Country Experience on managing the risk of climate change & extreme weather

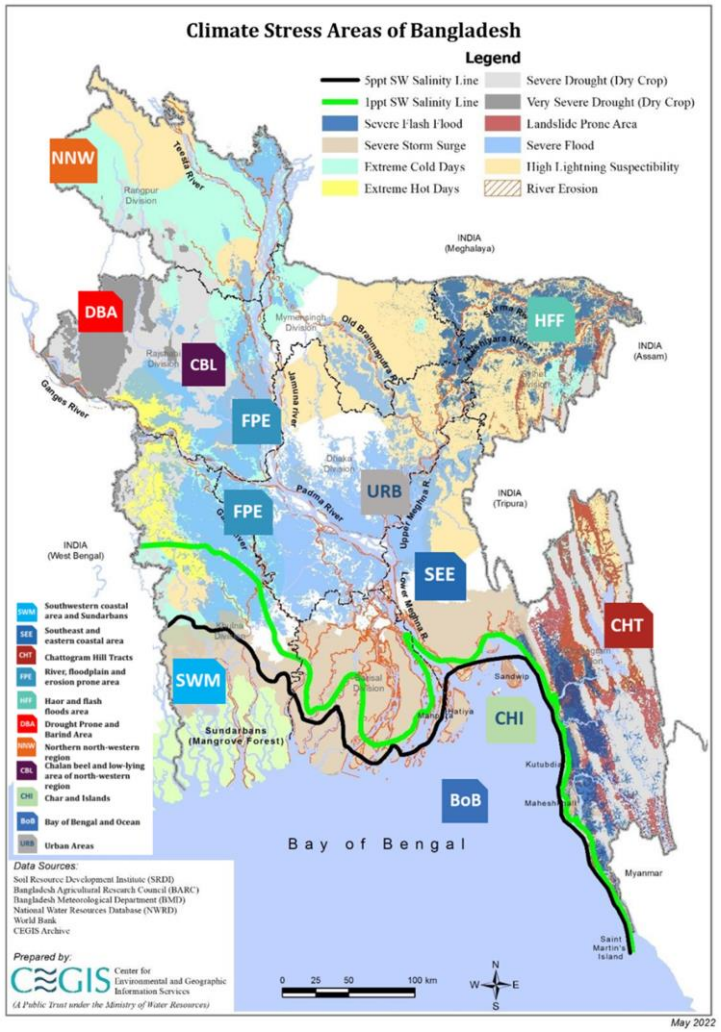
Prof. Dr. Tahmina Shirin, Director, IEDCR

Presentation Outline

- Present Situation of Climate Change and Extreme Weather Events
- Types of Flood Happening in Bangladesh
- Historical Floods in Bangladesh
- Flood Inundation Trend (1954 – 2024)
- Correlation between inundation and deaths
- Health and Health System Risks
- Some Flood Management Initiatives
- Challenges and Way Forward

Present Situation of Climate Change and Extreme Weather Events

Temperature in Bangladesh is rising sharply in the last three decades compared to previous three decades. Temperature variations were minimal (0.0067°C per year) during 1961-1990, the variations rose sharply (to 0.03°C per year) from 1991 to 2019. Rainfall is increasing at 8.4 mm/year with region specific spatial variations



Due to climate change

- Rainfall variability
- River flood
- Flash flood
- Rainfall flood
- Storm-surge flood
- Tidal flood
- Urban flood
- Sea level rise

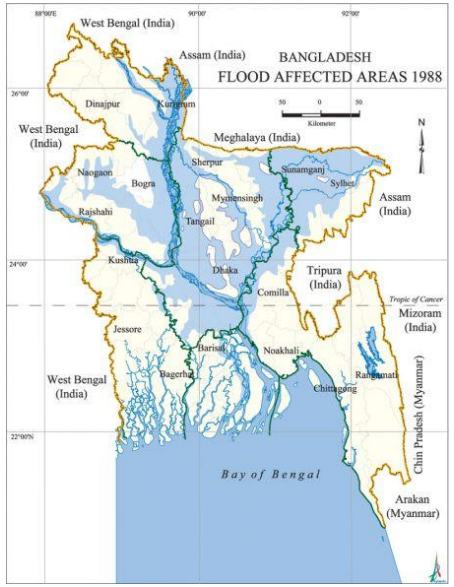
Flood prone districts in Bangladesh (30)

Kurigram; Jamalpur; Gaibandha; Sirajganj; Sunamganj; Tangail; Netrakona; Sylhet; Bogura; Faridpur; Pabna; Mymensingh; Habiganj; Madaripur; Moulvibazar; Sherpur; Kishoreganj; Manikganj; Shariatpur; Lalmonirhat, Satkhira; Khulna; Bagerhat; Jhalokathi; Pirojpur; Barguna; Patuakhali; Bhola; Barisal; Lakshmipur; and others.

Historical Floods in Bangladesh (1)

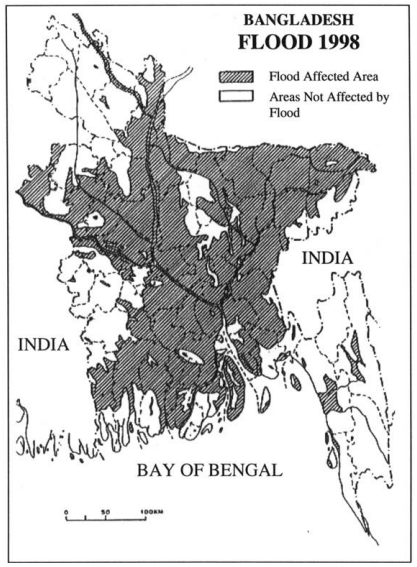
Heavy monsoon rains and river overflows caused Bangladesh's **1974 flood,** which affected Economy, scarcity of food affected over 30 million people and destroyed homes and crops.

The **flood of 1988**, which had also catastrophic consequence, occurred in August and September. The waters inundated about 82,000 square km of land, (about 60% of the area)

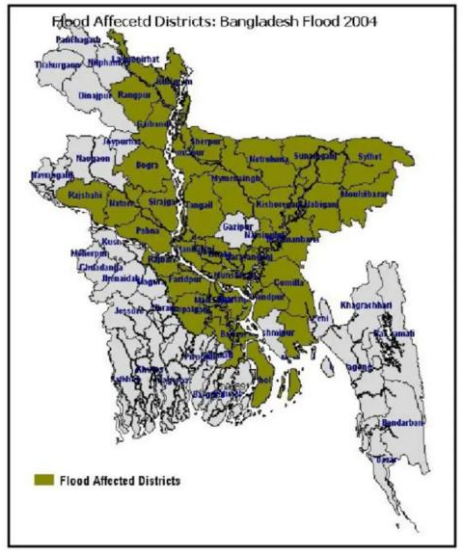


Historical Floods in Bangladesh (2)

1998 flood is one of the biggest floods in the nation's recent history. Thirty million people nationwide were impacted by the flood, which claimed 1,050 lives due to drowning, snake bites and flood related illnesses.

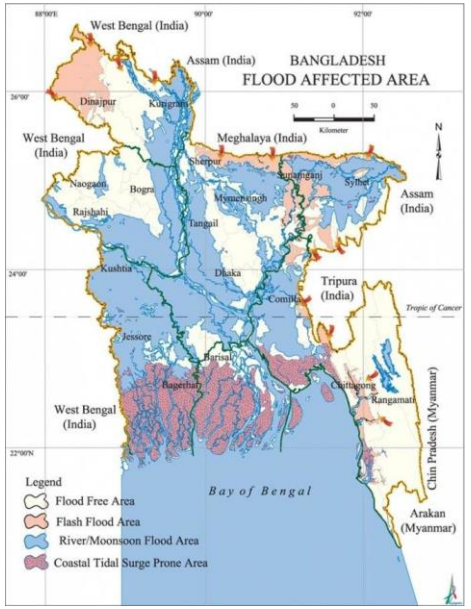


The **2004 flood** was very similar to the 1988 and 1998 floods with two thirds of the country under water. The flood caused many deaths, and leaving many people homeless. The entire flood lasted approximately 65 days.



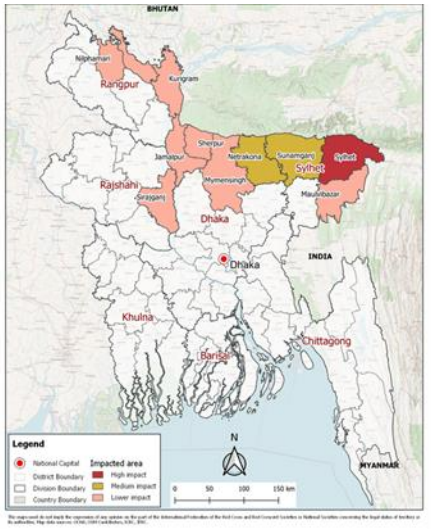
Historical Floods in Bangladesh (3)

In **July 2018,** the highways are submerged due to overflow of Sangu River's. In the month of July, Sylhet experiences two floods.



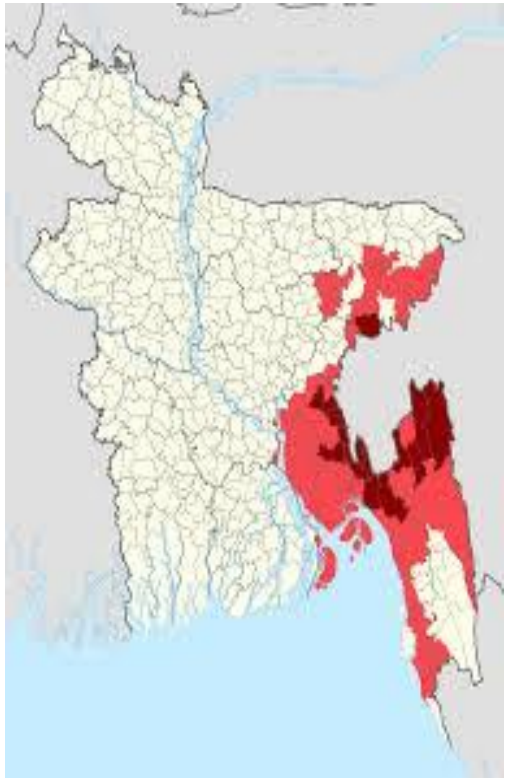
Flood in **2020** during COVID-19 pandemic

In **May and June 2022, two flash floods affected** the districts of Sylhet and Sunamganj (and to some extent the neighboring district of Netrokona) in a massive scale.

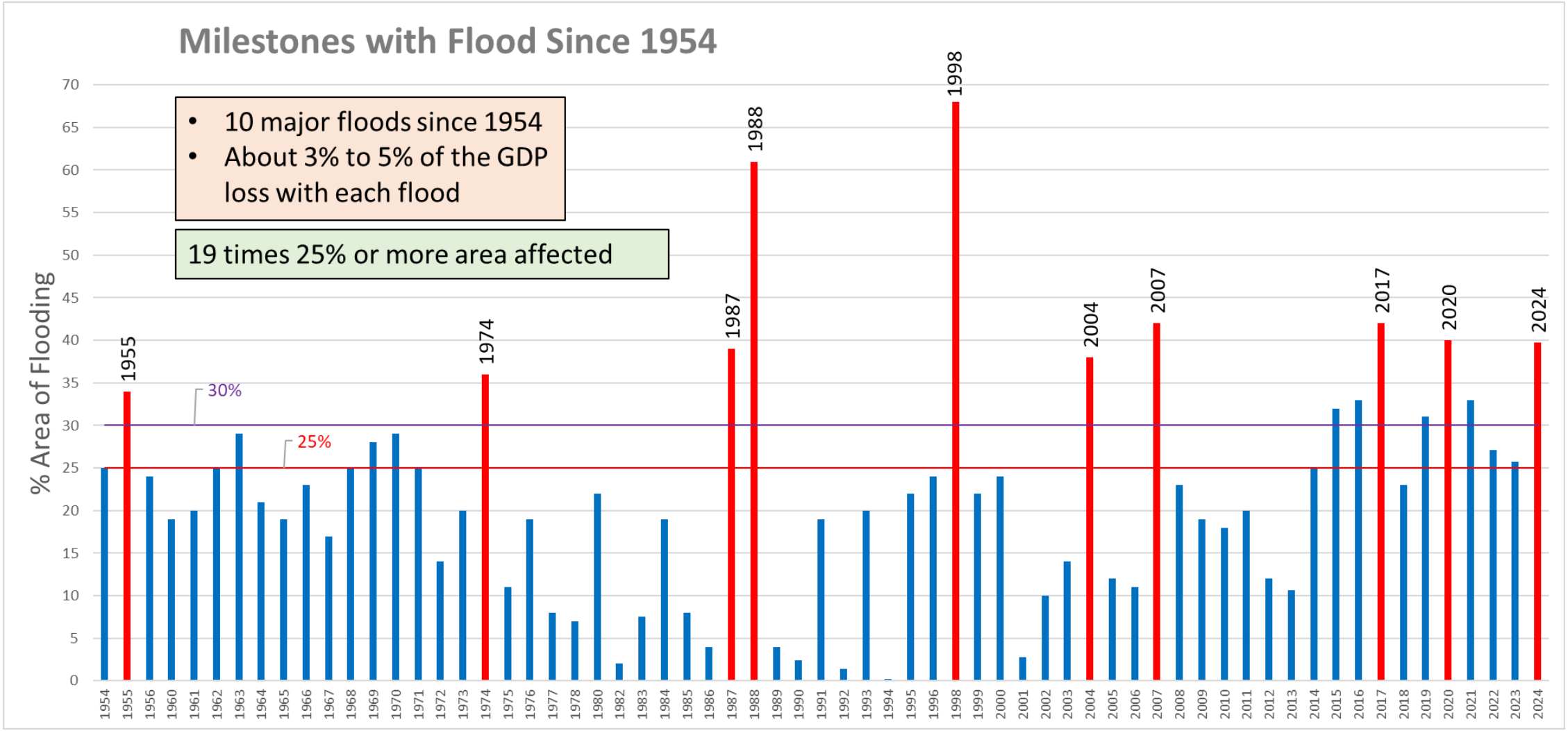


Historical Floods in Bangladesh (3)

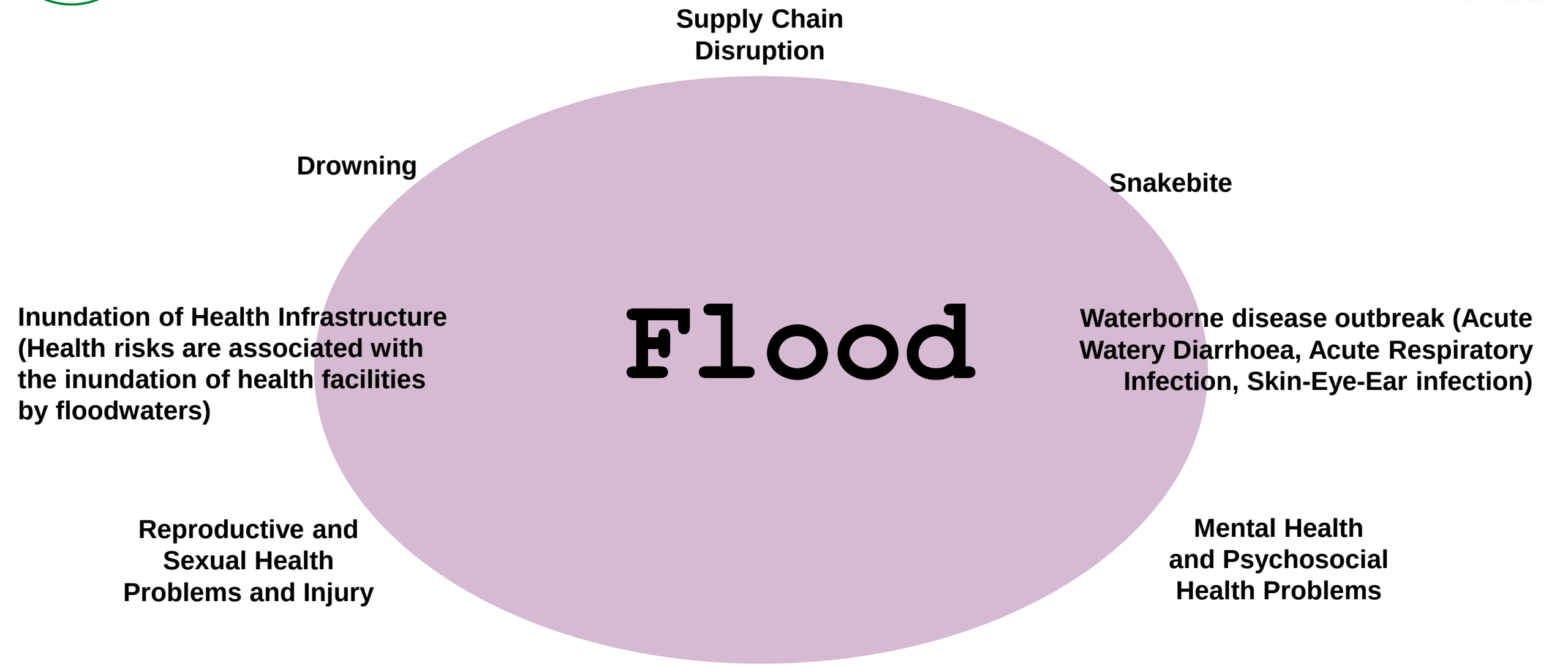
In **August 2024**, a catastrophic flood affected 11 districts in northeastern and southeastern part of the country, affecting 73 sub-districts. The flooding was caused by a combination of heavy rains and a surge of water released from a dam in Tripura, India. It is among the most severe flush floods in recent memory.



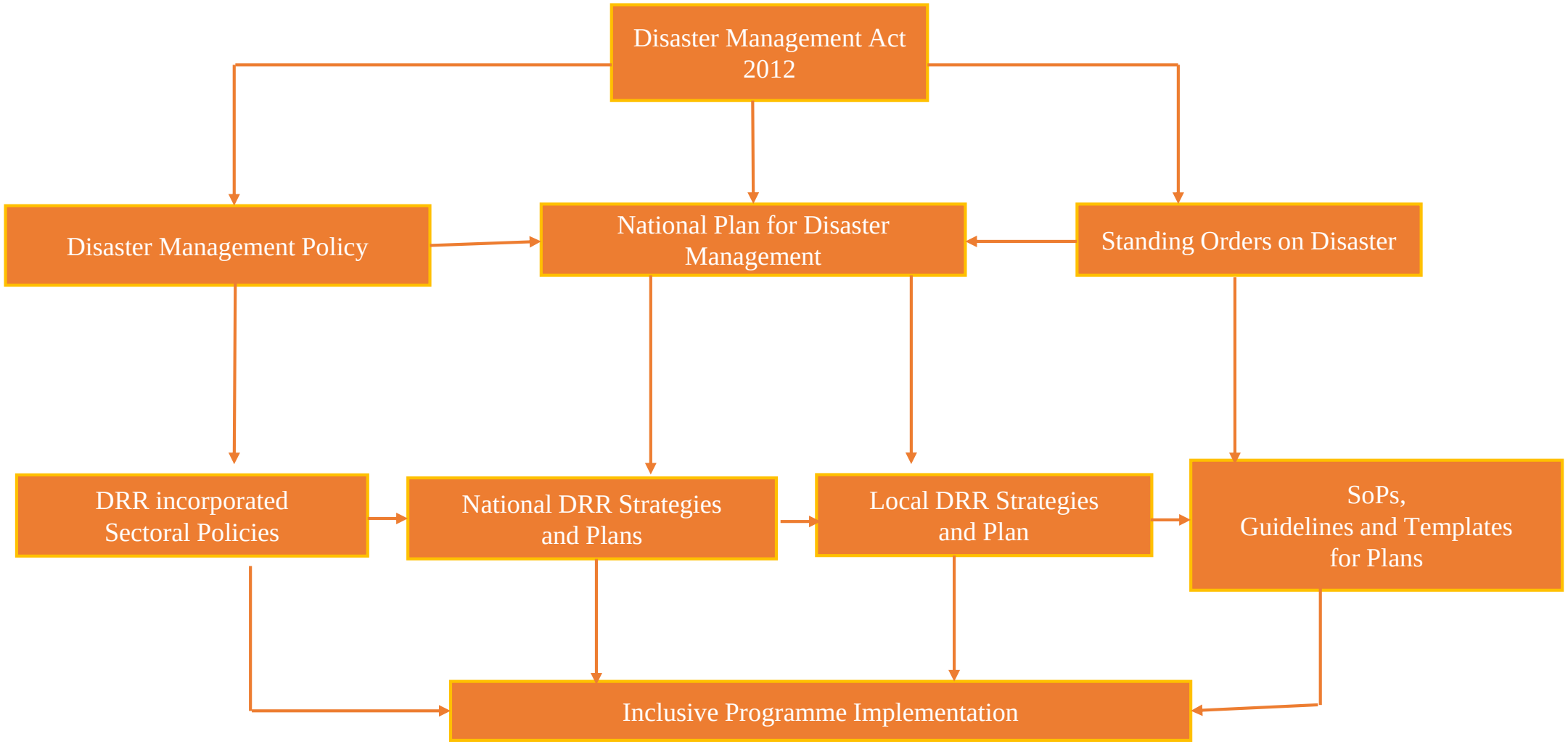
Flood Inundation (1954 – 2024)



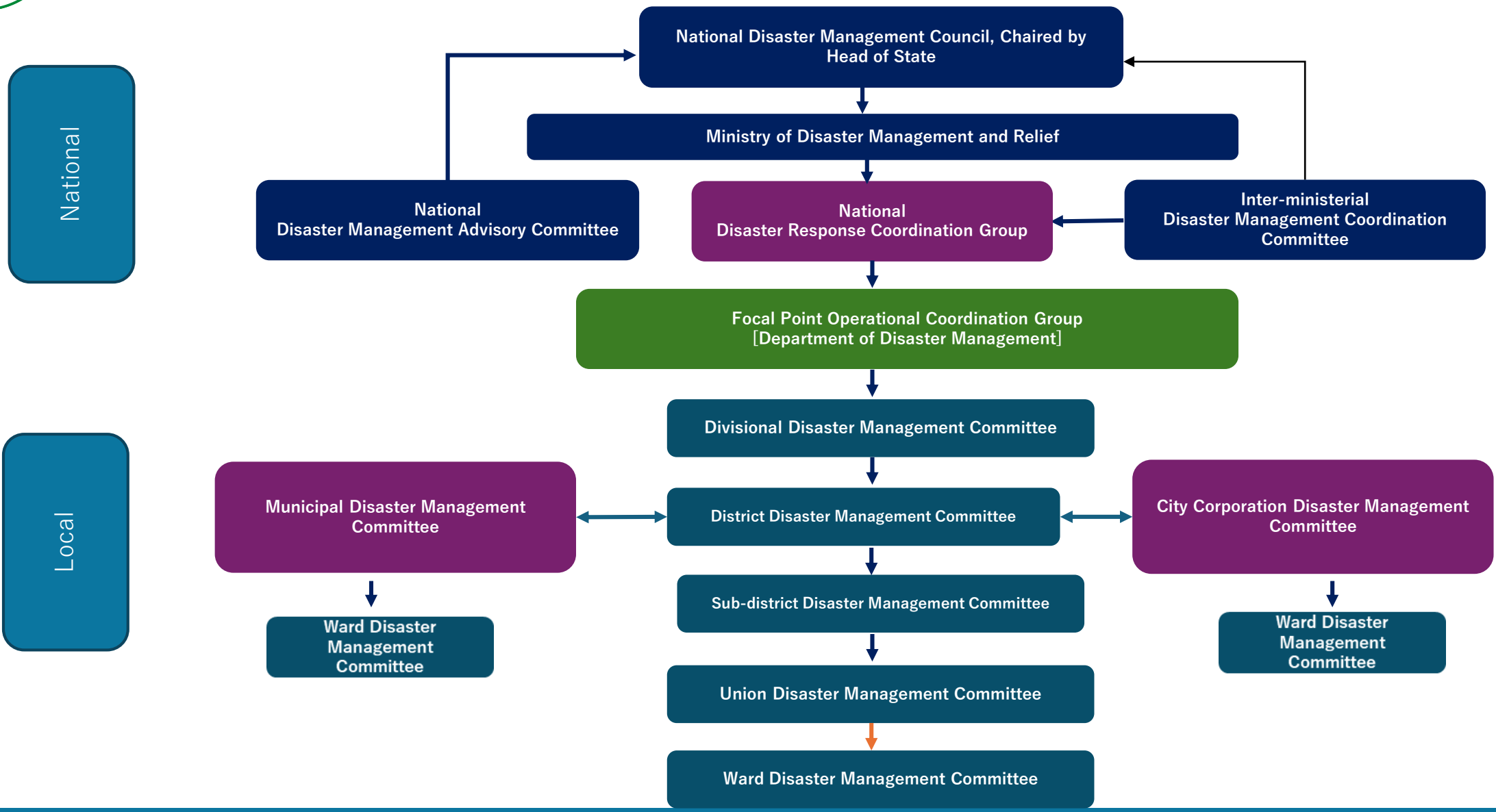
Health and Health System Risks



Regulatory Framework for DRM



Disaster Risk Management Structure, Bangladesh



Civil-Military Coordination and Disaster Management

- Essential dialogue and interaction between civilian and military actors in humanitarian emergencies
- Protect and promote humanitarian principles
- When appropriate pursue common goals
- Coordination is a shared responsibility, facilitated by liaison and common training.

Flood Management Initiatives

The country has

- Flood Management Strategy
- National Plan for Disaster Management
- National Water Policy
- National Water Management Plan
- The Flood Forecasting and Warning Centre
- Bangladesh Water Development Board (BWDB)
- Standing Orders on Disaster (SOD), a manual and guideline
- The Hospital Disaster Committee
- Other relevant stakeholders including, BRCS, IFRC, NGOs, UN agencies, DPs
- Non-structural flood management initiatives, including embankments, improved drainage systems, community-based approaches etc

Bangladesh: Role Model in Disaster Management

- Effective Early Warning Dissemination and Evacuation
- Dedicated 5 million Volunteers
- Dedicated Shelters
- Whole-of-society approach

Challenges

- ✓ Reaching to hard-to-reach area during flood.
- ✓ Limitations and inaccessibility of upper riparian countries' hydrological and meteorological data.
- ✓ Insufficient institutional capability and technical constraints on flash flood forecasting.
- ✓ Dissemination of flood message to the people in right time in appropriate manner.
- ✓ Budgetary limitations.

Thank You