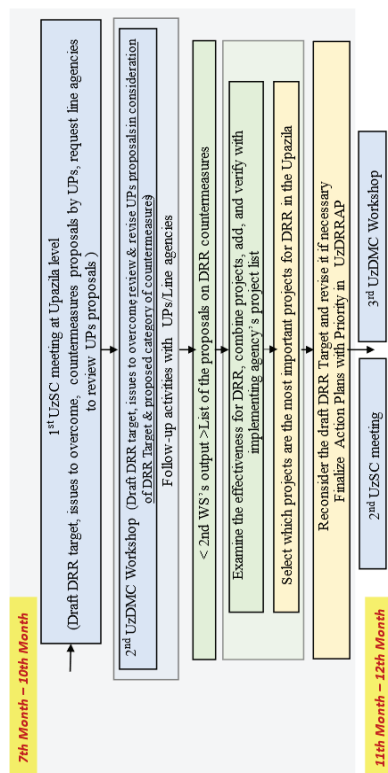
Work 8-4: Establish category of the possible countermeasures.

- Structural measures (measures to reduce hazard impact, and infrastructure necessary for emergency response)

-Non-structural measures (Regulations and Policies, Early warning and Communication, Disaster Management Training and materials, DRR education & Public awareness raising)

Based on the category above, summarize the countermeasure proposed.

Planning Phase-2 – Review of Countermeasures and DRR Target setting (7th month to 10th month)



(9) Holding 1st Upazila Sub Committee meeting

Work 9-1: 1st UzSC discusses on Draft DRR Target and proposed countermeasures by UPs.

Meeting Agenda
- Sharing Risk assessment result and challenges & issues
- DRR target drafting integrated with challenges and issues
- Request on necessary cooperation with the UPs proposals review
- Continuing from the 1 st workshop, UzSC meeting shall be held to collect information on implementing agencies' projects, including status of project plans, budgets, estimated priorities in implementing agencies, specifications of each project, status of plans, and benefits.

Work 9-2: 1st UzSC requests necessary support to provide projects information to line agencies in order to check and review the proposed countermeasure with existing or pipeline project in the line departments.

(10) Holding 2nd UzDMC Workshop

Work 10-1: Based on the feedback of 1st UzSC, hold 2nd UzDMC Workshop to discuss on Draft DRR Target and proposed countermeasures.

Issues to be understood by stakeholders at the second workshop

Countermeasures proposals by UPs are to be reviewed and revised based on DRR Target.

UzSC starts making the lists of needed countermeasures from both communities (Union parishads) and local offices of implementing agencies.

To initiate this task, the UzSC shall request all interested parties, including implementing agencies, to cooperate in the necessary work.

UzSC shall provide an overall picture of countermeasures to create UzDRRP Chapter 5-1 and review information on existing/non-existing countermeasures

(11) Examine the effectiveness for DRR, combine projects, add, and verify with implementing agency's project list

Work 11-1:

UzSC members re-examine the UP proposals, and formulate an action plan to address the issues raised at the WS, based on the DRR target. The GIS map is used to check how the action plan implemented by the Line Ministry corresponds to the issues raised by the UP and the proposed projects for addressing them.

What is important here is the technical judgment of the implementing agencies (agencies) regarding the countermeasures proposed by the UPs (proposing parties).

1) Limitations of Resident Proposals

Even if residents share hazard maps and understand the results of risk analysis, they do not have specialized disaster prevention knowledge, so their proposals are not always effective in controlling hazards or reducing damage.

2) Differences in how phenomena are perceived

Residents often see flooding and urban water logging as local issues. However, from the perspective of the implementing agency, these are phenomena that have a wide-ranging impact, and a comprehensive understanding is required.

3) Project priorities

Even if the residents' proposals and the actions envisaged by the implementing agency are in agreement, project priorities are based on technical judgments. Therefore, the priorities considered by the residents and the judgments made by the implementing agency may differ.

For example, when installing irrigation facilities along a large river or in a Char area,

riverbank erosion countermeasures are a prerequisite. Even if irrigation facilities are strongly desired as a drought countermeasure, it is impossible to install permanent facilities in a situation where the riverbanks are unstable.

Therefore, in the overall action plan, riverbank erosion countermeasures are prioritized, and the installation of irrigation facilities is positioned second.

Through this task, perspective of the priority by line agencies, the Objectives and the program in the DRR target are to be integrated.

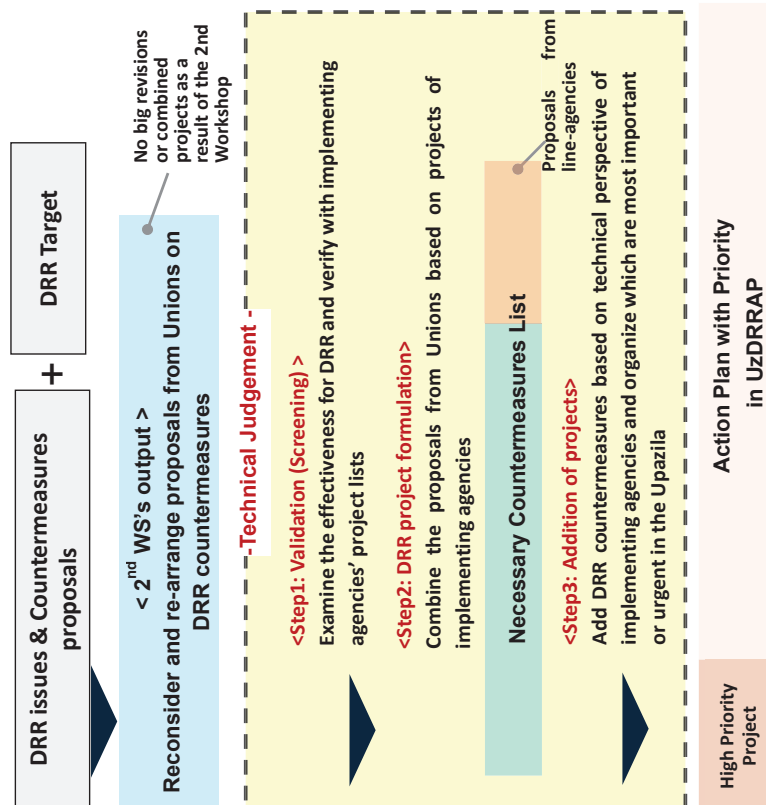


Figure 3-8 Priority setting in Action Plan

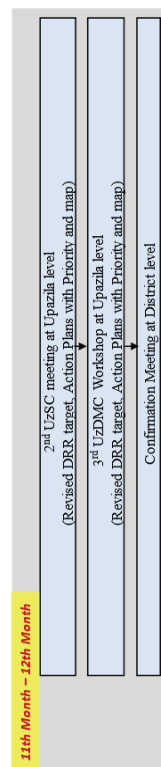
(12) Review the DRR target and finalize the countermeasures list and map

Work 12-1: Based on the task above, draft DRR target must be reviewed and

revised if necessary.

Summarize which proposed countermeasures are expected to highly contribute to achievement of the DRR targets and review the information on existing/unaddressed countermeasures in UzDRRP Chapter 5-1 and discuss whether the unaddressed countermeasures should be applied to future plans. Through this task, countermeasures map and list are to be finalized.

Planning Phase-3 - Validation of Countermeasures and DRR Target setting (7th month to 11th month)



(13) Holding 2nd UzSC meeting to agree on priority areas and Disaster Risk Reduction Targets and countermeasures

Work 13-1: Holding a second UzSC meeting.

UzSC meeting will be held when the above work at Planning phase 1 and 2 is completed.

MEETING Agenda-
Agenda 1: Confirmation of DRR Targets, objectives and program,
Agenda 2: Sharing action plans
→ summarize the priority of actions to achieving DRR targets

If there are objections or additional modifications to the action plans compiled by the local consultant, these should be commented on at this second UzSC meeting

(14) Drafting of UzDRRP

Work 14-1: Information collected and organized through questionnaires and web research is to be included in draft chapters 1-4 of the DRR plan.

It is preferable to start work on Chapters 1 and 2 before the workshop, since most of the topics in these chapters are general information that does not require interviews with participants at the workshop.

For hazard maps and risk analysis in Chapters 3 and 4, the results of the workshop and the presentation materials should be used.

Work 14-2: Write Chapter 5 based on the discussions at the UzSC.;

(15) **Exchange of opinions with central line ministries**

Work 15-1: Hold a FGOCG on DDM's initiative to share an overview of the UzDRRP, exchange ideas and get feedbacks.

(16) **Consensus of all stakeholders in the Upazila DMC at the 3rd workshop.**

Work 16-1: Hold the third workshop.

Workshop Agenda. - Presentation of the overall plan, - Review of priority projects (Chapter 5) by all DMC members, - UzDRRP approval process (see 3-3).
--

(17) **Holding District DMC meeting.**

Work 17-1: Toward the approval process, district DMC meeting initiated by Deputy Commissioner is to be held to confirm the final outcome of the plan.

Approval and Monitoring phase

(18) **Monitoring for plan update and promotion of project implementation**

Work 18-1: Holding MoDMR Meeting

Agenda: Confirmation on approval process of the UzDRRAPs.

Work 18-2: Holding FGOCG Meeting

Agenda: Confirmation of project monitoring schedule and instructions to UzDMC, and progress report.

APPENDIX 3-3

Training Manual and Materials for UzDRRAP Formulation

**1) Training Manual for
Upazila Disaster Risk Reduction (DRR) Action Plan
Formulation Training and Basic Training on DRR**

Training Manual for Upazila Disaster Risk Reduction (DRR) Action Plan Formulation Training and Basic Training on DRR

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July 2025

The Project for Capacity Enhancement on Formulation and
Implementation of Local Disaster Risk Reduction Plan (LDRRP)

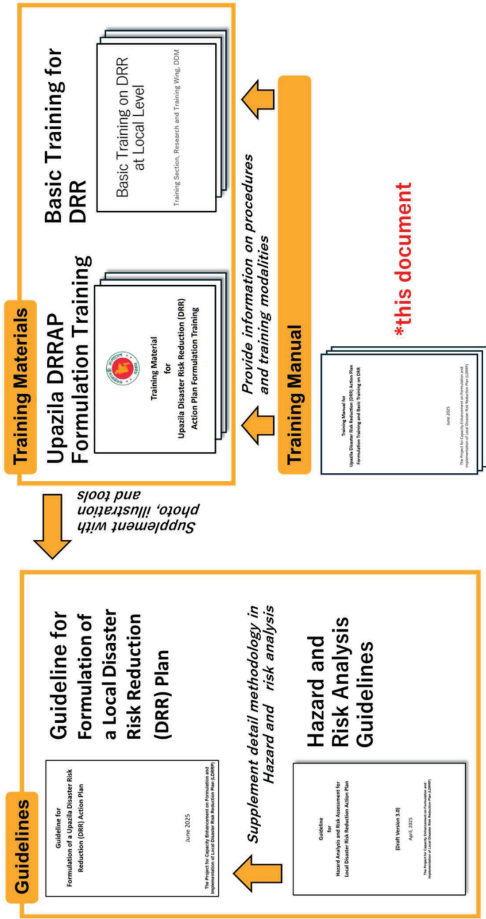
1. Introduction

1.1. Purpose of the Manual

Using the Upazila DRR Action Plan (UzDRRAP) guidelines prepared under the JICA project and with the support of the relevant working group, the District Disaster Management Committee (DDMC) and the Upazila Disaster Management Committee (UzDMC) shall review and approve the regional disaster management plans that have been prepared. In addition, they shall prepare, and update manuals and training materials related to these plans as necessary.

Furthermore, based on UzDRRAP developed, DDM, DDMC and UzDMC shall work together to ensure that the disaster management capacities of relevant defense organizations are strengthened to an appropriate level. Efforts should be made to raise the level of disaster preparedness and response at the district and upazila levels.

To this end, manuals and training materials were developed and should be continuously improved, and the necessary training should be conducted systematically so that disaster management capabilities are enhanced across all relevant divisions and upazilas. The figure below shows the relationship between the Guidelines, Training Materials and this “Training Manual”.



1.2. Scope and Applicability

The training manual will focus on how to implement the training related to the formulation of UzDRRAP. The process for budget allocation for the training program and the detailed method for the training implementation are described in the training manual.

This manual is intended to be referred to by the DDM officer in the central level to proceed with the training activity. The process is based on the experience of the training activity conducted through the project funded by JICA. During the project the Basic Training on DRR was conducted for two fiscal years from 2023-2024 and 2024-2025 with a total 3 ToT and 9 upazila level training conducted. In addition, trial training for the UzDRRAP formulation was conducted in April 2025. The training program was made intended to be proceeded by DDM and expected to be continued by securing budget and resources to conduct the training.

2. Training Preparation Schedule

During the JICA supported project of “The Project for Capacity Enhancement on Formulation and Implementation of Local Disaster Risk Reduction Plan (LDRRP)”, the “Basic Training for DRR” was conducted utilizing the annual training budget of DDM, managed by the Training and Research Wing. It is expected that through the leadership of the DDM officials in charge of UzDRRAP to continue the implementation of the training activity. The training proposal prepared for the project is attached to the following pages.

The training proposal shall be prepared and submitted by the person in the position for leading UzDRRAP formulation and to be submitted to the DG and the Director of Training and Research wing and to be consulted, included in the annual training plan. Since the decision of the annual training program will be a joint decision through the directors the benefit and needs for the training activity shall be considered.

The fiscal year will start in July and end in June; therefore, the proposal shall be made and considered at the end of the fiscal year to be included in the Annual Training Plan (ATP).

Table 2-1 Schedule of Annual Training Plan Preparation

Month	Actions
June	Planning of Training Component for the Next Fiscal Year 1) Preparation of Training Proposal (including the Batch Number and Type of Training) 2) Preparation of Training Program 3) Preparation of Training Budget Estimation
July	Approval of Annual Training Plan
Two Month Before Training Implementation	Preparation of the Training Implementation Plan 1) Preparation of Training Agenda 2) Selection of Lecturer and Participants
One Month Before Training Implementation	Budget Allocation and Coordination with Lecturer 1) Confirmation of Lecturer and Arrangement of Lecture Contents 2) Confirmation of the Participants
One Week Before Training Implementation	Preparation for the Training Implementation 1) Preparation of Training Materials 2) Final Confirmation with the Lecturer on Time Management

3. Training Component Consideration

3.1. Preparation for Training Proposal (including the Batch Number and Type of Training)

Training program was prepared from the point of view to enhance the understanding in the DDM central level and local level on the importance of the Disaster Risk Reduction in focus on the pre-disaster investment to prevent future disasters. In addition, as a detailed methodology to support the formulation of UzDRRAP as a part of the Disaster Management Plan as defined in the SOD, the UzDRRAP formulation training program was developed in line with the UzDRRAP guidelines. Therefore, it is expected for DDM to secure the budget and momentum to continue the Basic Training on DRR and UzDRRAP formulation as a regular activity of the DDM, by securing budget.

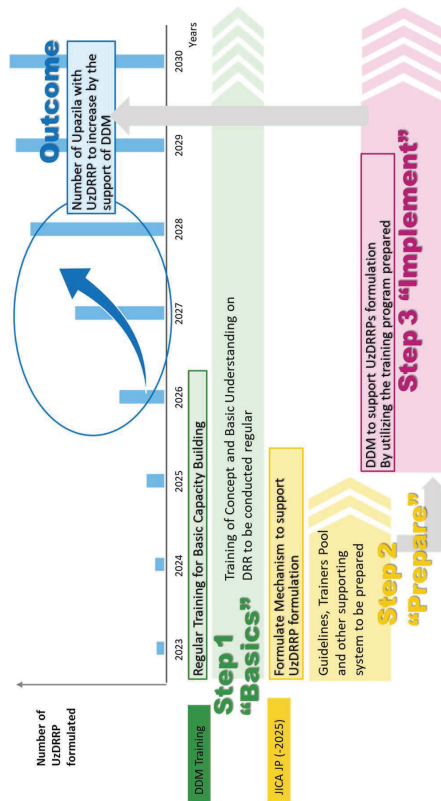


Figure 3-1 Image of the Training Implementation to Facilitate the Formulation of UzDRRAP

The "Basic Training on DRR" was formulated in the purpose to enhance the understanding of Disaster Risk Reduction and the importance of pre-disaster investment on DRR measures. And it is expected to be continued as a regular training program conducted by DDM to continuously enhance the capacity of the UzDMC members who are responsible for the formulation of UzDRRAP according to the SOD.

The "UzDRRAP Formulation Training" was formulated in the purpose to enhance the actual planning process of the UzDRRAP formulation. And it is expected to be provided to the Upazila with planning to start the activity on the UzDRRAP formulation to be familiarized with the process of the UzDRRAP formulation.

Based on the objective of each training course the training components to be conducted in the specific fiscal year shall be summarized. Example of the training proposal is mentioned Table 3-1.

Table 3-1 Example of Training Proposal for a Specific Fiscal Year

No.	Name of Course	Number of Batch/Year	Number of Participants/Batch	Venue	Remarks
01	Basic Training on DRR of UzDMC	10	30	At Upazila Level	One Day Training
02	ToT on UzDRRAP Formulation	02	25	At DDM HQ	Three Days ToT
03	UzDRRAP Formulation Training in Upazila Level	20	30	At Upazila Level	One Day Training

3.2. Preparation of Training Program

To provide the objective and outline of the training, the training program shall be documented. The proposed and outline of the training program prepared is

Basic Training for DRR

Purpose:

- ✓ Understanding the importance of DRR investment and the necessity of disaster risk reduction
- ✓ Understanding the SoD and the role of DDM, including the formulation of DMP
- ✓ Introduction to the UzDRRAP

Duration:

- ✓ 1 day

Number of Participants:

- ✓ 30 - 50 participants per batch

Level of Participants:

- ✓ Uz. Chairman
- ✓ Uz. Vice Chairman (Male/ Female)
- ✓ UNO
- ✓ DRRO
- ✓ PIO and other Upazila DMC members including relevant Department Heads
- ✓ Selected Union Chairman & Female member's
- ✓ Paurashava (Municipality) Mayor and Counselor

Lecturer:

- ✓ Nominated Trainers of DDM by the DG

Budget

- ✓ 93,400 Tk per batch * Budget referred from the planned budget in the FY 2024-2025

Contents:

Section-1: Basic Knowledge on Disaster and Disaster Risk Reduction (DRR)

- ✓ Natural Disaster in Bangladesh
- ✓ International Trend in Disaster Risk Reduction
- ✓ Importance and Concept of Disaster Risk Reduction
- ✓ Countermeasures against Disasters

Section-2: Responsibility of DDM and the Importance of Local DRR Strategy

- ✓ SOD and Responsibility of DRR Relevant Organization
- ✓ SFDRR and the Importance of Local DRR Strategy

Section-3: Concept and Basics of UzDRRAP

- ✓ Good Practices of pre-disaster DRR investment
- ✓ Introduction of the UzDRRAPs as a Risk Reduction Action Plan (RRAP)
- ✓ Example of UzDRRAP from the experience in pilot upazila

ToT for the Basic Training for DRR

Purpose:

- ✓ To Develop capacity of the DDM officers or selected DRRO, PIO to be capable of facilitating the Basic Training for DRR in the Upazila level.
- ✓ To refresh the DDM officers which have already taken the ToT for the Basic Training for DRR

Duration:

- ✓ 3 days

Number of Participants:

- ✓ 30 - 50 participants per batch

Level of Participants:

- ✓ DDM officers Director, Deputy Director, Assistant Director, Assistant Engineer
- ✓ Selected DRRO and PIO

Lecturer:

- ✓ Nominated Trainers of DDM by the DG

Budget

- ✓ 232,600 Tk per batch *Budget referred from the planned budget in the FY 2024-2025

Contents:

The Contents follow the same contents of the Basic Training for DRR. However, the ToT training contents will include reference slides for further explanation. In the Upazila level implementation of the Basic Training of DRR the slides for the Key Concept / Issues and the Explanation will be utilized. In the ToT the reference slides will also be used and the time for discussion to understand the contents clearly will be provided.



Figure 3-2 Type of Slides in the Training Materials for the Basic Training on DRR

UzDRRAP Formulation Training

Purpose

- ✓ To understand the purpose and benefit of the UzDRRAP
- ✓ To understand the concept and description of the UzDRRAP
- ✓ To understand the planning process of the UzDRRAP formulation
- ✓ To be familiar with the activities for UzDRRAP formulation (e.g. Discussion to be facilitated, Methodology of workshop using maps or Forms and templated to be used)
- ✓ To formulate a draft schedule of UzDRRAP formulation activity

Duration

- ✓ 1 - 2 days

Number of Participants:

- ✓ 30 - 50 participants per batch

Level of Participants

- ✓ Uz. Chairman
- ✓ Uz. Vice Chairman (Male/ Female)
- ✓ UNO
- ✓ DRRO
- ✓ PIO and other Upazila DMC members including relevant Department Heads
- ✓ Selected Union Chairman & Female member's
- ✓ Paurashava (Municipality) Mayor and Counselor

Proposed Lecturer

- ✓ DDM Officers in the Central Level

Budget

- ✓ 116,400 Tk per batch *Estimated budget based on experience during the project implementation

Contents

The Contents consists of three main components following the structure of the UzDRRAP to provide the description on the plan to understand what shall be mentioned in the plan. And the Exercises provide an idea of the process and workshops to be conducted in the UzDRRAP formulation process.

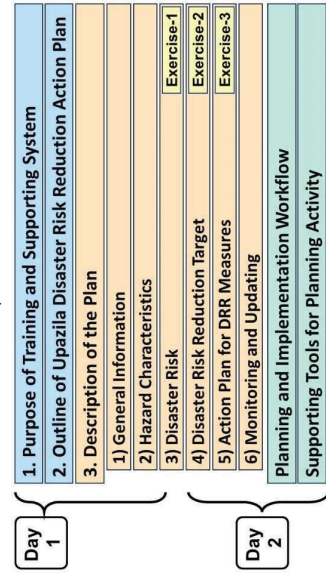


Figure 3-3 Outline of the UzDRRAP Formulation Training

ToT for UzDRRAP Formulation Training

Purpose

- ✓ To Develop capacity of the DDM officers or selected DRRO, PIO to be capable of facilitating the UzDRRAP Formulation Training in the Upazila level.
- ✓ To refresh the DDM officers which have already taken the ToT for the Basic Training for DRR

Duration

- ✓ 2-3 days

Level of Participants

- ✓ DDM director like director and Deputy Director / Asst. Director / Asst. Engineer
- ✓ Selected DRRO and PIO
- ✓ Local Consultants which are interested in supporting the UzDRRAP formulation in Upazila level

Proposed Lecturer

- ✓ DDM Officers in the Central Level

Budget

- ✓ 255,600 Tk per batch *Estimated budget based on experience during the project implementation

Contents

The presentation material will follow the contents of the UzDRRAP Formulation Training. Which will be covered also in the ToT. The ToT will take more time for discussion and the mapping exercise for the participants to be familiar with the process. The trial ToT was conducted on April 2025, during the Project for Capacity Enhancement on Formulation and Implementation of Local Disaster Risk Reduction Plan (LDRRP) which can be referred to as an example implementation.

Preparation can be conducted through sub-contract to consultants:

The UzDRRAP Formulation Training includes the implementation of Exercise utilizing maps. The procedures of the exercise are mentioned in the training materials. However, due to the limitations of DDM officers to take time for the exercises, the portion of the training can also be sub-contracted to the consultants.

Attached Documents for Reference (Training Program)

- ✓ Attachment 1: Training Program for the Basic Training on DRR
- ✓ Attachment 2: Training Program for the ToT for Basic Training on DRR
- ✓ Attachment 3: Training Program for the UzDRRAP Formulation Training
- ✓ Attachment 4: Training Program for the ToT for UzDRRAP Formulation Training

3.3. Preparation of Training Budget Estimation

The budget allocated for the training conducted through the JICA project is summarized in the table below. The Basic Training for DRR was implemented in two fiscal years. For ToT the implementation budget is around 60,000 – 90,000 BDT for a single day program. For the ToT program of fiscal year 2024-2025, in the budget DDM did not include the budget for travel expenses of the trainee to be invited from the regions as the travel expenses paid from the upazila level yearly budget. According to the prevailing practice of DDM, when an Upazila/District level officer participates in any training or workshop at the DDM headquarters, the travel expenses are covered by submitting the bill from the annual budget of his/her own workplace.

Annual Training Plan for the Fiscal Year 2023-2024

Activity	Target Group	No. of Events	Participants per Event	Estimated Cost (BDT)
ToT of Basic Training on Disaster Risk Reduction (DRR) at Local Level (1 day program)	Officials	1	25	63,380
Basic Training on Disaster Risk Reduction (DRR) for UzDMC Members (1 day program)	UzDMC Committee Members	3	50	62,280 per batch

Annual Training Plan for the Fiscal Year 2024-2025

Activity	Target Group	No. of Events	Participants per Event	Estimated Cost (BDT)
ToT of Basic Training on Disaster Risk Reduction (DRR) at Local Level (2 days program)	Officials	1	25	168,790
Basic Training on Disaster Risk Reduction (DRR) for UzDMC Members (1 day program)	UzDMC Committee Members	6	30	62,580 per batch

Although the UzDRRAP formulation has not yet been implemented in the Project for Capacity Enhancement on Formulation and Implementation of Local Disaster Risk Reduction Plan (LDRRP) the budget can be estimated based on the duration of the event. In the UzDRRAP formulation training and its ToT, since exercise component is included, the budget for the preparation of the exercise can be higher. The example and format for budget estimation are summarized in the attached documents.

Attached Documents for Reference (Budget Estimation)

- ✓ Attachment 5: Format for Budget Estimation for the Basic Training on DRR
- ✓ Attachment 6: Format for Budget Estimation for the ToT for Basic Training on DRR
- ✓ Attachment 7: Format for Budget Estimation for the UzDRRAP Formulation Training
- ✓ Attachment 8: Format for Budget Estimation for the ToT for UzDRRAP Formulation Training

4. Training Implementation Plan

4.1. Preparation of Training Agenda

After the training program is fixed the agenda shall be formulated to follow the decided duration of the training program. A standard agenda of each training component is summarized in the attachment. For the Basic Training on DRR, the ToT program has been conducted for two fiscal years, and the duration is fixed by 1 day for the Upazila level and 3 days for the ToT in the central level.

For the UzDRRAP formulation training, although the trial training was conducted for 2 days duration, the duration can be updated to match the needs of the Upazila level which is often difficult to secure 2 days consecutive implementation of workshops.

4.2. Selection of Lecturer and Participants

The lecturer shall be selected from the DDM officer in the central level or from the selected DRRO or PIOs which have taken the ToT for each training contents. For the lecturer of the ToT, the officers with experience in the Project for Capacity Enhancement on Formulation and Implementation of Local Disaster Risk Reduction Plan (LDRRP) shall be selected based on their experience. To secure enough trainers for the training implementation, ToT activity shall be conducted continuously every year to make sure the trainer has a refreshment ToT.

In appointing the trainer, the specific section of the training program shall be identified for the lecturer to prepare well for the training implementation.

For the participant selection shall be conducted by the DDM officers in the central level, considering the situation of the UzDRRAP formulation status at the Upazila level. Since the purpose of the training activity is to facilitate the UzDRRAP formulation and finally promote the investment to the DRR measures in the Upazila level. Therefore, it is important to well plan the participants so that it will enhance the activity at the Upazila level. The sample agenda of each training activity is described in the attached document.

Attached Documents for Reference (Sample Agenda)

- ✓ Attachment 9: Sample Agenda for the Basic Training on DRR
- ✓ Attachment 10: Sample Agenda for the ToT for Basic Training on DRR
- ✓ Attachment 11: Sample Agenda for the UzDRRAP Formulation Training
- ✓ Attachment 12: Sample Agenda for the ToT for UzDRRAP Formulation Training

5. How to Use Training Materials

5.1. Basic Training for DRR

The Training Materials for the Basic Training of DRR consists of the “Key Concept / Issues” with indication on the right top in yellow color and “Explanation” which is included both in the Training and ToT material. In the ToT material in addition there are “Reference” material which is a supplemental information for the lecturer and thus not included in the training material.

As shown below the three types of slides shall be utilized for different purposes. The appropriate achievement level of the participants is for them to understand the “Key Concept” after the training implementation and the lecturer shall be prepared to clearly explain the “Key Concept”.

Table 5-1 Explanation of the Contents of the Training Materials on Basic Training on DRR

Key Concept / Issues	Image	Contents
Key Concept / Issues	What is the Elements of Disaster Risk? It is important to understand the four elements of “Disaster Risk” to understand and consider how to reduce the risk and the consequent damage or loss caused by disaster. Four Elements of Disaster Risk Risk, Hazard, Exposure, Vulnerability Disaster Risk is the consequence of the probability of a hazardous event and its consequences which result from interactions between natural or man-made hazards, exposure, and vulnerability capacity. (SDP 2019)	Summarize the essential concepts and issues to know in becoming an officer to handle DRR (Disaster Risk Reduction) issues. In the training it is important for the participants to clearly understand the Key Concept. The lecturer shall focus on explaining the “Key Concept” and question if the participants understood the concept. <i>e.g. The elements of the disaster risk are mentioned. To understand that “risk” consists of 4 elements is the “Key Concept” for the participants to understand.</i>
Explanation	What is Exposure? (Flood) In case of flood before urbanization along the river, even the flooding happens there will be no impact. However, if the urbanization happens and assets accumulate along the river it will cause damage.	Provide the explanation of the details of the “Key Concept”. It shall be explained to the participants on in the training at the Upazila level. The participant does not necessarily need to understand fully the contents but shall be able to remember the contents explained and advised to review the contents even after the training to remember the details. <i>e.g. Among the elements consisting of “risk” this slide explains one of the elements which is “exposure” on what it means and the basic idea of “exposure”.</i>
Reference	Elements of Exposure After elements of exposure can include population, housing, assets, infrastructure, health, education, and economic activities. The exposure level is not static. Elements of Exposure (Population Growth) Over the reported time of exposure is “population”. The below map shows a trend in the population growth of Bangladesh from 1981 to 2011.	Provide reference for the lecturer to learn on the detail of the contents. It is prepared considering the questions which might be raised by the participants in the training. For the lecturer to be familiar with the contents mentioned in the reference, they can respond to the question in the training implementation. In the ToT activity, it is appropriate for the lecturer to remember the contents but if they could remember the contents is listed in the ToT material, they can refer to the ToT material when conducting the training and it is advised to keep the ToT material on hand in conducting the training. <i>e.g. Provides the answer to the question which might rise such as “What is the elements of Exposure” and this slide will enable to respond to such questions.</i>

The Training materials for the UzDRRAP formulation training are the same as the ToT and the actual training activity. However, the part to be focused and how to utilize the contents is different.

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The training activity of two mapping exercises and the documentation exercise can utilize the actual situation in Upazila where the training is conducted. In this case, it is required for the person in charge of each Upazila to be able to bring the basemap of the upazila to proceed with the exercises. It is OK even without a detailed analysis result since the purpose of the exercise is to be familiarized with the process of planning.

The activity should be done in a group-workstyle with different groups focusing on different areas or different hazard types.

The format to summarize the result of the group work is provided in the Attachment of this training manual based on the result of the discussion using the map, the formats shall be filled up as the result of the exercise.

Since the time for the exercise is limited, the participant does not necessarily need to fill up all the format but should try to be familiarized with the process and even after the training activity, the participants can continue the exercise since it will be one of the basic activities of the actual planning activity itself.

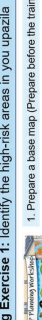
- ✓ Attachment 13 Worksheet for Mapping Exercise-1
- ✓ Attachment 14 Worksheet for Mapping Exercise-2 (1/2)
- ✓ Attachment 15 Worksheet for Mapping Exercise-2 (2/2)
- ✓ Attachment 16 Worksheet for Documentation Exercise (1/2)
- ✓ Attachment 17 Worksheet for Documentation Exercise (2/2)

In the ToT, it is important to recognize how to manage the training activity at the Upazila level. In this context the lecturer for the ToT can prepare a basemap and the hazard map from the pilot project activity. It is advised to print the base map to an A1 size paper and hazard map on a transparent A1 size paper so that it can be overlaid physically. Besides the preparation of basemap and hazard map the exercise follows the same flow with the training activity and the output will be the same format as mentioned in the attachment above.

This part will provide the flow and procedure of the planning activity. The flow shall be read through in the training and ToT.

It is not necessarily to remember all the contents, but it is important to keep in mind the flow and could be referred to in the time of actual planning stage.

In addition, supporting document (template/format or example output from the pilot activity) for each planning steps are mentioned in the slide.



Mapping Exercise 1: Identify the high-risk areas in you upazila

1. Prepare a base map. (Prepare before the training)
2. Identify valuable element
3. Write out the hazard area
4. Identify the high-risk areas
5. Identify Challenges for each hazard on the map

Point: The purpose of the exercise is to be familiarized with the activity and the way of thinking in the planning process. Therefore, data to be used (hazard area, land-use etc.) can be a rough information.

An illustration of a community meeting taking place in a large, open hall. A group of diverse people, including men, women, and children, are gathered around a large table. Some are seated, while others are standing and pointing at a large map or document spread out on the table. The room has high ceilings and large windows, and the atmosphere appears to be one of active participation and discussion. The text '© 2004 by Planning for the Future' is visible in the bottom left corner of the illustration.

Point: The exercise will practice the process to review the hazard situation to consider necessary measures and moreover, practice how to formulate "Disaster Risk Reduction target" based on the information summarized on the map.

1. Review the "DRR target" written in the "Mapping Exercise 2"
2. Fill in the format of "Structure of Action Plan"
3. Fill in the format of "Action Implementation Plan"

Point: The exercise will practice the process of planning and the structure of the action plan. The action plan written can be a rough idea but it is important to be familiarized with the templates and the process of filling up the templates

The planning schedule can be divided into the following five phases

Preparation phase of DRR Planning

Formulate Supportive System	Inspection Meeting
Risk Assessment (Scientific Analysis)	1 st LQDWC Workshop

Planning Phase-1: Information Gathering and Preliminary Analysis

Organize Information Collected and Draft DRR Targets	1 st Update SC Meeting
1 st Update SC Meeting	2 nd LQDWC Workshop

Planning Phase-2: Review of Countermeasures and DRR Target Setting

Exchange of Information with SC Members with consultation with DRR Targets	Review the Draft DRR Targets
2 nd Update SC Meeting	3 rd LQDWC Workshop

Planning Phase-3: Validation of Countermeasures and DRR Target Setting

Coordination for Implementation of the Plan	
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Approval and Monitoring Phase

Practical Guide for the UzDRRAP formulation

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5.3. Preparation for the Training Material

The training manual was handed over to DDM from the Project Team during the project and DDR is responsible for keeping the file of the training material secured and saved for use in the training and to be updated if necessary. Also, at the time of the training activity, the training materials shall be printed out by DDM and therefore it shall be clear where to save the base file of the training material. Below is the list of files handed over to DDM which is preserved by the directors and if necessary, contact the Training and Research wing or the Planning and Development wing for the final product of the training material to be used.

- Basic Training for DRR – Bengali version
- Basic Training for DRR – Bengali version, Training of Trainers (ToT)
- Basic Training for DRR – English version
- Basic Training for DRR – English version, Training of Trainers (ToT)
- UzDRRP Formulation Training – English version *Same materials for the Upazila level Training and Training of Trainers (ToT)

Attachment Documents

Attachment 1: Training Program for the Basic Training on Disaster Risk Reduction (DRR)

Name (নাম)	Basic Training on Disaster Risk Reduction (দুর্যোগ ঝুঁকি হ্রাস বিষয়ক মৌলিক প্রশিক্ষণ)
Purpose (উদ্দেশ্য)	- Understanding the importance of DRR investment and the necessity of disaster risk reduction. (দুর্যোগ ঝুঁকি হ্রাসে বিনিয়োগের গুরুত্ব এবং দুর্যোগ ঝুঁকি হ্রাসের প্রয়োজনীয়তা সম্পর্কে বুঝাপড়া।) - Understanding the SoD and the role of DDM, including the formulation of Disaster Management Plan (SoD এবং দুর্যোগ ব্যবস্থাপনায় DDM-এর ভূমিকা, যার মধ্যে দুর্যোগ ব্যবস্থাপনা পরিকল্পনা প্রণয়নও অন্তর্ভুক্ত, সে সম্পর্কে বুঝাপড়া।) - Introduction to the Upazila Disaster Risk Reduction Action Plan (UzDRRAP) (উপজেলা দুর্যোগ ঝুঁকি হ্রাস কর্মপরিকল্পনা (UzDRRAP) সম্পর্কে পরিচিতি)
Duration (মেয়াদ):	Upazila Level (উপজেলা স্তর): 1 day (১দিন)
Number of Participants (অংশগ্রহণকারীদের সংখ্যা):	30 participants per batch (প্রতি ব্যাচে ৩০ জন অংশগ্রহণকারী)
Batch per Year (প্রতি বছর ব্যাচ):	Upazila Level (উপজেলা স্তর): 10 batch
Level of Participants (অংশগ্রহণকারীদের স্তর)	Upazila Level (উপজেলা স্তর) Uz. Chairman, Uz. Vice Chairman (Male/ Female), UNO, DRRO, PIO and other Upazila DMC members including relevant Department Heads, selected Union Chairman & Female member's, Paurashava (Municipality) Mayor and Counselor (উপজেলা চেয়ারম্যান, উপজেলা ভাইস চেয়ারম্যান (পুরুষ/মহিলা), ইউএনও, জেলা গ্রাম ও পুনর্বাসন কর্মকর্তা, পিআইও এবং সংশ্লিষ্ট বিভাগীয় প্রধানসহ অন্যান্য উপজেলা ডিএমসি সদস্য, নির্বাচিত ইউনিয়ন চেয়ারম্যান ও মহিলা সদস্য, পৌরসভা মেয়র ও কাউন্সিলর)
Trainer (প্রশিক্ষক):	Nominated Trainers of DDM by the Director General (DG) (মহাপরিচালক মহোদয় কর্তৃক মনোনীত দুর্যোগ ব্যবস্থাপনা অধিদপ্তর এর প্রশিক্ষক গণ)
Necessary Budget (প্রয়োজনীয় বাজেট)	Upazila Level (উপজেলা স্তর): 93,400 Tk per batch

Attachment 2: Training Program for the ToT for the Basic Training on Disaster Risk Reduction (DRR)

Name (নাম)	ToT for the Basic Training on Disaster Risk Reduction (দুর্যোগ ঝুঁকি হ্রাস বিষয়ক মৌলিক প্রশিক্ষণের জন্য প্রশিক্ষকদের প্রশিক্ষণ)
Purpose (উদ্দেশ্য)	- To Develop capacity of the DDM officers or selected DRRO, PIO to be capable of facilitating the Basic Training for DRR in the Upazila level. (উপজেলা পর্যায়ে দুর্যোগ ঝুঁকি হ্রাস বিষয়ক মৌলিক প্রশিক্ষণ পরিচালনার সক্ষমতা অর্জনের জন্য DDM কর্মকর্তা বা নির্বাচিত DRRO, PIO-দের দক্ষতা উন্নয়ন।) - To refresh the DDM officers which have already taken the ToT for the Basic Training for DRR (যেসব DDM কর্মকর্তা ইতিমধ্যে দুর্যোগ ঝুঁকি হ্রাস বিষয়ক মৌলিক প্রশিক্ষণের জন্য ToT গ্রহণ করেছেন, তাদের জ্ঞান ও দক্ষতা পুনঃসমন্বয় করা।)
Duration (মেয়াদ):	ToT in Central Level (কেন্দ্রীয় স্তর): 3 days (৩ দিন)
Number of Participants (অংশগ্রহণকারীদের সংখ্যা):	30 participants per batch (প্রতি ব্যাচে ৩০ জন অংশগ্রহণকারী)
Batch per Year (প্রতি বছর ব্যাচ):	Refreshment ToT in Central Level (কেন্দ্রীয় স্তরে রিফ্রেশমেন্ট টিওটি): 1 batch (১ ব্যাচ)
Level of Participants (অংশগ্রহণকারীদের স্তর)	ToT in Central Level (কেন্দ্রীয় স্তর): DDM officers (Director, Deputy Director, Assistant Director, Assistant Engineer DRRO, PIO etc.) ডিউটিম অফিসার গণ (পরিচালক, উপ-পরিচালক, সহকারী পরিচালক, সহকারী প্রকৌশলী, জেলা গ্রাম ও পুনর্বাসন অফিসার, প্রকল্প বাস্তবায়ন অফিসার ইত্যাদি)।
Trainer (প্রশিক্ষক):	Nominated Trainers of DDM by the Director General (DG) (মহাপরিচালক মহোদয় কর্তৃক মনোনীত দুর্যোগ ব্যবস্থাপনা অধিদপ্তর এর প্রশিক্ষক গণ)
Necessary Budget (প্রয়োজনীয় বাজেট)	ToT in Central Level (কেন্দ্রীয় স্তর): 232,600 Tk

Attachment 3: Training Program for the UzDRRAP Formulation Training

Name (নাম)	Upazila DRR Action Plan (UzDRRAP) Formulation Training (উপজেলা দুর্ভোগ ঝুঁকি হাস কর্ম পরিকল্পনা প্রণয়ন বিষয়ক প্রশিক্ষণ)
Purpose (উদ্দেশ্য)	- To understand the purpose and benefit of the UzDRRAP (উপজেলা দুর্ভোগ ঝুঁকি হাস কর্ম পরিকল্পনা এর উদ্দেশ্য এবং সুবিধা বুঝার জন্য।) - To understand the concept and description of the UzDRRAP (উপজেলা দুর্ভোগ ঝুঁকি হাস কর্ম পরিকল্পনা এর ধারণা এবং বর্ণনা বুঝার জন্য।) - To understand the planning process of the UzDRRAP formulation (উপজেলা দুর্ভোগ ঝুঁকি হাস কর্ম পরিকল্পনা প্রণয়নের পরিকল্পনা প্রক্রিয়া বুঝার জন্য।) - To be familiar with the activities for UzDRRAP formulation (e.g. Discussion to be facilitated, Methodology of workshop using maps or Forms and templated to be used) (উপজেলা দুর্ভোগ ঝুঁকি হাস কর্ম পরিকল্পনা প্রণয়নের জন্য কার্যকলাপগুলির সাথে পরিচিত হওয়া যেমন, আলোচনা সহজতর করা, মানচিত্র বা কর্ম ব্যবহার করে কর্মশালার পদ্ধতি এবং ব্যবহারের জন্য টেমপ্লেট তৈরি করা।) - To formulate a draft schedule of UzDRRAP formulation activity (উপজেলা দুর্ভোগ ঝুঁকি হাস কর্ম পরিকল্পনা প্রণয়ন কার্যকলাপ এর একটি রুট সফটস্কেট প্রণয়ন করা।)
Duration (সময়াদ)	1-2 days (১-২ দিন)
Number of Participants (অংশগ্রহণকারীদের সংখ্যা):	30 participants per batch (প্রতি ব্যাচ ৩০ জন অংশগ্রহণকারী)
Batch per Year (প্রতি বছর ব্যাচ):	Upazila Level (উপজেলা স্তর): 10 batch (১০ টি ব্যাচ):
Level of Participants (অংশগ্রহণকারীদের স্তর)	Upazila Level (উপজেলা স্তর) Uz. Chairman, Uz. Vice Chairman (Male/ Female), UNO, DRRO, PIO and other Upazila DMC members including relevant Department Heads, selected Union Chairman & Female member's, Paurashava (Municipality) Mayor and Counselor (উপজেলা চেয়ারম্যান, উপজেলা ভাইস চেয়ারম্যান (পুরুষ/মহিলা), ইউএনও, জেলা এএন ও পুনর্বাসন কর্মকর্তা, পিআইও এবং সংশ্লিষ্ট বিভাগীয় প্রধানসহ অন্যান্য উপজেলা ডিএমসি সদস্য, নির্বাচিত ইউনিয়ন চেয়ারম্যান ও মহিলা সদস্য, পৌরসভা মেয়র ও কাউন্সিলর)
Trainer (প্রশিক্ষক):	Nominated Trainers of DDM by the Director General (DG) (মহাপরিচালক মনোনীত দুর্ভোগ ব্যবস্থাপনা অধিদপ্তর এর প্রশিক্ষক গণ)
Necessary Budget (প্রয়োজনীয় বাজেট)	Upazila Level (উপজেলা স্তর): 116,400 Tk per batch

Attachment 4: Training Program for the ToT for the UzDRRAP Formulation Training

Name (নাম)	UzDRRAP Formulation Training (উপজেলা দুর্ভোগ ঝুঁকি হাস কর্ম পরিকল্পনা প্রণয়ন বিষয়ক প্রশিক্ষণ)
Purpose (উদ্দেশ্য)	- To Develop capacity of the DDM officers or selected DRRO, PIO to be capable of facilitating the UzDRRAP Formulation Training in the Upazila level. (উপজেলা পর্যায়ে UzDRRAP প্রণয়ন সংক্রান্ত প্রশিক্ষণ পরিচালনার সক্ষমতা অর্জনের জন্য DDM কর্মকর্তা বা নির্বাচিত DRRO, PIO-দের দক্ষতা উন্নয়ন।) - To refresh the DDM officers which have already taken the ToT for the Basic Training for DR (হেডের DDM কর্মকর্তা ইতিমধ্যে দুর্ভোগ ঝুঁকি হাস বিষয়ক মৌলিক প্রশিক্ষণের জন্য ToT গ্রহণ করেছেন, তাদের জ্ঞান ও দক্ষতা পুনঃস্মরণ করানো।)
Duration (সময়াদ)	2-3 days (২-৩ দিন)
Number of Participants (অংশগ্রহণকারীদের সংখ্যা):	30 participants per batch (প্রতি ব্যাচ ৩০ জন অংশগ্রহণকারী)
Batch per Year (প্রতি বছর ব্যাচ):	ToT in Central Level (কেন্দ্রীয় পর্যায়ে প্রশিক্ষকদের প্রশিক্ষণ (ToT)): 1 batch (১ ব্যাচ):
Level of Participants (অংশগ্রহণকারীদের স্তর)	DDM Director, Deputy Director, Asst Director, Asst. Engineer, Selected DRRO, PIO, Local Consultants DDM (পরিচালক, উপ-পরিচালক, সহকারী পরিচালক, সহকারী প্রকৌশলী, নির্বাচিত DRRO, PIO, স্থানীয় পরামর্শকগণ)
Trainer (প্রশিক্ষক):	Nominated Trainers of DDM by the DG (মহাপরিচালক মনোনীত দুর্ভোগ ব্যবস্থাপনা অধিদপ্তর এর প্রশিক্ষক গণ)
Necessary Budget (প্রয়োজনীয় বাজেট)	ToT in Central Level (কেন্দ্রীয় স্তর): 255,600 Tk

Attachment 5 Format for Budget Estimation for the Basic Training on DRR

Tentative Budget of Basic Training on DRR (Upazila level)

Upazila: To be decided

Date/Duration: To be decided

of Batch = 10 (Suppose)

of participants = 50 (Average)

Venue: Upazila Auditorium

(Trainer-3, PD-1, PM-1, Support Staff -5)

Per Batch

Items	Unit	Unit Cost	Total Amount	Remarks
Venue Rent	1	0	0	The Venue will be at Uz. Auditorium
Snacks	60	80	4,800	As per Gov. Circular of MOF (May 22', 2019)
Lunch	60	300	18,000	As per Gov. Circular of MOF (May 22', 2019)
Facilitators (Resource Person) Honorarium	2	2,500	5,000	Joint Secretary & above (for per Hour Session)
Facilitators (Resource Person) Honorarium	4	2,000	8,000	Deputy Secretary & below (for per Hour Session)
Course Coordinators Honorarium	1	1,200	1,200	Honorarium for one day
Course Director Honorarium	1	1,500	1,500	Honorarium for one day
Participants Conveyance/Training allowance (Uz. Chairman, Mayor & UNO)	3	1,500	4,500	Per person BDT 1500 as they are VIP/ Elite person.
Participants Conveyance/Training allowance	47	400	18,800	
Support Staffs Honorarium	5	400	2,000	As per Gov. Circular of MOF (May 22', 2019)
Banner for Training	1	1,200	1,200	
Training materials for participants (File folder, Notebook & Pen)	60	120	7,200	
Hand out (Color)- Max. 10 pages (both pages), 10 X @ Tk.20 = Tk.200	60	200	12,000	
Hand out (Black & White)- Max. 40-page, 40 X @ Tk.3 = Tk.120	60	120	7,200	
Other Miscellaneous cost like Training materials (Poster paper- A-1 size, Brown paper, Color pen etc.) & others)	1	2,000	2,000	
Total			93,400	

Attachment 6 Format for Budget Estimation for the ToT for Basic Training on DRR

Tentative Budget of Basic Training on DRR (ToT in Central Level)

Upazila: To be decided

Date/Duration: To be decided

of Batch = 01

Duration = 03 Days

Per Batch

of participants = 25

Venue: DDM Auditorium

(Trainer-3, DG-1, PD-1, PM-1, other staff of DDM-2 & Support Staff -2)

Items	Unit	Unit Cost	Total Amount	Remarks
Venue Rent	1	0	0	The Venue will be at DDM Auditorium
Snacks	105	80	8,400	As per Govt. Circular (MoF dated May 22, 2019) 35 person * 3 days
Lunch	105	500	52,500	As per Govt. Circular (MoF dated May 22, 2019) 35 person * 3 days
Facilitators (Resource Person) Honorarium	8	2,500	20,000	Joint Secretary & above (for per Hour Session) 4 sessions of 1.5 hours
Facilitators (Resource Person) Honorarium	10	2,000	20,000	Deputy Secretary & below (for per Hour Session) 5 sessions of 1.5 hours
Course Director Honorarium (PD)	3	1,500	4,500	As per Govt. Circular (MoF dated May 22, 2019) 3 days
Course Coordinators Honorarium (DD-Planning)	3	1,200	3,600	As per Govt. Circular (MoF dated May 22, 2019) 3 days
Participants Food (Breakfast, Evening Tiffin & Dinner) and Lodging Cost (09 Person)	9	6,000	54,000	DRRO-03 & PIO-06 (Per day - 2000 BDT x 3 days = 6000 BDT per person)
Participants Conveyance/Training allowance	75	600	45,000	As per Govt. Circular (MoF dated May 22, 2019) 25 person * 3 days
Support Staffs (02 Person) Honorarium	12	500	6,000	4 person * 3 days including other staff of DDM
Banner for Training	1	1,200	1,200	
Training materials for participants (File folder, Notebook & Pen)	35	120	4,200	
Hand out (Color)- Max. 10 pages (both pages), 10 X @ Tk.20 = Tk.200	35	200	7,000	
Hand out (Black & White)- Max. 40-page, 40 X @ Tk.3 = Tk.120	35	120	4,200	
Other Miscellaneous cost like Training materials (Poster paper- A-1 size, Brown paper, Color pen etc.) & others)	1	2,000	2,000	
Training Bag (For Participants & others)	0	1,000	0	
Total			232,600	

Attachment 7 Format for Budget Estimation for the UzDRRAP Formulation Training

Tentative Budget of Basic Training on DRR (Upazila level)

Upazila: To be decided

Date/Duration: To be decided

of Batch = 10 (Suppose)

Venue: Upazila Auditorium

of participants = 50 (Average)
(Trainer-3, PD-1, PM-1, Support Staff -5)

Per Batch

Items	Unit	Unit Cost	Total Amount	Remarks
Venue Rent	1	0	0	The Venue will be at Uz. Auditorium
Snacks	60	80	4,800	As per Gov. Circular of MOF (May 22', 2019)
Lunch	60	300	18,000	As per Gov. Circular of MOF (May 22', 2019)
Facilitators (Resource Person) Honorarium	2	2,500	5,000	Joint Secretary & above (for per Hour Session)
Facilitators (Resource Person) Honorarium	4	2,000	8,000	Deputy Secretary & below (for per Hour Session)
Course Coordinators Honorarium	1	1,200	1,200	Honorarium for one day
Course Director Honorarium	1	1,500	1,500	Honorarium for one day
Participants Conveyance/Training allowance (Uz. Chairman, Mayor & UNO)	3	1,500	4,500	Per person BDT 1500 as they are VIP/ Elite person.
Participants Conveyance/Training allowance	47	400	18,800	
Support Staffs Honorarium	5	400	2,000	As per Gov. Circular of MOF (May 22', 2019)
Banner for Training	1	1,200	1,200	
Training materials for participants (File folder, Notebook & Pen)	60	120	7,200	
Hand out (Color)- Max. 10 pages (both pages), 10 X @ Tk.20 = Tk.200	60	200	12,000	
Hand out (Black & White)- Max. 40-page, 40 X @ Tk.3 = Tk.120	60	120	7,200	
Print out Cost for A-1 size paper	10	2,000	20,000	
Other Miscellaneous cost like Training materials (Poster paper- A-1 size, Brown paper, Transparent Paper, Color pen etc.) & others)	1	5,000	5,000	
Total			116,400	

Attachment 8 Format for Budget Estimation for the ToT for UzDRRAP Formulation Training

Tentative Budget of ToT for UzDRRAP Formulation Training

Upazila: To be decided

Date/Duration: To be decided

of Batch = 01

Duration = 03 Days

Per Batch

of participants = 25

(Trainer-3, DG-1, PD-1, PM-1, other staff of DDM-2 & Support Staff -2)

Venue: DDM Auditorium

Items	Unit	Unit Cost	Total Amount	Remarks
Venue Rent	1	0	0	The Venue will be at DDM Auditorium
Snacks	105	80	8,400	As per Govt. Circular (MoF dated May 22, 2019) 35 person * 3 days
Lunch	105	500	52,500	As per Govt. Circular (MoF dated May 22, 2019) 35 person * 3 days
Facilitators (Resource Person) Honorarium	8	2,500	20,000	Joint Secretary & above (for per Hour Session) 4 sessions of 1.5 hours
Facilitators (Resource Person) Honorarium	10	2,000	20,000	Deputy Secretary & below (for per Hour Session) 5 sessions of 1.5 hours
Course Director Honorarium (PD)	3	1,500	4,500	As per Govt. Circular (MoF dated May 22, 2019) 3 days
Course Coordinators Honorarium (DD-Planning)	3	1,200	3,600	As per Govt. Circular (MoF dated May 22, 2019) 3 days
Participants Food (Breakfast, Evening Tiffin & Dinner) and Lodging Cost (09 Person)	9	6,000	54,000	DRRO-03 & PIO-06 (Per day - 2000 BDT x 3 days = 6000 BDT per person)
Participants Conveyance/Training allowance	75	600	45,000	As per Govt. Circular (MoF dated May 22, 2019) 25 person * 3 days
Support Staff's (02 Person) Honorarium	12	500	6,000	4 person * 3 days including other staff of DDM
Banner for Training	1	1,200	1,200	
Training materials for participants (File folder, Notebook & Pen)	35	120	4,200	
Hand out (Color)- Max. 10 pages (both pages), 10 X @ Tk.20 = Tk.200	35	200	7,000	
Hand out (Black & White)- Max. 40-page, 40 X @ Tk.3 = Tk.120	35	120	4,200	
Print out Cost for A-1 size paper	10	2,000	20,000	
Other Miscellaneous cost like Training materials (Poster paper- A-1 size, Brown paper, Transparent Paper, Color pen etc.) & others)	1	5,000	5,000	
Training Bag (For Participants & others)	0	1,000	0	
Total			255,600	

Attachment 9 Sample Agenda for the Basic Training on DRR

Time (সময়)	Duration (সময়কাল)	Contents (বিষয়বস্তু)	Name of Trainer/ Facilitator (প্রশিক্ষক/সহায়কের নাম)
9:00 - 9:30 (৯:০০ - ৯:৩০)	30 min (৩০ মিনিট)	Registration (নিবন্ধন)	All participants (সকল অংশগ্রহণকারী)
9:30 - 9:45 (৯:৩০ - ৯:৪৫)	15 min (১৫ মিনিট)	Opening Remarks (উদ্বোধনী বক্তব্য)	Upazila Chairman / Upazila Nirbahi Office (উপজেলা চেয়ারম্যান / উপজেলা নির্বাহী অফিসার)
9:45 - 11:45 (৯:৪৫ - ১১:৪৫)	90 min (৯০ মিনিট)	- Importance and Concept of Disaster Risk Reduction (DRR) (দুর্যোগ ঝুঁকি হ্রাসের গুরুত্ব এবং ধারণা) - Types of Disasters in Bangladesh (বাংলাদেশের দুর্যোগ সমূহ) - Disaster Prevention Measures (দুর্যোগের বিরুদ্ধে প্রতিরোধ ব্যবস্থা)	
11:15 - 11:30 (১১:১৫ - ১১:৩০)	15 min (১৫ মিনিট)	Tea & Snacks Break (চা ও নাস্তা বিরতি)	
11:30 - 1:00 (১১:৩০ - ১:০০)	90 min (৯০ মিনিট)	- Standing Orders on Disaster (SoD) and the Roles of DRR-related Institutions (দুর্যোগ বিষয়ক স্থায়ী আদেশাবলী (SoD) এবং দুর্যোগ ঝুঁকি হ্রাস সম্পর্কিত প্রতিষ্ঠানের ভূমিকা এবং বৈশিষ্ট্য এজেন্ডা) - Global Agendas and their Reflection in Bangladesh Policies (বৈশ্বিক এজেন্ডা এবং বাংলাদেশ দাঁড়িতে এটি কিভাবে প্রতিফলিত হয়)	
1:00 - 2:00 (১:০০ - ২:০০)	60 min (৬০ মিনিট)	Lunch and Prayer Break (দুপুরের খাবার এবং নামাজ এর বিরতি)	
2:00 - 3:30 (২:০০ - ৩:৩০)	90 min (৯০ মিনিট)	- Importance of Local-Level DRR Strategies, Investment in Pre-Disaster Risk Reduction, and Good Practices (স্থানীয় পর্যায়ে দুর্যোগ ঝুঁকি হ্রাস কৌশলের গুরুত্ব, দুর্যোগ পূর্ব ঝুঁকি হ্রাসে বিনিয়োগ ও সু-অভ্যাস সমূহ) - Introduction to Upazila Disaster Risk Reduction Action Plan (UzDRRAP) (ঝুঁকি হ্রাস কর্ম পরিকল্পনা (RRAP) হিসাবে উপজেলা দুর্যোগ ঝুঁকি হ্রাস কর্ম পরিকল্পনার (UzDRRAP) পরিচিতি) - Example of UzDRRAP Formulation Process from Pilot Upazilas (পাইলট উপজেলার অভিজ্ঞতা থেকে UzDRRAP প্রণয়ন প্রক্রিয়ার উদাহরণ)	
3:30 - 3:45 (৩:৩০ - ৩:৪৫)	15 min (১৫ মিনিট)	Review and Q&A Session (পর্যালোচনা, প্রশ্ন ও উত্তর পর)	

Attachment 10 Sample Agenda for the ToT for Basic Training on DRR

Day 1

Time (সময়)	Duration (সময়কাল)	Contents (বিষয়বস্তু)	Name of Trainer/ Facilitator (প্রশিক্ষক/সহায়কের নাম)
9:00 - 9:15 (৯:০০ - ৯:১৫)	15 min (১৫ মিনিট)	Registration (নিবন্ধন)	
9:15 - 9:30 (৯:১৫ - ৯:৩০)	15 min (১৫ মিনিট)	Welcome speech & Inauguration (স্বাগত বক্তব্য ও উদ্বোধন)	
9:30 - 11:00 (৯:৩০ - ১১:০০)	90 min (৯০ মিনিট)	Concept of Disaster Management in Bangladesh (বাংলাদেশের দুর্যোগ ব্যবস্থাপনার ধারণা)	
11:00 - 11:15 (১১:০০ - ১১:১৫)	15 min (৩০ মিনিট)	Tea & Snacks (চা ও নাস্তা)	
11:15 - 12:45 (১১:১৫ - ১২:৪৫)	90 min (৯০ মিনিট)	Countermeasures against Disasters in Bangladesh (বাংলাদেশে দুর্যোগের বিরুদ্ধে প্রতি ব্যবস্থা / পাল্টা ব্যবস্থা)	
12:45 - 01:15 (১২:৪৫ - ১:১৫)	30 min (৩০ মিনিট)	Question & Answer (প্রশ্ন ও উত্তর)	
01:15 - 2:15 (১:৩০ - ২:১৫)	60 min (৬০ মিনিট)	Lunch and Prayer Break (দুপুরের খাবার এবং নামাজ এর বিরতি)	
2:15 - 3:15 (২:১৫ - ৩:১৫)	60 min (৬০ মিনিট)	Importance and Concept of Local Disaster Risk Reduction (স্থানীয় দুর্যোগ ঝুঁকি হ্রাসের গুরুত্ব ও ধারণা)	
3:15 - 4:00 (৩:১৫ - ৪:০০)	45 min (৪৫ মিনিট)	Group Discussion / The main challenges and opportunities in reducing natural disasters such as floods, cyclones, tsunamis, landslides, earthquakes and lightning strikes. (গ্রুপ ডিসকাশন: ভূমিকম্প, ভূমিকম্প ও বজ্রপাত যেমন বন্যা, ঘূর্ণিঝড়, জলোচ্ছ্বাস, ভূমিকম্প, ভূমিকম্প এবং সজ্জাবন্যা)	
4:00 - 4:30 (৪:০০ - ৪:৩০)	30 min (৩০ মিনিট)	Wrap-up (পর্যালোচনা)	

Day 2

Time (সময়)	Duration (সময়কাল)	Contents (বিষয়বস্তু)	Name of Trainer/ Facilitator (প্রশিক্ষক/সহায়কের নাম)
9:00 - 9:15 (৯:০০ - ৯:১৫)	15 min (১৫ মিনিট)	Registration (নিবন্ধন)	
9:15 - 10:45 (৯:১৫ - ১০: ৪৫)	90 min (৯০ মিনিট)	SOD and Responsibility of DRR Relevant Institutions (দুর্যোগ বিষয়ক স্থায়ী আদেশাবলী (SOD) এবং দুর্যোগ ঝুঁকি হ্রাস সম্পর্কিত প্রতিষ্ঠানের ভূমিকা এবং বৈশিষ্ট্য আলোচনাসূচি)	
10:45 - 11:15 (১০: ৪৫ - ১১:১৫)	30 min (৩০ মিনিট)	Tea & Snacks (চা ও নাস্তা)	
11:15 - 12:45 (১১:১৫ - ১২:৪৫)	90 min (৯০ মিনিট)	Global Agenda and How it is Reflected to Plans and Policy of Bangladesh on Disaster Management (বৈশ্বিক এজেন্ডা এবং এটি দুর্যোগ ব্যবস্থাপনায় বাংলাদেশের পরিচালনা ও নীতিতে কীভাবে প্রতিফলিত হয়)	
12:45 - 01:15 (১২:৪৫ - ১:১৫)	60min (৬০ মিনিট)	Question & Answer (প্রশ্ন ও উত্তর)	
01:15 - 2:15 (১:৩০ - ২:১৫)	60 min (৬০ মিনিট)	Lunch and Prayer Break (দুপুরের খাবার এবং নামাজ এর বিরতি)	

2:15 -3:45 (২:১৫- ৩:৪৫)	90 min (৯০ মিনিট)	Additional Contents to refer to the situation on that year can be added Additional Contents to refer to the situation on that year can be added
3:45- 4:15 (৩:৪৫-৪:১৫)	30 min (৩০ মিনিট)	Wrap-up (পর্যালোচনা)

Day 3

Time (সময়)	Duration (সময়কাল)	Contents (বিষয়বস্তু)	Name of Trainer/ Facilitator (প্রশিক্ষক/সহায়কেরনাম)
9:00 - 9:15 (৯:০০-৯:১৫)	15 min (১৫ মিনিট)	Registration (নিবন্ধন)	
9:15 - 10:45 (৯:১৫-১০:৪৫)	90 min (৯০ মিনিট)	- Good Practices of Pre-disaster DRR investment (দুর্যোগ পূর্ব বৃত্তি হিসেবে বিনিয়োগ সংক্রান্ত সু-চর্চা/অভ্যাসসমূহ) - Introduction of the UzDRRAPs as a Risk Reduction Action Plan (RRAP) (বৃত্তি হিসেবে কর্ম পরিকল্পনা (RRAP) হিসাবে উপজেলা দুর্যোগ বৃত্তি হিসেবে কর্ম পরিকল্পনা (UzDRRAP) এর পরিচিতি)	
10:45 - 11:15 (১০:৪৫-১১:১৫)	30 min (৩০ মিনিট)	Tea & Snacks (চা ও নাজা)	
11:15 - 12:45 (১১:১৫-১২:৪৫)	90 min (৯০ মিনিট)	Example of UzDRRAP formulation process from the experience in pilot upazila (পাইলট উপজেলার অভিজ্ঞতা কাজে লাগিয়ে উপজেলা দুর্যোগ বৃত্তি হিসেবে কর্ম পরিকল্পনা (UzDRRAP) প্রণয়ন প্রক্রিয়ার উদাহরণ)	
12:45 - 01:15 (১২:৪৫- ১:১৫)	45 min (৪৫ মিনিট)	Question & Answer (প্রশ্ন ও উত্তর)	
01:15- 2:15 (১:৩০- ২:১৫)	60 min (৬০ মিনিট)	Lunch and Prayer Break (দুপুরের খাবার এবং নামাজ এর বিরতি)	
2:15 -3:45 (২:১৫- ৩:৪৫)	90 min (৯০ মিনিট)	Additional Contents to refer the situation on that year can be added	
3:45- 4:15 (৩:৪৫-৪:১৫)	30 min (৩০ মিনিট)	Wrap up & Closing	

Attachment 11 Sample Agenda for the UzDRRAP Formulation Training

Time (সময়)	Duration (সময়কাল)	Contents (বিষয়বস্তু)	Name of Trainer/ Facilitator (প্রশিক্ষক/সহায়কেরনাম)
9:00 - 9:15 (৯:০০-৯:১৫)	15 min (১৫ মিনিট)	Registration (নিবন্ধন)	
09:15 - 09:30 (৯:১৫- ৯:৩০)	15 min (১৫ মিনিট)	Welcome speech & Inauguration (স্বাগত বক্তব্য ও উদ্বোধন)	
09:30 - 09:45 (৯:৩০- ৯:৪৫)	15 min (১৫ মিনিট)	- Purpose of the UzDRRAP Training and Supporting System (উপজেলা দুর্যোগ বৃত্তি হিসেবে কর্ম পরিকল্পনা প্রণয়ন বিষয়ক প্রশিক্ষণ এর উদ্দেশ্য এবং সহায়ক পদ্ধতি) - Outline of Upazila Disaster Risk Reduction Action Plan (উপজেলা দুর্যোগ বৃত্তি হিসেবে কর্ম পরিকল্পনার রূপরেখা)	
09:45 - 10:30 (৯:৪৫- ১০:৩০)	45 min (৪৫ মিনিট)	- Description of the plan (পরিকল্পনার বর্ণনা) - General Information (সাধারণ তথ্য) - Hazard Characters (আপদ এর বৈশিষ্ট্য) - Disaster Risk (দুর্যোগ বৃত্তি)	
10:30 - 10:45 (১০:৩০- ১০:৪৫)	15 min (১৫ মিনিট)	Tea & Snacks (চা ও নাজা)	
10:45 - 11:30 (১০:৪৫- ১১:৩০)	45 min (৪৫ মিনিট)	Mapping Exercise 1: (মাপ অনুশীলন -১) Identify the high-risk areas in your Upazila (আপনার উপজেলার উচ্চ বৃত্তি পূর্ণ এলাকা নির্ধারণ)	
11:30 - 11:45 (১১:৩০- ১১:৪৫)	15 min (১৫ মিনিট)	- Description of the plan (পরিকল্পনার বর্ণনা) - Disaster Risk Reduction Target (দুর্যোগ বৃত্তি হ্রাস লক্ষ্য)	
11:45 - 12:30 (১১:৪৫- ১২:৩০)	45 min (৪৫ মিনিট)	Mapping Exercise 2: (মাপ অনুশীলন -২) Discussion on Disaster Risk Reduction Targets (দুর্যোগ বৃত্তি হ্রাস লক্ষ্য এর আলোচনা)	
12:30 - 13:00 (১২:৩০- ১:০০)	30 min (৩০ মিনিট)	- Description of the plan (পরিকল্পনার বর্ণনা) - Action Plan for DRR Measures (দুর্যোগ বৃত্তি হ্রাস ব্যবস্থার কর্ম পরিকল্পনা) - Monitoring and Updating of the Plan (পরিকল্পনা মনিটরিং ও হাল নাগাদ করণ)	
13:00 - 14:00 (১:০০- ২:০০)	60 min (৬০ মিনিট)	Lunch and Prayer Break (দুপুরের খাবার এবং নামাজ এর বিরতি)	
14:00 - 14:45 (২:০০- ২:৪৫)	45 min (৪৫ মিনিট)	Documentation Exercise: (ডকুমেন্টেশন অনুশীলন) Action Plans for DRR Targets (দুর্যোগ বৃত্তি হ্রাস লক্ষ্য এর কর্ম পরিকল্পনা)	
14:45 - 15:45 (২:৪৫- ৩:৪৫)	60 min (৬০ মিনিট)	- Planning and Implementation Workflow (পরিকল্পনা ও বাস্তবায়ন কাজের প্রবাহ) - Supporting Tools for Planning Activity (পরিকল্পনা কার্যক্রমের জন্য সহায়ক উপকরণ)	
15:45 - 16:00 (৩:৪৫- ৪:০০)	15 min (১৫ মিনিট)	Wrap-up (পর্যালোচনা)	

Attachment 12 Sample Agenda for the ToT for UzDRRAP Formulation Training

Day 1

Time (সময়)	Duration (সময়কাল)	Contents (বিষয়বস্তু)	Name of Trainer/Facilitator (প্রশিক্ষক/সহায়কের নাম)
9:00 - 9:15	15 min (১৫ মিনিট)	Registration (নিবন্ধন)	
09:15 - 09:30	15 min (১৫ মিনিট)	Welcome speech & Inauguration (স্বাগত বক্তব্য ও উদ্বোধন)	
09:30 - 10:15	45 min (১৫ মিনিট)	1. Purpose of the UzDRRAP Training and Supporting System ১. উপজেলা দুর্ভোগ ঝুঁকি হ্রাস কর্ম পরিকল্পনা প্রণয়ন বিষয়ক প্রশিক্ষণ এর উদ্দেশ্য এবং সহায়ক পদ্ধতি 2. Outline of Upazila Disaster Risk Reduction Action Plan ২. উপজেলা দুর্ভোগ ঝুঁকি হ্রাস কর্ম পরিকল্পনার রূপরেখা - Tea & Snacks (চা ও নাস্তা) 3. Description of the plan ৩. পরিকল্পনার বর্ণনা 1) General Information ১) সাধারণ তথ্য 2) Hazard Characters ২) অপদ এর বৈশিষ্ট্য 3) Disaster Risk ৩) দুর্ভোগ ঝুঁকি	
10:15 - 10:30	15 min (১৫ মিনিট)		
10:30 - 12:00	90 min (৪৫ মিনিট)		
12:00 - 13:30	90 min (৪৫ মিনিট)	Lunch and Prayer Break (দুপুরের খাবার এবং নামাজ এর বিরতি)	
13:30 - 14:30	60 min (৬০ মিনিট)	Mapping Exercise 1: ম্যাপ অনুশীলন -১ Identify the high-risk areas in your Upazila আপনার উপজেলার উচ্চ ঝুঁকি পূর্ণ এলাকা নির্ধারণ	
14:30 - 16:00	90 min (৪৫ মিনিট)	- Review of the contents বিষয়বস্তুর পর্যালোচনা - Q&A প্রশ্নোত্তর (Q&A) সেশন	

A3-3-17

12:45 - 14:00	75 min (৪৫ মিনিট)	Lunch and Prayer Break (দুপুরের খাবার এবং নামাজ এর বিরতি)	
14:00 - 15:30	90 min (৪৫ মিনিট)	- Review of the contents বিষয়বস্তুর পর্যালোচনা - Q&A প্রশ্নোত্তর (Q&A) সেশন	

Day 3

Time (সময়)	Duration (সময়কাল)	Contents (বিষয়বস্তু)	Name of Trainer/Facilitator (প্রশিক্ষক/সহায়কের নাম)
9:00 - 9:15	15 min (১৫ মিনিট)	Registration (নিবন্ধন)	
09:15 - 10:15	60 min (৬০ মিনিট)	Documentation Exercise: ডকুমেন্টেশন অনুশীলন Action Plans for DRR Targets দুর্ভোগ ঝুঁকি হ্রাস লক্ষ্য এর কর্ম পরিকল্পনা	
10:15 - 11:15	60 min (৬০ মিনিট)	4. Planning and Implementation Workflow ৪. পরিকল্পনা ও বাস্তবায়ন কাজের প্রবাহ 5. Supporting Tools for Planning Activity ৫. পরিকল্পনা কার্যক্রমের জন্য সহায়ক উপকরণ	
11:15 - 11:30	15 min (১৫ মিনিট)	Tea & Snacks (চা ও নাস্তা)	
11:30 - 13:00	90 min (৪৫ মিনিট)	- Review of the contents বিষয়বস্তুর পর্যালোচনা - Q&A প্রশ্নোত্তর (Q&A) সেশন	
13:00 - 13:15	15 min (১৫ মিনিট)	Wrap-up (পর্যালোচনা)	

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Day 2

Time (সময়)	Duration (সময়কাল)	Contents (বিষয়বস্তু)	Name of Trainer/Facilitator (প্রশিক্ষক/সহায়কের নাম)
9:00 - 9:15	15 min (১৫ মিনিট)	Registration (নিবন্ধন)	
09:15 - 10:00	45 min (৪৫ মিনিট)	3. Description of the plan ৩. পরিকল্পনার বর্ণনা 4) Disaster Risk Reduction Target ৪) দুর্ভোগ ঝুঁকি হ্রাস লক্ষ্য	
11:00 - 11:30	90 min (৪৫ মিনিট)	Mapping Exercise 2: ম্যাপ অনুশীলন -২ Discussion on Disaster Risk Reduction Targets দুর্ভোগ ঝুঁকি হ্রাস লক্ষ্য এর আলোচনা	
11:30 - 11:45	15 min (১৫ মিনিট)	Tea & Snacks (চা ও নাস্তা)	
11:45 - 12:45	60 min (৬০ মিনিট)	3. Description of the plan ৩. পরিকল্পনার বর্ণনা 5) Action Plan for DRR Measures ৫) দুর্ভোগ ঝুঁকি হ্রাস ব্যবস্থার কর্ম পরিকল্পনা 6) Monitoring and Updating of the Plan ৬) পরিকল্পনা মনিটরিং ও হালনাগাদ করা	

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Session 3			
Issues/Challenges			
Key questions: ✓ What happens during disasters in the community? ✓ What difficulties did you face? What should be solved before disasters? ✓ What facilities/infrastructures or which areas should be protected the most?	Issues/Challenges to overcome (See Hazard maps & Disaster Record and consider or remember in detail!)	Types of Hazards (Flood/ Erosion/ Drought/Lightning/ Earthquake etc.,)	No. on the Map

Session 4					
	DRR Countermeasures				
	Key questions: ✓ How do you think each issue can be solved? ✓ What is required to prevent/mitigate/avoid the situation? ✓ How should the important facilities or areas be protected?	Proposal of DRR Countermeasures (Structural: Embankment, drainage facilities, shelters, bridges, roads etc., Non-structural: Resettlement, warning system, training/drill etc.,)	No. on the Map		

Attachment 15 Worksheet for Mapping Exercise -2 (2/2)

Hazard	Area	DRR Target (Short and mid) term)	DRR Target (Long term)
Flooding	Central City Area	• Reduce the inundation caused by urban flooding by drainage facilities in some priority areas • Ensure safe evacuation by establishing new evacuation center	• Reduce the inundation caused by flooding from Haor area by Heightening of main roads to prevent flood water
	Haor Area		
	Along River		

Target hazard	Challenges by Hazard		
	Objective	Programs	Target area
1. Flooding	1-1 Reduce the inundation caused by urban flooding	A: Drainage facilities in some priority areas	Central City Area
	1-2 Ensure safe evacuation	A: Establish new evacuation center	Central City Area
	1-3 Reduce the inundation caused by flooding from Haor area	A: Heightening if main roads to prevent flood water	Central City Area

Attachment 17 Worksheet for Documentation Exercise (2/2)

Objective	1-1 Reduce the inundation caused by urban flooding				
ID	2-1-A				
Program	Drainage facilities in some priority areas				
Target area	Central City Area				
Action and Implementation plan	Action	Implementation plan			
		Responsible agency	Ongoing activity/ Current status	Actions to be taken	Timeframe for achieving the Action
		BWDB	Ongoing Activity by BWDB	Securing budget	Continuous work
		Local Government Agency	No regular activities	Securing budget	Continuous work

2) Training Material for Basic Training on DRR

Training Material for Basic Training on DRR

June 2025

**The Project for Capacity Enhancement on Formulation and
Implementation of Local Disaster Risk Reduction Plan (LDRRP)**

Basic Training on DRR at Local Level (FY 2023-2024)

Training Section, Research and Training Wing, DDM

Section 1 **Basic Knowledge on Disaster and Disaster Risk Reduction (DRR)**

Disaster in Bangladesh

Key Message:
Understand the various disaster in Bangladesh and the **importance to recognize its impact and locate vulnerable areas through multiple data sources.**

Disaster in Bangladesh

Bangladesh is one of the most “Disaster Prone” country in the world.

Flood



Disaster: A serious disruption of the functioning of a community or a society at any scale due to hazardous events interacting with conditions of exposure, vulnerability and capacity, leading to one or more of the following: human, material, economic and environmental losses and impacts. (SOD 2019)

Disaster in Bangladesh

4

Disaster in Bangladesh

Cyclone (Storm Surge)



Cyclone (Strong Wind)



Landslide



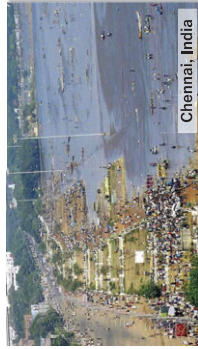
Riverbank Erosion



Earthquake



Tsunami



Disaster in Bangladesh

5

Disaster in Bangladesh

Coastal Erosion



Water Logging



Lightning



Salination



Tornado



Hailstorm



Disaster in Bangladesh

6

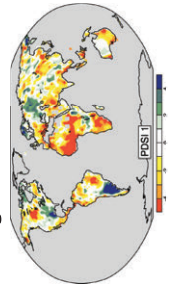
Disaster in Bangladesh

Sedimentation of River



Nital River

Drought



Drought severity increasing trend (red, orange color)

Source: IPCC 2007

Fire

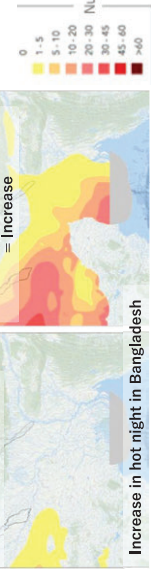


Source: Reuters

Heat wave / Cold wave

Current Climate = None

IPCC RCP8.5 2050 Scenario = Increase



Increase in hot night in Bangladesh

Source: Ministry of Environment, Forest and Climate Change, 2018

Disaster in Bangladesh

Impact of Climate Change

Climate change is caused by accumulation of greenhouse gases in the atmosphere. It is important to understand its cascading effects.

- Climate change will also intensify weather events and impact agriculture and direct physical harm to population.
- Cascading impact to environment and human society is broad as shown in the right figure

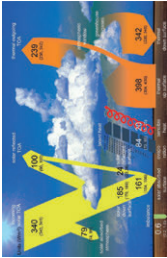


Image of greenhouse effect

Source: (LEFT) U.S. Global Change Research Program (USGCRP). (RIGHT) In Wikipedia: The Free Encyclopedia Retrieved from https://en.wikipedia.org/wiki/Effects_of_climate_change

Disaster in Bangladesh

Disaster in Bangladesh

Discuss recent disasters in your area.

Lecturers and participants can provide images or stories about recent disasters.

বাংলাদেশের দুর্যোগ সমূহ

Understanding disaster risk

To effectively act against disaster the most important point is to understand the impact of each hazard and to locate the most vulnerable areas.

Major elements / data to understand disaster risk

- Historical Record (disaster damage and loss database)
- Hazard Map (community-based interview, previous disaster, scientific analysis)
- Disaster Risk Data (estimation of risk considering various elements)

It is important to understand the disaster risk based on various data sources to understand the actual situation and consider the most appropriate counter measures

Disaster in Bangladesh

Example of data to understand disaster risk

Some major data sets which are available in Bangladesh is as below. Many initiative is existing and it is important to utilize these information for decision making.

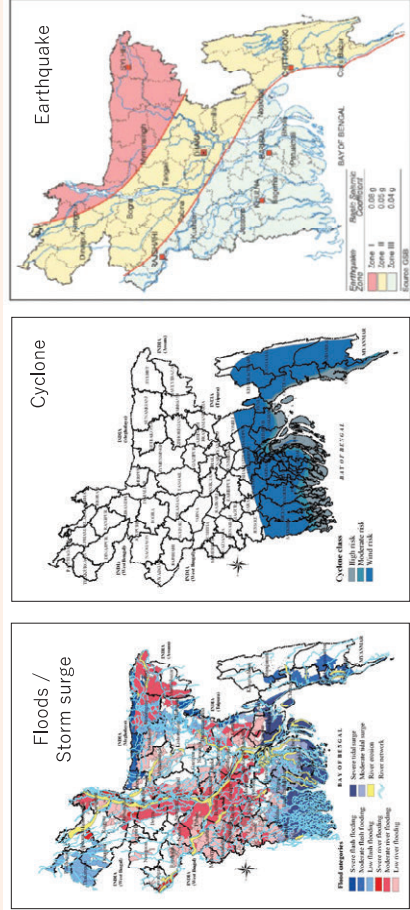
- **Historical Record**
 - Report on Bangladesh Disaster-related Statistics 2021 (BBS: Bangladesh Bureau of Statistics)
 - Damage Report (2015-2020) from Emergency Operation Center (ERC) Bangladesh
- **Hazard Map**
 - Hazard in Bangladesh
 - Risk Atlas Multi-Hazards Risk and Vulnerability Assessment, Modelling and Mapping Volume I
- **Disaster Risk**
 - Result of CRA (Community Risk Assessment)
 - DRIP (Disaster and Climate Risk Information Platform) prepared in the NRP (National Resilience Programme) project
 - Methodology prepared in JICA, Project for Capacity Enhancement on Formulation and Implementation of Local Disaster Risk Reduction Plan

Disaster in Bangladesh

11

Hazard in Bangladesh

Bangladesh is prone to various hazards and its distribution has been summarized in various maps



Disaster in Bangladesh

12

Importance and Concept of Disaster Risk Reduction

Key Message:
Understand the concept of Disaster Risk Reduction and the paradigm shift from "Relief-based Response" to "Proactive Disaster Risk Reduction".

Comprehensive Approach for DRR?

Key Concept

To consider about a comprehensive approach to DRR, there are two major concepts to 1) understand the underlying elements of disaster and, 2) consider what kind of countermeasures can be implemented to reduce disaster.

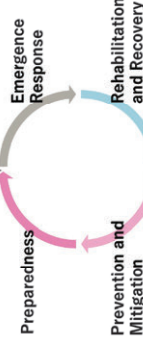
Elements of Disaster



Recognize the CHALLENGES

Consider the SOLUTION

Disaster Management Cycle



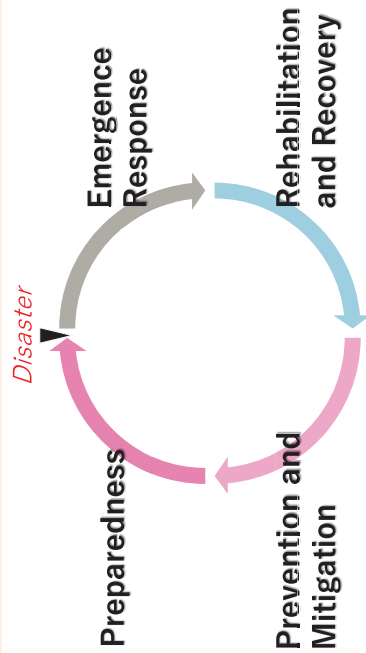
Importance and Concept of Disaster Risk Reduction

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Importance of “Disaster Risk Reduction”

Key Concept

Paradigm shift from relief-based disaster response to proactive disaster risk reduction is one of the important elements to be considered in disaster management cycle.



Importance and Concept of Disaster Risk Reduction

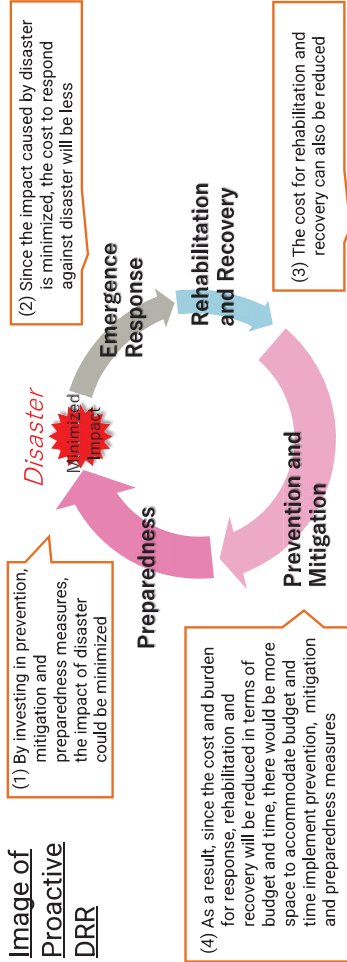
15

Importance of “Disaster Risk Reduction”

Key Concept

Disaster causes major impact and the cost to response and recover is high. If more investment could be done in the Prevention, Mitigation and Preparedness stage the overall cost for DRR and the damage and loss caused by disaster can be minimized.

Image of Proactive DRR



Importance and Concept of Disaster Risk Reduction

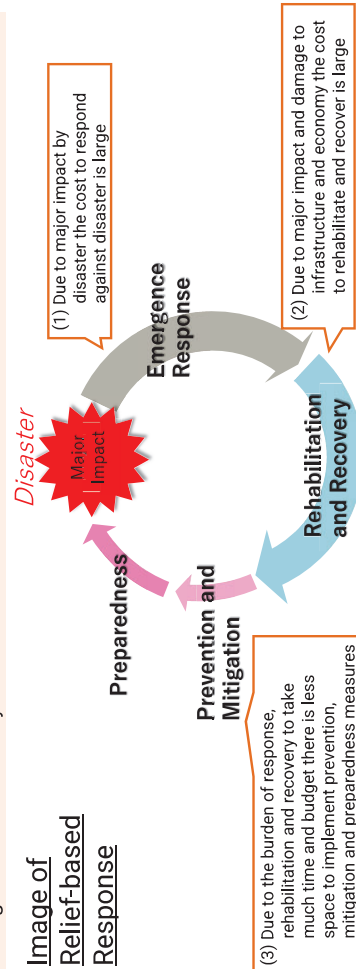
17

Importance of “Disaster Risk Reduction”

Key Concept

Disaster causes major impact and the cost to response and recover is high. If more investment could be done in the Prevention, Mitigation and Preparedness stage the overall cost for DRR and the damage and loss caused by disaster can be minimized.

Image of Relief-based Response



Importance and Concept of Disaster Risk Reduction

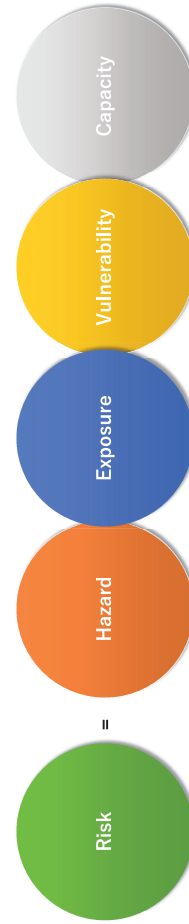
16

What is the Elements of Disaster Risk?

Key Concept

It is important to understand the four elements of “Disaster Risk” to understand and consider how to reduce the risk and the consequent damage or loss caused by disaster.

Four Elements of Disaster Risk



Disaster Risk is the confluence of the probability of a hazardous event and its consequences which result from interaction(s) between natural or man-made hazard(s), exposure, and vulnerability/capacity. (SOD 2019)

Importance and Concept of Disaster Risk Reduction

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What is Hazard?

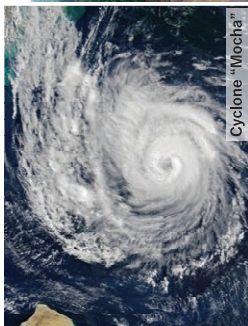
"Hazard" is a phenomenon which might cause loss of life or damage to assets.

Flood



Typical Flood caused in Bangladesh (Cyclone "Amphan")

Cyclone



Cyclone "Mocha"

Source: Turbine Desk

Landslide



Landslide triggered by rainfall in Kaprai upazila

Source: Dhaka Tribune

Hazard: A dangerous phenomenon, substance, human activity or condition that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage. (SOD 2019)

Importance and Concept of Disaster Risk Reduction

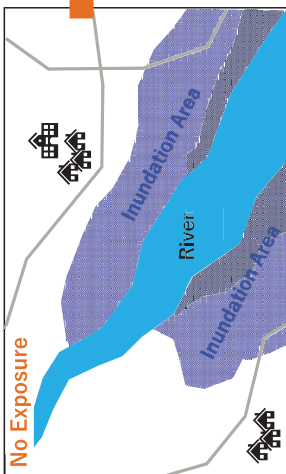
19

What is Exposure? (Flood)

In case of flood before urbanization along the river, even the flooding happens there will be no impact. However, if the urbanization happens and assets accumulate along the river it will cause damage.

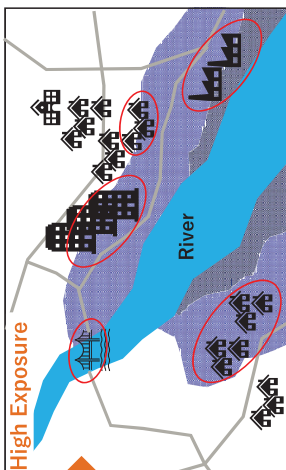
Before Urbanization

No Exposure



After Urbanization

High Exposure



Importance and Concept of Disaster Risk Reduction

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What is Exposure? (Cyclone)

If a Hazard occurs in an area of no exposure, then there is no risk. For example, same category 5 super Typhoon occurred in a different location with totally different damage situation.



Source: UNITAR (2014) cited in <https://www.preventionweb.net/understanding-disaster-risk/component-risk/exposure>

Importance and Concept of Disaster Risk Reduction

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What is Vulnerability?

"Vulnerability" has relatively a divergence meaning. However, "most experts agree that understanding vulnerability requires more than analyzing the direct impacts of a hazard. Vulnerability also concerns the wider environmental and social conditions that limit people and communities to cope with the impact of hazard." (UNDRR Prevention Web)



Source: ADB

Challenges during disaster is different among gender. Women participation in community decision will make the community more resilient to disaster



Source: GFDRR

Person with disabilities are considered most vulnerable in times of disaster and requires more preparation and support.



Source: ADB

Community which rely on livelihood such as fishery and agriculture will be affected in the condition of natural phenomena changes.

Vulnerability:
The conditions determined by physical, social, economic and environmental factors or processes which increase the susceptibility of an individual, a community, assets or systems to the impacts of hazards. (UNDRR)

Importance and Concept of Disaster Risk Reduction

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What is Capacity?

"Capacity" is how the community or institution can cope with disaster to reduce the damage. It is important to enhance the capacity in all level to cope with disasters.

The photo are some example of activities to enhance the capacity to cope with disaster. Left: Flood Preparedness Programme, Right: Cyclone Preparedness Programme (CPP)



Capacity:
Combination of all the strengths, attributes and resources available within an organization, community or society to manage and reduce disaster risks and strengthen resilience. (UNDRR)

Source: Developing Institutional Framework of Flood Preparedness Programme, Concept note on Dynamic Flood Risk Model Under Flood Preparedness Programme, DDM home page accessed on 7th Sep, 2023

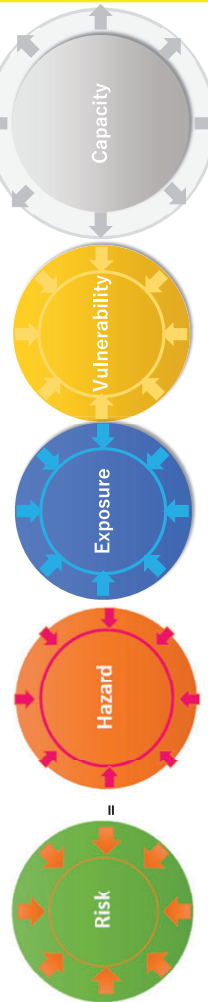
Importance and Concept of Disaster Risk Reduction

23

How to Reduce Disaster Risk?

"Disaster Risk" can be reduced by reducing "Hazard", "Exposure" and "Vulnerability" and increasing the "Capacity" with appropriate counter measures as shown in the figure below.

Four Elements of Disaster Risk



By decreasing high hazard potential area by structural countermeasure like installing embankment against flood

By managing exposed elements and these vulnerabilities by development control, land use planning, strengthening of building and infrastructures, installing warning system and others.

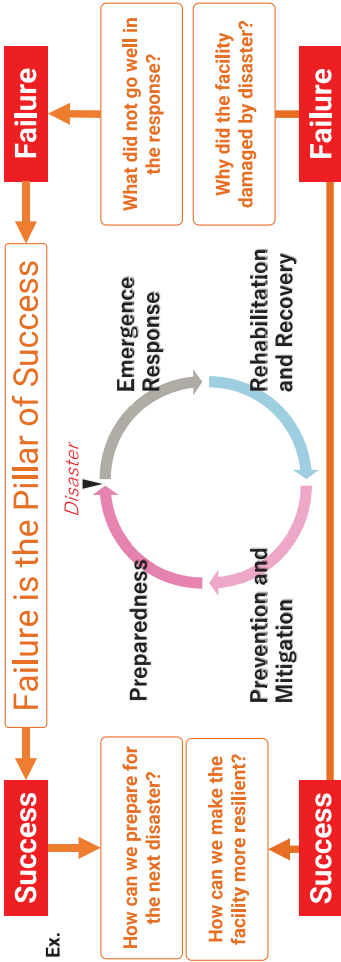
Importance and Concept of Disaster Risk Reduction

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Key Concept

Importance of Disaster Management Cycle

By considering the "Disaster Management Cycle" it is possible to update the countermeasures against disaster. The process is to learn from the disaster and make enhance the capacity and implement countermeasures to overcome the challenges. It is a continuous steps.



Importance and Concept of Disaster Risk Reduction

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Countermeasures against Disasters

Key Message:
Understand the various approach of countermeasures against disaster and the importance to consider the **comprehensive approach** in line with related institutions.

Concepts for Comprehensive Approach

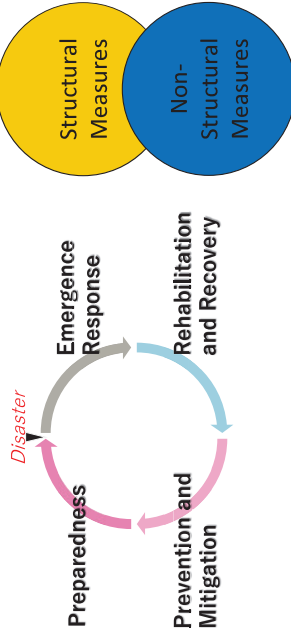
Key Concept

In considering DRR measures a comprehensive approach is important. For a comprehensive approach for DRR, three major point of view could be considered as bellow.

What Hazard are we dealing with?



Focus on which stage of the disaster management cycle



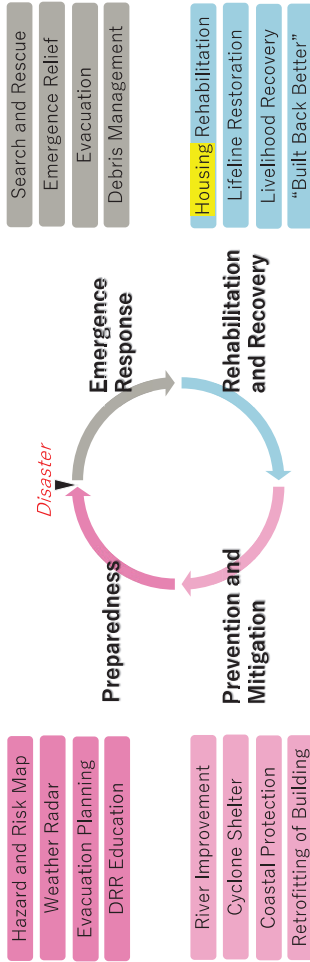
Countermeasures against Disasters

27

Concepts for Comprehensive Approach

Key Concept

In each steps of the disaster management cycle, there are countermeasures to be taken. It is important to recognize each steps and consider possible countermeasure to reduce disaster risk.



Countermeasures against Disasters

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Concepts for Comprehensive Approach

Key Concept

It is also important to recognize which hazard the countermeasure is targeting to reduce.



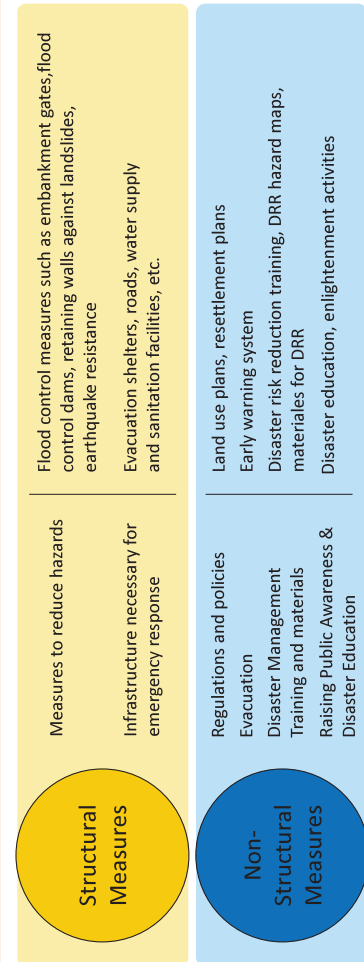
Countermeasures against Disasters

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Concepts for Comprehensive Approach

Key Concept

It is also important to define and categorize in structural and non-structural measures.

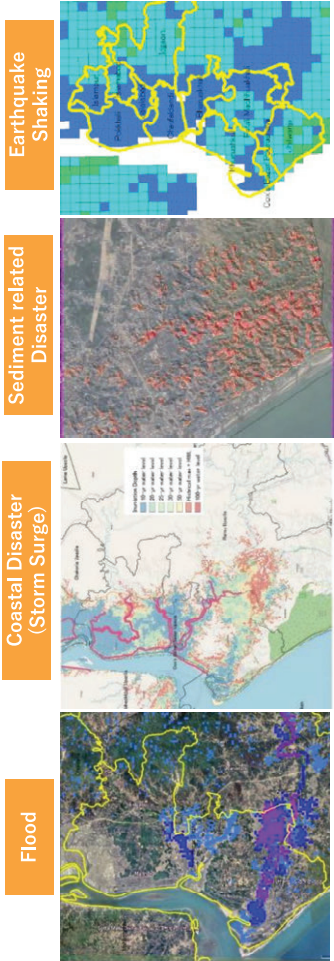


Countermeasures against Disasters

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Example of DRR measures (Hazard Map)

To understand the hazard situation, formulation of hazard map is useful to visualize the hazard.



Countermeasures against Disasters

Example of DRR measures (Coastal Protection)

Countermeasures for coastal structures includes various approach as show below.

Type of Counter Measures
Dike (Polder)/Coastal Revetment
Seawall/Guide walls
Geo Tube
etc.

Major Counter Measures for Coastal Protection



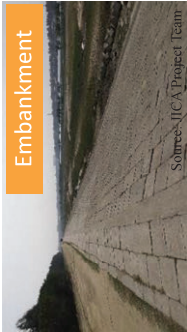
Countermeasures against Disasters

Example of DRR measures (River Improvement)

River channel improvement is a measure to increase the flow capacity of the existing river channel.

The countermeasures for river improvement includes the items below.

Type of Counter Measures
Embankments/Dike
Canal Excavation and other river improvements (Widening and Deepening)
Sluice gates
Retarding Basin/Reservoir
Drainage Facilities (Pumping Station etc)
Dam
Riverbank Protection
etc.



Countermeasures against Disasters

Example of DRR measures (Sediment Disaster)

There are many types of countermeasures for slope failure and can be divided in two main categories: slope stabilization and rock-fall prevention.

Slope Stabilization

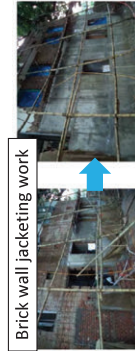
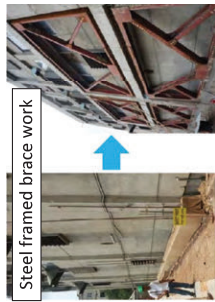


Source: DDM

Countermeasures against Disasters

Example of DRR measures (Earthquake Shaking)

Retrofitting of the existing building



Building on community strength
for Earthquake-Resilient
Houses' (Nepal)

Source: https://www.jica.go.jp/english/news/field/2019/20191007_01.html

Countermeasures against Disasters

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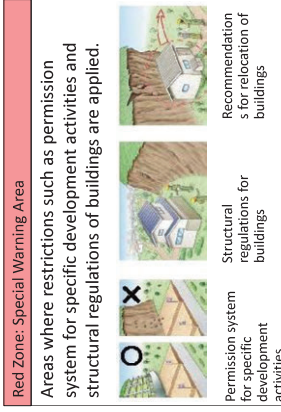
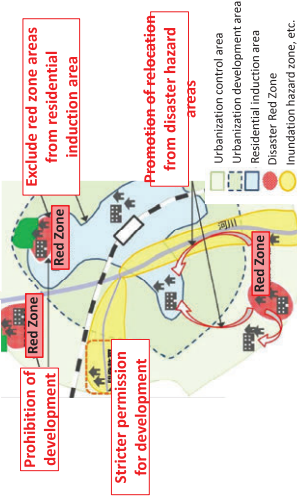
Example of DRR measures (Land use Planning)

Land use planning in local administrations in Bangladesh is now under process by the effort of central ministry (UDD). Below are some advanced example in Japan.

Urbanization control

Resettlement

Designating Special Warning Area



Countermeasures against Disasters

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Example of DRR measures (Emergency Operation)

Considering countermeasures against all possible disaster is important to reduce the damage and impact caused by disaster.

Lightning Arrestor



Source: DDM

Cyclone Shelter



Flood Shelter



Source: DDM

Shelters / Mujib Kilah



Source: DDM

Evacuation / Emergency Roads



Source: DDM

Countermeasures against Disasters

Countermeasures against Disasters

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Prevention and Mitigation

Preparedness

Non-Structural

Flood

Other

Example of DRR measures (non-structural)

Type of Counter Measures
Early Warning Information and Communication
Monitoring System of Rainfall / Water level
Flood Forecasting and Warning System / Radio
Cyclone Warning System
Strategy for cropping, harvesting to global warming
Disaster Management Training and materials
Preparation of SOP for emergency operation
Simulation and Exercise
Evacuation planning and drill
Preparation for the emergency operation
Raising Public Awareness & Disaster Education
Publication of Hazard Maps
Inventory preparation on vulnerable infrastructure
Disaster preparedness education in school
Gender Based Disaster Management
DRR Awareness Related Billboard
etc.



Water Level Sensor and Alert



Disaster Preparedness Drill

Source: JICA

Source: BBC

Countermeasures against Disasters

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Response

Rehabilitation

Structural

Example of DRR measures (Rehabilitation)

After disaster efforts to rehabilitate the infrastructure is needed. To understand the necessary rehabilitation, post disaster needs assessment is also important.

Embankment in need of rehabilitation



Source: JICA Project Team

Roads in need of rehabilitation



Source: The Statesman

Countermeasures against Disasters

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Section 2

Role of DRR Relevant Institutions and the Global Agenda

2

SOD and Responsibility of DRR Relevant Institutions

Key Message:

Understand the role and responsibilities of related institution based on the **SOD 2019** and the **legal framework of disaster risk management plan** at the upazilla level.

3

Legal Foundation of Disaster Management

Key Contents

The legal foundation of disaster management in Bangladesh is based on the Disaster Management Act 2012, Standing Orders on Disaster (SOD) 2019 and National Plan for Disaster Management (NPDm).

- The primary and principal legal document in disaster management in Bangladesh is the **Disaster Management Act 2012** which delineates the roles, responsibilities of Ministry of Disaster Management and Relief (MoDMR) and its affiliated department agency.
- In addition, **National Disaster Management Policy 2015** was formulated to describe the strategic framework, and national principles of disaster management in Bangladesh
- Standing Orders of disasters (SOD) 2019** and **National Plan for Disaster Management (NPDm) 2021-2025** are the central laws and action plans that guide policies and activities under disaster management.

SOD and Responsibility of DRR Relevant Institutions

4

Coordination Function of the UzDMC

Key Contents

Upazila DMC consist of the officers from various sector and background, it is expected to function as a coordination body for disaster management in the upazila level.

[Points mentioned in SOD - Section 4.1]

- Ensuring effective participation of relevant agencies and inter-agency coordination is indispensable for effective implementation of disaster risk management.
- The success of disaster risk management at the local level largely depends on the proper initiative and coordination of local agencies/organizations.
- Local level coordination is a prime indicator of effective disaster risk management.
- Institutional strength and coordinated effort of all concerned agencies/organizations play an important role for establishing a disaster risk management system.

[Challenge for Coordination]

- "Ensuring Coordination and Cooperation" is mentioned as one of the major challenges to achieve the Sendai Framework for Disaster Risk Reduction in the Voluntary Report to the Mid Term Review.

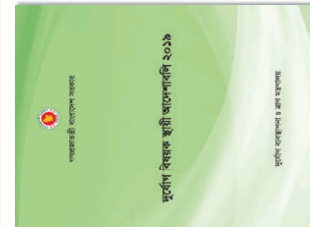
SOD and Responsibility of DRR Relevant Institutions

6

Standing Order on Disaster (SOD)

Key Contents

Standing Order on Disaster (SOD) was formulated on 2019 and describes the roles and responsibilities of the DRR related organizations [Section 1.1]



In disaster risk management, the effective participation of all is very important. The objective of the formulation of the Standing Orders on Disaster (SOD) is to inform all concerned about their roles and responsibilities at every stage of disaster risk management.

As per the SOD, each ministry, division, department and agency will prepare its own detailed work plan to perform its responsibilities and functions efficiently as mentioned in the Standing Orders; and will take necessary measures to implement it as per their own duty and capacity. To respond to a disaster, the National Disaster Management Council (NDMC) and the Inter-Ministerial Disaster Management Coordination Committee (IMDMCC) will coordinate disaster-related activities at the national level.

Coordination at division, district, city corporation, upazila, pourashava, union and ward levels will be done by the respective Disaster Management Committees (DMC).

SOD and Responsibility of DRR Relevant Institutions

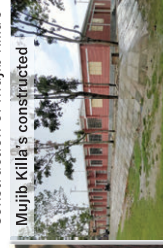
5

Activities Mandated to UzDMC

Key Contents

UzDRMC are mandated to conduct various activity in the community level including the activity for risk reduction in addition to response activities. The mandate is written in the SOD [Section 4.1.4]

Community Risk Assessment Risk Reduction Action Plan Construction of Mujib Killa's Rehabilitation of damaged roads



Source: Completion Report of Capacity Enhancement on for CDRP project under CBDRP project.

Source: JICA project for Capacity Enhancement on for CDRP project under CBDRP project.

Source: DDM

Source: JICA

SOD and Responsibility of DRR Relevant Institutions

7

Contingency Plan

The aspects to be included in the Contingency Plan is defined in the SOD 2019.

- 2.2.1 Assign responsibilities among government departments and Disaster Management Committee members at the Upazila level;
- 2.2.2 Collect and rapidly distribute emergency humanitarian aid to ensure resource management procedures and emergency response;
- 2.2.3 Undertake actionable directions to resume emergency services including water, electricity, gas, telecommunications, road communications, education activities, etc.;
- 2.2.4 Form the following sub-groups on the basis of knowledge and skills to play a role during disasters:
 - a. Early warning dissemination;
 - b. Rescue and safe evacuation;
 - c. First aid services;
 - d. Shelter management and distribution of humanitarian aid;
- 2.2.5 Conduct **regular scenario-based simulations/drills/campaigns** with a view to execute the responsibilities of the Contingency Plan in the real-time situation. Instructions:
 - 1) The Upazila Disaster Risk Management Plan has to be sent to all stakeholders of the Upazila and concerned Deputy Commissioner;
 - 2) Send a Copy of the Upazila Disaster Risk Management Plan to the District Disaster Management Committee;
 - 3) Review and update the Upazila Disaster Risk Management Plan every year

Risk Reduction Action Plan (RRAP)

The aspects to be included in the RRAP is defined in the SOD 2019.

- 1.1.1 Undertake a comparative analysis of the different types of hazards and **vulnerabilities** within the Upazila;
- 1.1.2 **Prioritize physical and non-physical risk reduction activities based on the risks of the respective Upazila;**
- 1.1.3 The Risk Reduction Action Plan will contain **a list of specific and measurable risk reduction activities** in a tabular format along with a **roadmap** (i.e. who, when, where, resource requirements, etc.) **for implementation;**
- 1.1.4 In the implementation of the Action Plan, **consider the resources and planning by the government departments, NGOs, community-based organizations (CBOs) and the private sector;**
- 1.1.5 Take necessary steps for capacity building and preparedness measures through government agencies, NGOs, CBOs and the private sector;
- 1.1.6 Consider gender sensitivity, disability inclusion and environmental considerations for both physical and non-physical risk reduction activities

Key Contents

Coordination with Related Organization

In the SOD 2019, roles and responsibility of all organization involved in disaster management is described. In order to achieve appropriate disaster management in the community level, it is important to know what role and responsibility each related organization is conducting. Local Disaster Management Committee (DMC) will be the key coordination center in the local level.

[Points mentioned in SOD - Section 4.1]

- Local committees perform coordination and implementation roles of disaster risk reduction, preparedness, emergency response and recovery.

[Focus in this Basic Training]

- As this basic training focus on **proactive disaster risk reduction (DRR)**, in the following slides the role and responsibility on risk reduction function of related organization is summarized.

Key Contents

Upazila Disaster Risk Management Plan

Each upazila needs to prepare the UzDMP (Disaster Risk Management Plan) which consist of two plans, 1) RRAP (Risk Reduction Action Plan) and 2) Contingency Plan.

“APPENDIX 10 Upazila Disaster Risk Management Plan –Issues to Consider”

Each Upazila will prepare an Upazila Disaster Risk Management Plan (UzDMP) in the light of the duties and functions described in the SOD. The UzDMP plan will be prepared based on the plans of the Unions under the Upazila. The plan will include: 1) Risk Reduction Action Plan; and 2) Contingency Plan.



Coordination Structure of Disaster Management

Key Contents

To achieve multi-sectoral and national and local coordination, committees are established based on SOD

Committees at National Level

Committees at Local Level

Source: Implementation of Sendai Framework for Disaster Risk Reduction (SFDRR) in Bangladesh National Voluntary Report to the Mid-Term Review of Sendai Framework, MoDR

SOD and Responsibility of DRR Relevant Institutions

Responsibility of Related Institutions

Organization	Function and Responsibility	Preparedness	Response	Reconstruction	Mitigation/Prevention
Power Division	Undertake program and plan to ensure uninterrupted services during disaster and take measures to prevent damage to power plants and prepare database for all electrical components in disaster prone areas.	✓	✓	✓	✓
Water Supply and Sewerage Authority (WASA)	Undertake risk determination and develop alternative water supply systems and underground sewerage and drainage system. Formulate contingency plan for earthquake in the water supply sector.	✓	✓	✓	✓
Department of Agricultural Extension	Enhance knowledge of farmers on DRR and to undertake DRR actions (ensuring seed stocks, preparing seedbeds, supply pesticides and fertilizer and introduction of stress-tolerant crops).	✓	✓	✓	✓
Ministry of Fisheries and Livestock	Enhance knowledge of fisheries and livestock sector on DRR and to undertake DRR actions (zoonotic diseases prevention, evacuation, urgent food supply and post disaster rehabilitation of livestock).	✓	✓	✓	✓
Directorate General of Health	Provide medications, treatment equipment, safe drinking water and electricity in the shelters of disaster-affected areas and drills for urban disaster (building collapse, earthquake and fire).	✓	✓	✓	✓

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Responsibility of Related Institutions

Key Contents

Function and responsibility of major related institutions are summarized as below.

Organization	Function and Responsibility	Preparedness	Response	Reconstruction	Mitigation/Prevention
Flood Forecasting and Warning Centre (FFWC)	Conduct flood risk assessments and develop long-term risk reduction action plan for floods and responsible for forecasting, monitoring and warning system of floods	✓	✓	✓	✓
Bangladesh Water Development Board (BWDB)	Construction, reform, repair and implementation of flood control measures (embankment, sluice gates, drainage, irrigation and flood early warning) and capacity building of field level officials for implementation.	✓	✓	✓	✓
Local Government Engineering Department (LGED)	Plan and construct local infrastructures for discharge flooding water (feeder roads, bridges, culverts), earthquake resilient construction and urban planning and reconstruction work in disaster affected area.	✓	✓	✓	✓
Public Works Department (PWD)	Provide design guidelines and information for infrastructures to be resilient against earthquakes, tsunamis, waterlogging and floods.	✓	✓	✓	✓
Department of Public Health Engineering (DPHE)	Identify local level risk and ensure implementation of the accepted RRAP in the sector of safe drinking water and hygiene	✓	✓	✓	✓
Bangladesh Meteorological Department (BMD)	Observation, forecasting, information dissemination and warning for lightning, cyclone, storm surge and long-term weather forecast. Improvement of equipment and system for the above mentioned activity.	✓	✓	✓	✓

Responsibility of DRR Relevant Institutions

SOD and Responsibility of DRR Relevant Institutions

Responsibility of Related Institutions

Key Contents

Function and Responsibility

Organization	Function and Responsibility	Preparedness	Response	Reconstruction	Mitigation/Prevention
Power Division	Undertake program and plan to ensure uninterrupted services during disaster and take measures to prevent damage to power plants and prepare database for all electrical components in disaster prone areas.	✓	✓	✓	✓
Water Supply and Sewerage Authority (WASA)	Undertake risk determination and develop alternative water supply systems and underground sewerage and drainage system. Formulate contingency plan for earthquake in the water supply sector.	✓	✓	✓	✓
Department of Agricultural Extension	Enhance knowledge of farmers on DRR and to undertake DRR actions (ensuring seed stocks, preparing seedbeds, supply pesticides and fertilizer and introduction of stress-tolerant crops).	✓	✓	✓	✓
Ministry of Fisheries and Livestock	Enhance knowledge of fisheries and livestock sector on DRR and to undertake DRR actions (zoonotic diseases prevention, evacuation, urgent food supply and post disaster rehabilitation of livestock).	✓	✓	✓	✓
Directorate General of Health	Provide medications, treatment equipment, safe drinking water and electricity in the shelters of disaster-affected areas and drills for urban disaster (building collapse, earthquake and fire).	✓	✓	✓	✓

Responsibility of DRR Relevant Institutions

SOD and Responsibility of DRR Relevant Institutions

SOD and Responsibility of DRR Relevant Institutions

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Responsibility of Related Institutions

Key Contents

Function and Responsibility

Organization	Function and Responsibility	Preparedness	Response	Reconstruction	Mitigation/Prevention
Bangladesh Fire Service and Civil Defense	Operation of rescue, safe evacuation and first aid. Capacity building of volunteers including regular drills for emergency response and identifying risky building considering earthquake and fire.	✓	✓	✓	✓
Bangladesh Police	Participation in rescue and humanitarian aid. Organize annual drills for cyclone, flood and earthquake including the police wireless network. System to be used in emergency to strengthen the communication.	✓	✓	✓	✓
Cyclone Preparedness Programme (CPP)	Training of CPP staff and volunteers in DRR and allocate necessary resources and raising awareness on inclusive actions. Participation in the preparation of local risk assessment and risk reduction action plan.	✓	✓	✓	✓

Responsibility of DRR Relevant Institutions

SOD and Responsibility of DRR Relevant Institutions

SOD and Responsibility of DRR Relevant Institutions

15

Responsibility of Related Institutions					Key Contents
Organization	Function and Responsibility	Preparedness	Response	Reconstruction	Mitigation Prevention
Divisional Commissioner	Prepare short, medium and long term complete RRAP at the divisional level and undertake necessary initiatives for implementation including fund raising. Ensure integration of RRAP in to development plans.	✓	✓	✓	✓
Deputy Commissioner (DC)	Prepare hazard maps , and short, medium and long term RRAP at the district level . Establish district level disaster management fund for implementation of RRAP . Ensure linkage between RRAP and development plan	✓	✓	✓	✓
Upazila Nirbahi Officer (UNO)	Prepare hazard maps , and short, medium and long term RRAP at the upazila level . Ensure linkage between RRAP and development plan. Ensure speedy dissemination of early warnings and support simulation/drill in the union.	✓	✓	✓	✓

SOD and Responsibility of DRR Relevant Institutions

16

Global Agenda and How it is Reflected to Plans and Policy of Bangladesh on Disaster Management

Key Message:
Understand the **Global Agenda** related to disaster risk reduction including **"Sendai Framework for Disaster Risk Reduction"** and how it is reflected to the policy and legal framework in Bangladesh.

17

Recent Disaster in the World

Major disaster in the world have notice us the importance to wisely deal with repeating disaster and its history have given us wisdom to **proactively act against the disaster**

2004 Sumatra Earthquake and Indian Ocean Tsunami

January 2005

Source: BBC

2011 East Japan Great Earthquake and Tsunami

Source: Reuters

2013 Flood in Thailand

Source: JICA

2013 Typhoon Yolanda In Philippines

Source: GFDRR

Global Agenda and How it is Reflected to Bangladesh Policy

18

History of Global Agenda for Disasters

Based on the experience of major disaster in the world, there was a paradigm shift in the Global Agenda for Disaster and the concepts was summarized in the Sendai Framework for Disaster Risk Reduction.

Hyogo Framework for Action 2005 - 2015

- Ensure that disaster risk reduction (DRR) is a national and a local priority with a strong institutional basis for implementation
- Identify, assess and monitor disaster risks and enhance early warning
- Use knowledge, innovation and education to build a culture of safety and resilience at all levels
- Reduce the underlying risk factors
- Strengthen disaster preparedness for effective response at all levels

Sendai Framework for Disaster Risk Reduction 2015-2030

- Understand disaster risk
- Strengthen disaster risk governance to manage disaster risk
- Investing in disaster reduction for resilience and
- Enhancing disaster preparedness for effective response, and to **'Build Back Better'** in recovery, rehabilitation and reconstruction.

2004 Sumatra Earthquake and Indian Ocean Tsunami

2011 East Japan Great Earthquake and Tsunami

2013 Flood in Thailand

2013 Typhoon Yolanda In Philippines

2005

2015

Global Agenda and How it is Reflected to Bangladesh Policy

Best balance with structural and non-structural measures

Disaster Impact the Economy in Global Scale

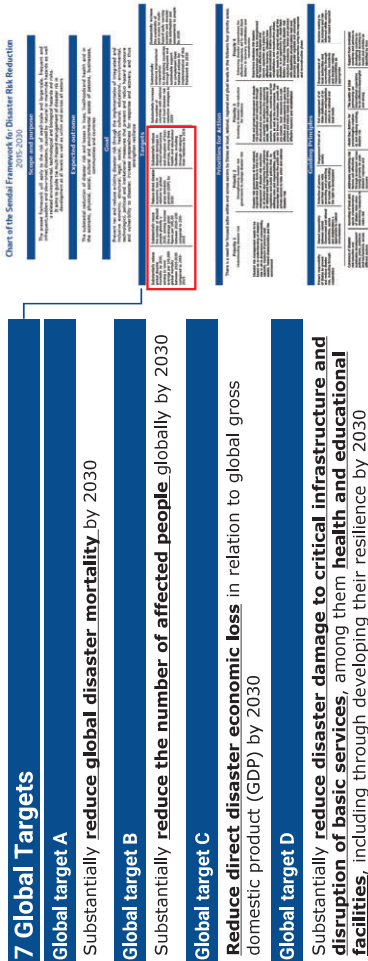
Concept of Build Back Better

Early Warning for Tsunami Highlighted

19

7 global targets of Sendai Framework for DRR

To monitor the situation of DRR activities, 7 global targets was agreed. Each national government has the obligation to report the situation for the 7 global targets.



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A3-3-38

4 Priorities of Action of the Sendai Framework for DRR

To enhance the implementation of the Sendai Framework for DRR and to provide a clear outline of the actions to be taken to **substantial reduce the loss and damage caused by disaster**

Priorities of Action

Priority 1. Understanding disaster risk

Disaster risk management **should be based on an understanding of disaster risk** in all its dimensions of vulnerability, capacity, exposure of persons and assets, hazard characteristics and the environment. Such knowledge can be used for risk assessment, prevention, mitigation, preparedness and response.

Priority 2. Strengthening disaster risk governance to manage disaster risk

Disaster risk governance at the national, regional and global levels is vital to the management of disaster risk reduction in all sectors and **ensuring the coherence of national and local frameworks of laws, regulations and public policies** that, by **defining roles and responsibilities**, guide, encourage and incentivize the public and private sectors to take action and address disaster risk

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7 global targets of Sendai Framework for DRR

7 Global Targets

Global target E

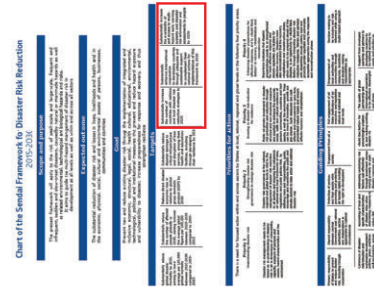
Substantially increase the number of countries with **national and local disaster risk reduction strategies** by 2020

Global target F

Substantially enhance **international cooperation to developing countries** through adequate and sustainable support to complement their national actions for implementation of this framework by 2030

Global target G

Substantially increase the availability of and access to **multi-hazard early warning systems and disaster risk information and assessments** to people by 2030



Global Agenda and How it is Reflected to Bangladesh Policy

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4 Priorities of Action of the SFDRR

Priorities of Action

Priority 3. Investing in disaster risk reduction for resilience

Public and private investment in disaster risk prevention and reduction through structural and **non-structural measures** are essential to enhance the economic, social, health and cultural resilience of persons, communities, countries and their assets, as well as the environment. These can be drivers of innovation, growth and job creation. Such measures are cost effective and instrumental to save lives, prevent and reduce losses and ensure effective recovery and rehabilitation

Priority 4. Enhancing disaster preparedness for effective

Experience indicates that **disaster preparedness needs to be strengthened for more effective response** and ensure capacities are in place for effective recovery.

Priority 4 "Build Back Better" in recovery, rehabilitation and reconstruction

Disasters have also demonstrated that the recovery, rehabilitation and reconstruction phase, which needs to be prepared ahead of the disaster, is an opportunity to **«Build Back Better» through integrating disaster risk reduction measures**. Women and persons with disabilities should publicly lead and promote gender-equitable and universally accessible approaches during the response and reconstruction phases

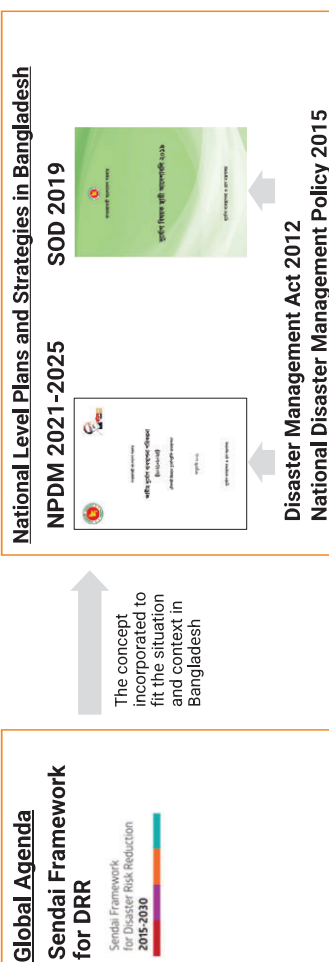
Global Agenda and How it is Reflected to Bangladesh Policy

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SFDRR and National Disaster Risk Reduction Strategy

Key Contents

As the concept of the importance of proactive disaster risk reduction was clarified in the Sendai Framework for disaster risk reduction (SFDRR) the government of Bangladesh have been taking measures to include the concept of disaster risk reduction into the policy and plans in Bangladesh.



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National Plan for Disaster Management

The National Plan for Disaster Management 2021-2025 was adopted in 2020 November, reflecting the concept of Disaster Risk Reduction. *Details to be provided in Section 2



National Plan for Disaster Management (NPDM) 2021-2025

4 focus area

- 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

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National Plan for Disaster Management

Based on the vision of "winning resilience against all odds" the NPDM 2021-2025 have set 12 goals and 4 focus areas to further enhance the implementation of Sendai Framework for DRR.

NPDM 2021-2025 "12 Goals"

- Reduction of number of deaths, missing persons and directly affected people to 4000 per 100,000 population by 2025.
- Reduction of damaged land to 100,000 acres.
- Number of disaster affected households within 250,000 acres.
- Direct economic loss inflicted by disasters as a proportion of GDP has to stand at maximum 0.7% per cent in 2014.
- Total damage and loss resulting from disasters should be brought down to 100,000 million BDT.
- In the past, a target was set to construct 5000 shelters in the coastal districts. **2000 additional shelter** centres should be constructed.
- Flood related structural infrastructures like embankments should be designed providing adequate storm surge protection.**
- Proper **maintenance of polders/embankments.**
- Increase in urban volunteers and coastal volunteers by 100,000.
- Replicate the design of resilient houses in other disaster-prone regions** in the country.
- Food silos in every house for food grain storage.
- Provision of safety equipment to volunteers in every ward.

Global Agenda and How it is Reflected to Bangladesh Policy

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Updated points of NPDM 2021-2025

Based on the achievement and challenges recognized through the NPDM 2016-2020, important points to be addressed in the NPDM 2021-2025 was identified.

More Investment to Resilient Infrastructures for Disaster Risk Reduction

- As Sendai Framework for DRR stress the increasing disaster related investment, **it is obvious that investment of infrastructure contributes to the economic growth and improve the people's life as well.**
- The current global investment of infrastructure gap is around 15 trillion USD.
- From the past experiences of disasters, **infrastructure projects have been worked effectively** as the typical labor-intensive projects as well as **improve disaster risk reduction** in the region.
- And more, infrastructure projects have been greatly contributed cash back into local economies. Therefore, **even we are facing financial pressure, increasing investment of infrastructure is vital for the country's future.**
- However, some issues should be considered in these projects like quality, complying the rules, sustainability, technologically advanced and future disaster risk reduction.

Global Agenda and How it is Reflected to Bangladesh Policy

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Updated points of NPDM 2021-2025

Policy Shift to “Build Back Better” Recovery Approach

- Recovery policies also should include not only livelihood generation and restarting industries, but also regenerating human/natural capital as well as resuming **infrastructure investments for physical resilience**.
- Natural hazard and climate change never wait. It requires careful examination about the magnitude and depth of the impacts and losses across sectors and vulnerable communities, to take most appropriate recovery measures as well as **prevention measures for next crisis** immediately.

Importance in Disaster Risk Governance and Institutional Enhancement

- The effective recovery process depends on **strong disaster risk governance and capacity of coordination mechanism within the government institutions**.
- MoDMR has sought to **strengthen institutional capacities** and disaster risk governance **in order to build disaster resilience**. For this, we need to go back to as before, **mainstreaming line of disaster risk reduction and try to enhance institutional capacity**

Global Agenda and How it is Reflected to Bangladesh Policy

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Integration with Development Context

The “Vision 2021” identified “Effective Natural Disaster Management” as key sub-goals “7.10”. Consequently, the concept of disaster management have been integrated to plans and strategies of the development context.

Plans and Strategies Related to Development Issues

- Bangladesh Vision 2021
- 8th Five-Year Plan
- Second Perspective Plan 2021-2041
- Bangladesh Delta Plan 2100
- National Adaptation Plan 2022
- National Sustainable Development Strategy (NSDS)
- Local Level (Upazila) Development Planning Proforma



SOD and Responsibility of DRR Relevant Institutions

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Result of the Mid-term Review of SFDRR

In the national voluntary report to the mid term review of Sendai framework, the situation of achievement is described regarding the situation of the formulation of national and local DRR strategy.

- The Government has been active in establishing various policies and institutional initiatives to integrate disaster and climate change into its national planning. In particular, the government of Bangladesh is committed to promoting a whole of society approach to address climate change related risks. **National strategies like Standing Orders on Disaster (SOD) and National Plan for Disaster Management (NPDM)**, are aligned with the priorities of SFDRR (p.11)
- Bangladesh has taken number of initiatives for developing DRR strategies during 2005 to 2020. These includes substantial revision and update of **SOD** during 2010 and 2019, Formulation of **Disaster Management Act** during 2012, **Delta Plan highlighting** the Country into six hot spots with the view to **initiate appropriate DRR measures**. **Multi Hazard Risk Assessment** for whole country (2016), **Earthquake Risk Assessment** for Major Cities (2009) **NPDM** during 2015 and 2020 and **National Strategies on Internal Displacement** during 2020. Most of these DRR Strategies are aligned along with the SFDRR priorities. (p.29)
- Significant progress in the National level DRR strategy but not progressed in local level**

Global Agenda and How it is Reflected to Bangladesh Policy

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Integration with Development Context

As Sendai Framework was adopted in 2015, also other important initiatives such as the Sustainable Development Goals was adopted. And the importance of building synergies between development issues was acknowledged

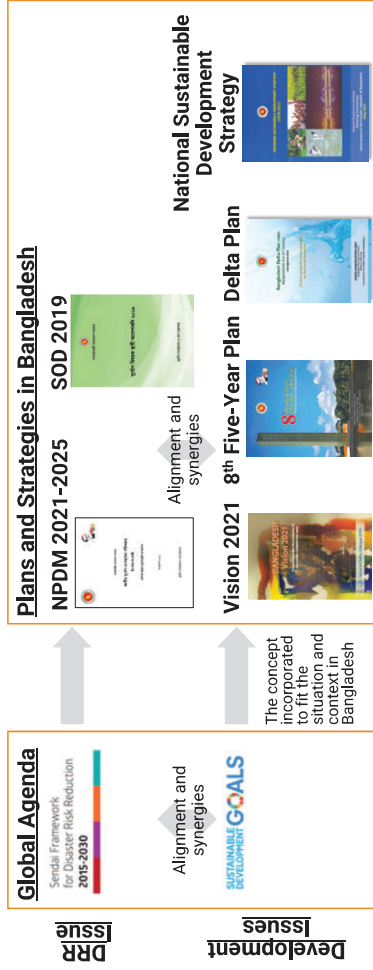


Global Agenda and How it is Reflected to Bangladesh Policy

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Disaster-Development Linkages

Building synergies between the Sendai Framework for DRR and other international initiatives such as the Sustainable Development Goals (SDGs) are essential.



Global Agenda and How it is Reflected to Bangladesh Policy

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A3-3-41

Good Practices of Pre-disaster DRR investment

Key Message:
Understand the impact and effect of **pre-disaster DRR investment** to reduce the damage and cost to response and recover from disaster.

Impact of proactive action for DRR

Concept of Disaster Risk Reduction (DRR) focus on the paradigm shift to deal with disaster from **relief-based disaster response** to **proactive action** to **reduce disaster risk**.

Every **1USD** spent reducing people's vulnerability to disasters saves around **7USD** in economic losses (UNDP)

SFDRR and the Importance of Local DRR Strategy

4

Section 3

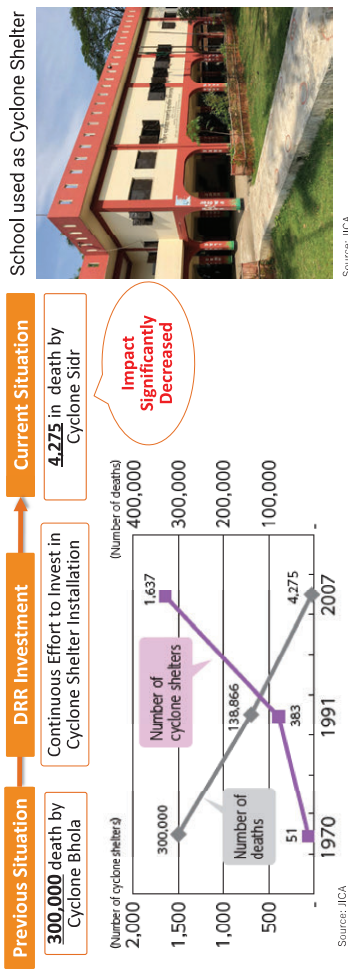
Importance of

Local DRR Strategy

Key Contents

Example of Pre-disaster DRR Investment (Cyclone)

In Bangladesh, from 1970's major investment on the construction of cyclone shelters have contributed to significantly reduce the number of death caused by cyclone

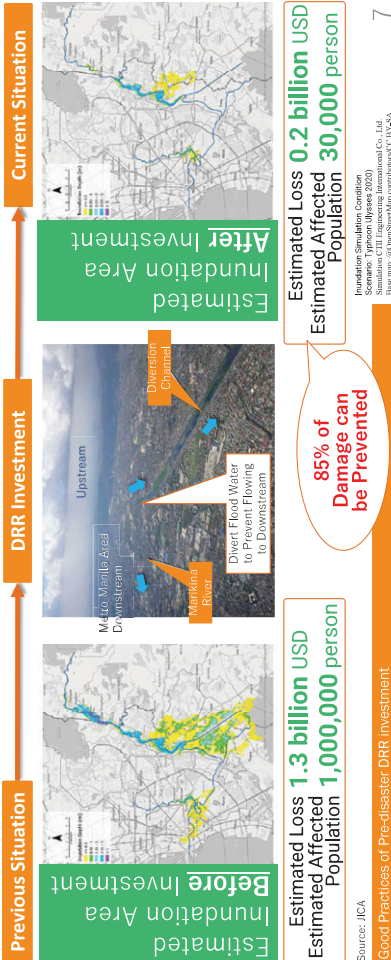


Good Practices of Pre-disaster DRR investment

5

Example of Pre-disaster DRR Investment (Flood)

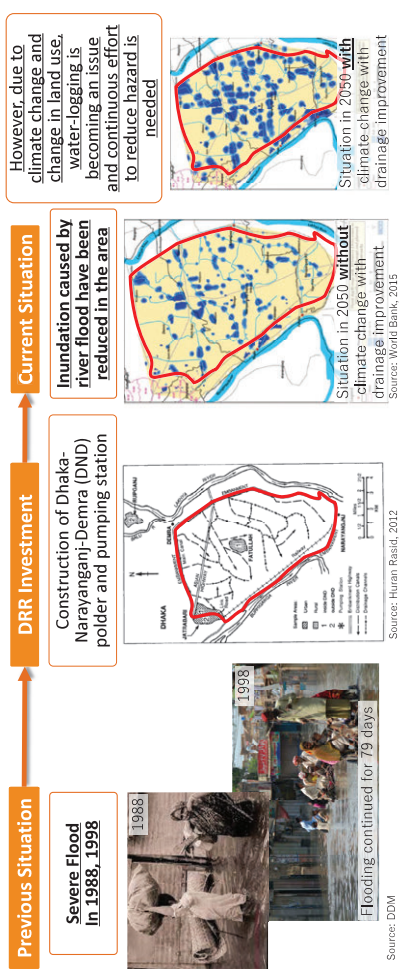
In the Philippines, the effectiveness of the river improvement project was evaluated. The evaluation show that the project have significantly reduced the damage and loss caused by flood



Key Contents

Example of Pre-disaster DRR Investment (Flood)

In Bangladesh, construction of Dhaka-Narayanganj-Demra (DND) is preventing flood in Dhaka.



Good Practices of Pre-disaster DRR investment

6

Introduction of the UzDRRPs as a Risk Reduction Action Plan (RRAP)

Key Message:
Provide information on the **unique features and the contents of the upazila disaster risk reduction plan (UzDRRP)** as an input to the risk reduction action plan (RRAP).

Details of the Global Target E

Key Contents

Initial efforts to be done under the national and local government level is to formulate a strategy on what kind of DRR investment are necessary to reduce the disaster risk.

Global target E

Substantially increase the number of countries with **national and local disaster risk reduction strategies** by 2020



E-1 : Number of countries that adopt and implement national disaster risk reduction strategies in line with the Sendai Framework for Disaster Risk Reduction 2015-2030.

E-2 :Percentage of local governments that adopt and implement local disaster risk reduction strategies in line with national strategies.

SFDRR and the Importance of Local DRR Strategy

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Purpose and Contents of UzDRRP

Key Contents

UzDRRP is a document that analyzes the disaster risks of the Upazila, identifies priority risks, sets DRR targets, collects needs of countermeasures at upazila and union level and priorities the countermeasures based on the DRR targets. Below is the standard table of contents

Chapter 1 Introduction (Objectives, Rationale, Methodology)

Chapter 2: Geographic, Socio-economic, and Meteorological Conditions

Chapter 3: Target Hazards and Disaster-Prone Areas (Historical Disaster Records, Hazard Maps)

Chapter 4: Disaster Risk and DRR Targets (Priority risks to be addressed, DRR Targets)

Chapter 5: Action Plan of DRR countermeasures

- Current status and issues of DRR countermeasures
- Prioritized projects for DRR Target
- Monitoring and Updating of the Plan

Introduction of the UzDRRPs as a Risk Reduction Action Plan (RRAP)

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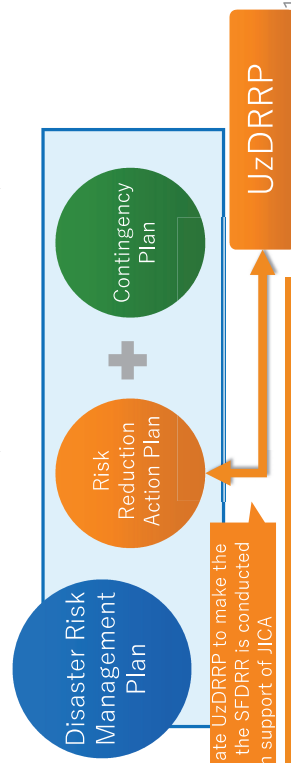
Existing DRR strategy in the Local Level

Key Contents

Each upazila needs to prepare the UzDMP (Disaster Risk Management Plan) which consist of two plans, 1) RRAP (Risk Reduction Action Plan) and 2) Contingency Plan.

"APPENDIX 10 Upazila Disaster Risk Management Plan –Issues to Consider"

Each Upazila will prepare an Upazila Disaster Risk Management Plan (UzDMP) in the light of the duties and functions described in the SOD. The UzDMP plan will be prepared based on the plans of the Unions under the Upazila. The plan will include: 1) Risk Reduction Action Plan; and 2) Contingency Plan.



Initiative to formulate UzDRRP to make the RRAP aligned with the SFDRR is conducted by DDM in support of JICA

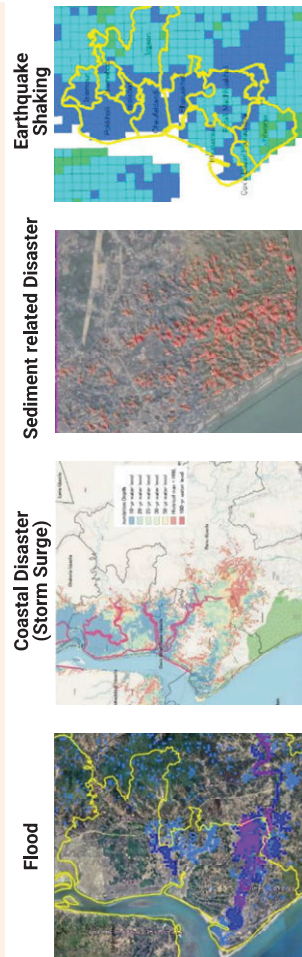
SFDRR and the Importance of Local DRR Strategy

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Feature 1

Scientific Analysis for Local Hazards

The hazard maps were developed by simplified technical analysis, which processes are not adopted in the Community Risk Assessment (CRA), using observed records of rainfall and tidal level, the Digital Elevation Model (DEM), and current hazard maps. The developed hazard maps represent the vulnerable areas of the Upazila and help promote to objective understanding of the hazard potential.



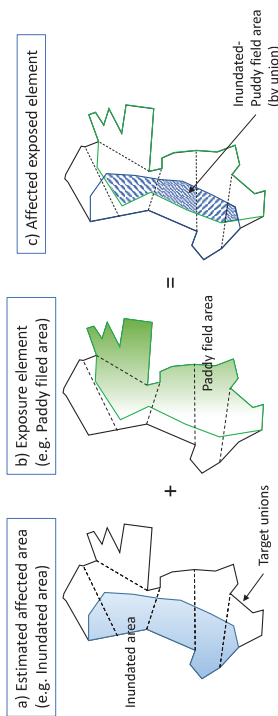
Introduction of the UzDRRPs as a Risk Reduction Action Plan (RRAP)

12

Setting DRR Targets based on Risk Quantification

Risks in this Upazila were quantified based on risk quantification using the hazard maps and various factors, namely population/households, paddy fields, and public facilities, and visualized to share with relevant agencies. A DRR target was set in consideration of the result of identifying which areas are highly affected by potential hazards, by these risk quantifications.

Image of Risk Quantification



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Introduction of the UzDRRPs as a Risk Reduction Action Plan (RRAP)

Key Contents

Benefit of Formulation of UzDRRP

By formulating the UzDRRP, there are several benefits, not only for the local authority and the community members but also for DDM and central government institutions.

I. More available reasonable information on Hazard risk

- Sharing the same risk information among DRR-related agencies can promote a common understanding of the DRR-related issues and disaster scenarios in the area and the visions to effectively tackle the situation among them.
- Reasonable and reliable information on hazard risk can encourage the involvements of different sectorial agencies which have not been familiar with and accustomed to carry out projects in consideration of DRR.
- Illustrating the scientifically analyzed hazard risks can also lead local communities to appropriately prepare for the disasters

Introduction of the UzDRRPs as a Risk Reduction Action Plan (RRAP)

Involvement of Project Implementing Agencies

Involvement of DRR project implementing agencies is essential to formulate and implement the UzDRRPs. The Upazila Sub-Committee (UzSC), which is composed of the Upazila chairman, UNO, PIO, engineers from LGED, BWDB, and DPHE in the Upazila, Upazila officials, Union Parishad chairman, was established to identify disaster risks and consider priorities of DRR countermeasures. At the central level, the members from the different line ministries are also involved in the planning processes to promote the implementation of the DRR countermeasures in the UzDRRP and secure budgets.

Image of Meetings and Workshops where project implementing agencies attended



Introduction of the UzDRRPs as a Risk Reduction Action Plan (RRAP)

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Key Contents

Benefit of Formulation of UzDRRP

By formulating the UzDRRP, there are several benefits, not only for the local authority and the community members but also for DDM and central government institutions.

II. Promote cost-efficient disaster management

- Illustrating and prioritizing necessary DRR measures with information of expected implementing agencies can encourage each agency to understand their role and promote actual implementation, which can accelerate the pre-disaster investment in each area.
 - Investment to the disaster prevention, such as installing permanent embankments against flood instead of putting sand-bags temporarily on the riverside, can reduce the cost of disaster response and recovery. It then enables DDM and DMC to transfer their limited financial resources to much more vulnerable areas. Eventually, more lives would be saved.
- UzDRRP can assist DDM and other implementing agencies in understanding required funds and time frames, and in easily monitoring the implementation status of the project.

Introduction of the UzDRRPs as a Risk Reduction Action Plan (RRAP)

Key Contents

Benefit of Formulation of UzDRRP

By formulating the UzDRRP, there are several benefits, not only for the local authority and the community members but also for DDM and central government institutions.

III. Appealing to international society on DRR progress in Bangladesh

- Compiling the DRR plans by DDM shall help MoDMR and Planning Commission to monitor the progress of DRR at national level.
- The disclosure of the progress of DRR as a monitoring of administrative execution of the GoB would lead line ministries and international donors to get much more attentions to DRR related developments.

Introduction of the UzDRRPs as a Risk Reduction Action Plan (RRAP)

Flow of the Development of the UzDRRP

As for the guidance of the process for UzDRRP formulation, the “8-Step” method which was compiled by JICA was used in the pilot upazila.

Flow of planning in the “8-steps” method



Introduction of the UzDRRPs as a Risk Reduction Action Plan (RRAP)

The “8-Step” method was formulated by JICA as a practical and feasible method to develop a local DRR strategy/plan with concrete measures for investment based on the idea of SFDRR.

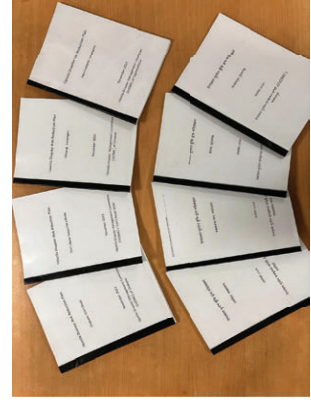
Example of UzDRRP formulation process from the experience in pilot upazila

Key Message:
Provide information on the **expected outcome of the upazila disaster risk reduction plan** and some example from the activities in the pilot upazila supported by the JICA project.

Example of UzDRRP

As of now, 4 Upazilas (Cox's Bazar Sadar Upazila and Chakaria Upazila in Cox's Bazar District, Chhatak Upazila and Jagannathpur Upazila in Sunamganj District) developed their UzDRRP.

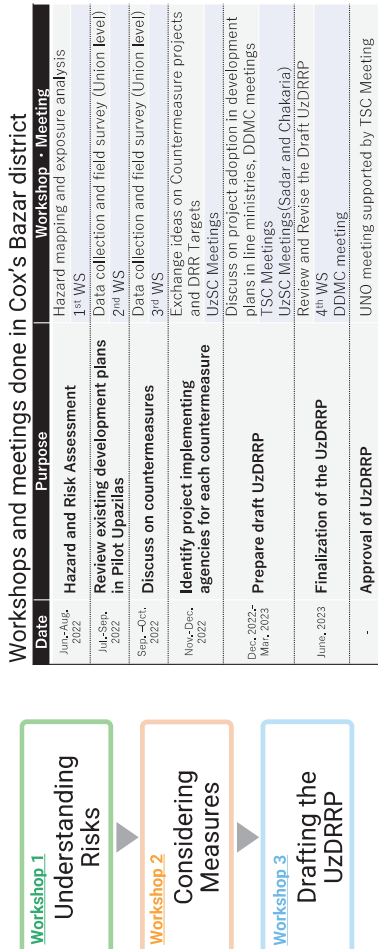
DDMC meetings and finalized UzDRRPs of 4 Upazilas



Example of UzDRRP formulation process from the experience in pilot upazila

Basic Flow of UzDRRP formulation

UzDRRP formulation was conducted by the following flow. Workshops and meeting of upazila sub-committee and technical sub-committee was conducted.

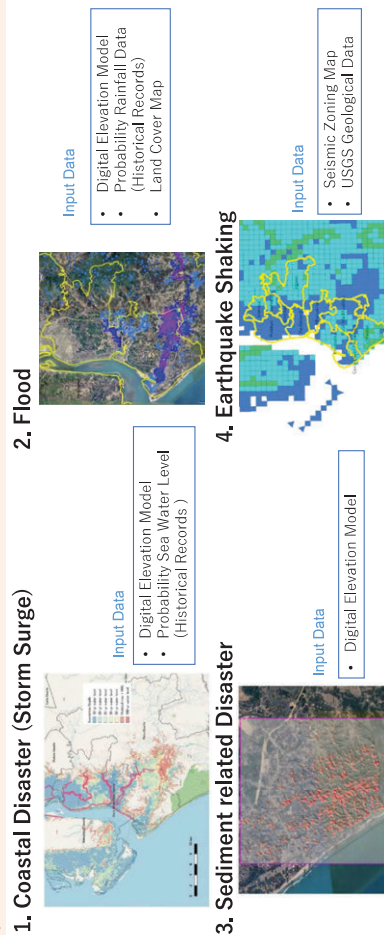


Example of UzDRRP formulation process from the experience in pilot upazila

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Hazard Map Formulation

Hazard map was formulated by a simplified technical analysis. Using the data show below for four types of hazard.



Example of UzDRRP formulation process from the experience in pilot upazila

22

Image of workshop (Disaster Risk)

Based on the Hazard Map, discussion was held among upazila and union members (UzDMC) to identify local disaster risk. Through the workshop, comments were collected as shown in the right map.

Photos and outputs from the Workshop to collect disaster risk information



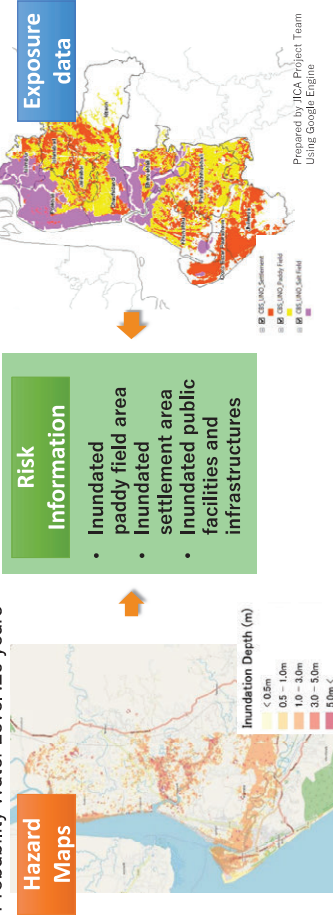
Example of UzDRRP formulation process from the experience in pilot upazila

23

Risk Assessment

For the quantitative risk assessment, GIS data for hazard map and landcover was collected. Below is an example of a case in Cox's Bazar on storm surge hazard.

Hazard Type: Storm Surge
Probability Water Level :20 years

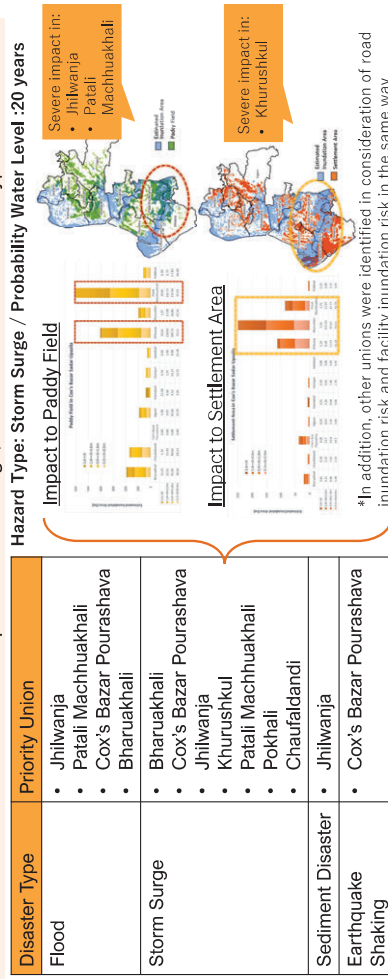


Example of UzDRRP formulation process from the experience in pilot upazila

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Identifying Priority Union

Based on the Result of the Risk Assessment, the union with sever expected disaster impact was identified. Below shows some examples of Storm Surge, but this was done for four types of disaster.



Example of UzDRRP formulation process from the experience in pilot upazila

DRR Target

Disaster Risk Reduction (DRR) targets were identified based on the disaster characteristics and disaster risk of the area.

Hazard	Draft Challenges in the Upazila		
	Short to mid term (Target Period of the Plan:10y)	Long-term	
Flood/ Water logging	- Reduce the inundation risk of DRR-related facilities by improving flood control in some priority areas and raising the land area of key facilities (e.g., government, medical care, education, and sanitation). - Reduce damage to people and assets (households, livestock) and maintain transportation networks by improving evacuation centers and major roads - Ensure early evacuation through warning	Reduce flood damage to the entire area, including administration and commercial centers, key infrastructures, residential areas, and agricultural lands, by improving riverbank protection and land use along the river.	
Char area	- Minimize damage to people and assets (property, livestock, etc.) and maintain transportation networks during flooding by improving evacuation centers and major roads, and uplifting DRR-related facilities (e.g., government, medical care, education, and sanitation) - Ensure early evacuation through warning	Minimize flood damage to specific areas and facilities (e.g., residential areas, administrative and commercial centers and key DRR facilities) by land raising and land use improvements.	
Inland	- Reduce the inundation risk of DRR-related facilities by improving flood control and drainage facilities in some priority areas and raising the land area of key facilities (e.g., government, medical care, education, and sanitation). - Reduce damage to people and assets (households, livestock) and maintain transportation networks by improving evacuation centers and major roads - Ensure early evacuation through warning	Reduce flood damage to the entire area by stormwater drainage facilities and flood control facilities.	

Example of UzDRRP formulation process from the experience in pilot upazila

Image of workshop (Countermeasures)

Necessary countermeasures and its priority was discussed. Through the workshop, information of countermeasure was collected and visualize as shown in the right map.

Photos and outputs from the Workshop to collect information on needed countermeasures



Example of UzDRRP formulation process from the experience in pilot upazila

Prioritized DRR countermeasures List

Prioritized projects was listed by types of the DRR countermeasures. Example image of counter-measures list is shown below.

Official Name of Countermeasures	Plan Status	Proposal/ Proponents	Direct Beneficiaries/ Interests to be protected	Estimated cost (Lac Tk)	Implement within Time Frame	Priority in Terms of Hazard Analysis	Remarks
Polder 66/3 (Khanglata)	Continuing	3,485 km Embankment Repair and Reconstruction (Proposed from Local People)	Pokkhali, Islamab ad, aladabad, Cha wlandan union	216	Short Term	High	BWDB verified and validated that the polder 66/3 needs to be repaired at full length (18,80 km). Maintenance work is already ongoing. Need to take initiative from the Technical Committee.
Polder 66/3 (Gomatal)	Continuing	7,425 km Embankment Repair or New Construction (Proposed from Local People)	Pokkhali, Islamab ad, aladabad, Cha wlandan union	460	Short Term	High	BWDB verified and validated that the polder 66/3 needs to be repaired at full length (34,457 km). Maintenance work is already ongoing. Need to take initiative from the Technical Committee.
66/1 Sea Dyke	New	2,275 km Embankment Repair or New Construction (Proposed from Local People & BWDB)	Khurushkul, Patali Machhuakhali Union.	160	Short Term	High	BWDB verified and validated that the polder 66/1 needs to be repaired at full length (5,045 km). Maintenance work is already ongoing. Need to take initiative from the Technical Committee.
U/B 16.5 KM	New	2,942 km Embankment New construction (Proposed from Local People & BWDB)	Jhilwanja Union	3,565	Mid Term	High	BWDB verified and validated that the polder 66/1 needs to be repaired at full length (16.5 km) with protection work. Need to take initiative from the Technical Committee.

Example of UzDRRP formulation process from the experience in pilot upazila

Example in Cox's Bazar Sadar	Key Contents
Example Table of Contents of UzDRRP	
Table of contents of the UzDRRP formulated in the pilot activity is as bellow.	
<u>Chapter-1. Introduction</u>	
1.1 Purpose and aim of the Plan	
1.2 Rationale for the formulation of the Plan	
1.3 Relevance to other Upazila plans	
1.4 Features of the Plan	
1.5 Methodology for the development of the Plan	
1.5.1 Institutional Arrangement	
1.5.2 Planning Process and Methodology	
<u>Chapter-2. Geographic, Socio-economic, and Meteorological Conditions</u>	
2.1 Location and Geographic Conditions	
2.2 Socio-economic Conditions	
2.3 Meteorological Conditions	
Example of UzDRRP formulation process from the experience in pilot upazila	29

Example in Cox's Bazar Sadar	Key Contents
Example Table of Contents of UzDRRP	
Table of contents of the UzDRRP formulated in the pilot activity is as bellow.	
<u>Chapter-3. Target Hazards and Disaster-prone Areas</u>	
3.1 Disaster Record of the Upazila	
3.2 Target Hazards of this Plan	
3.3 Hazard map and Disaster-prone areas by each hazard	
3.4 Disaster risk Assessment Result	
<u>Chapter-4. Disaster Risk and DRR Targets of the Upazila</u>	
<u>Chapter-5. Action Plan of DRR Countermeasures</u>	
Example of UzDRRP formulation process from the experience in pilot upazila	30