Disaster Risk Management

Managing The Impacts of Extreme Weather and Climate Events

Workshop on Climate Change and Disaster Risk Management in Planning and Investment Projects

Session 8: Climate Change and Disaster Risk Management

27-29 June 2016
New Delhi

ADB

Objectives of the session

To Discuss

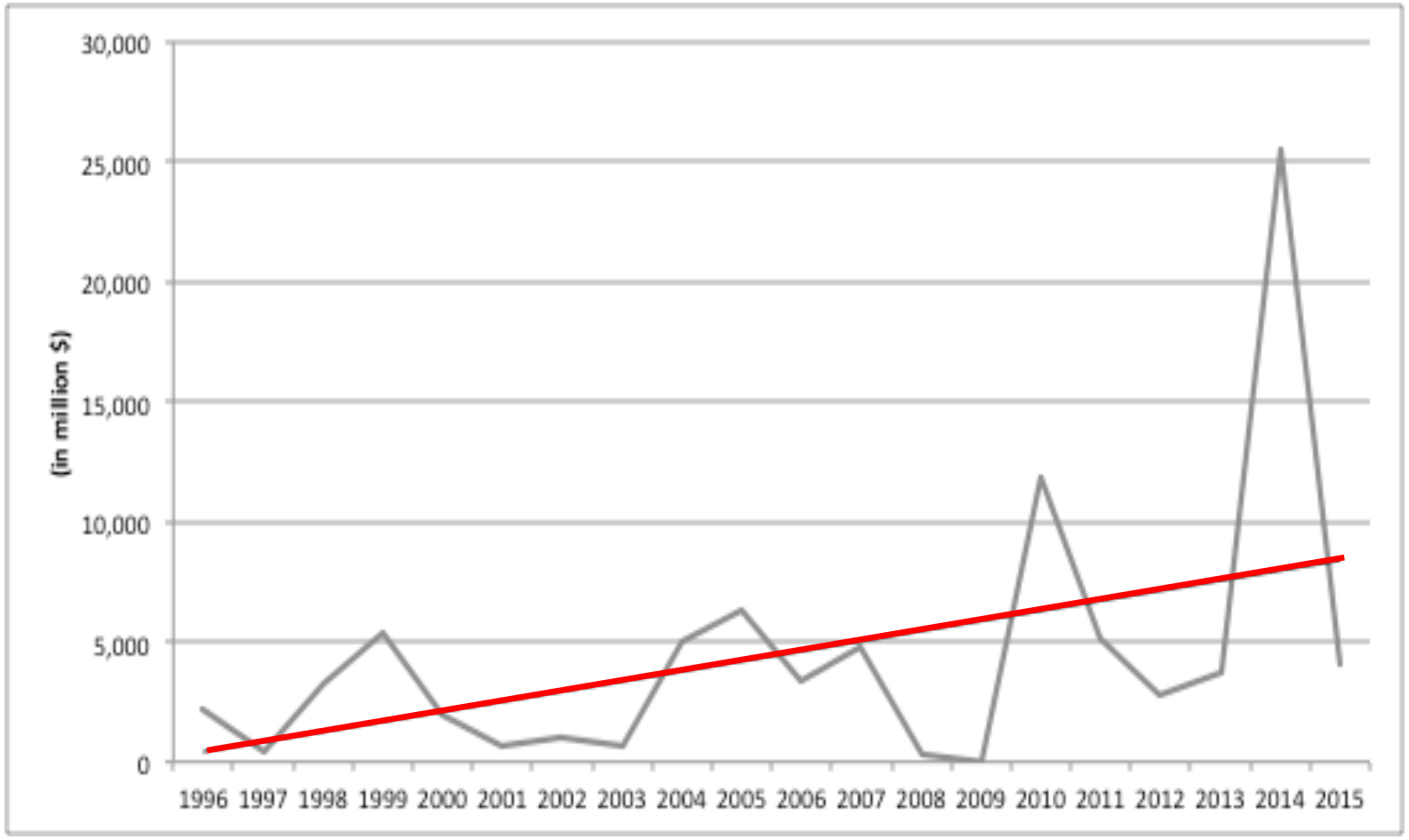
1. **Importance** of managing the potential impacts of extreme weather and climate events

2. **Interventions** for managing risks from extreme events

3. **Enabling environment** needed to manage risks from extreme events

Image Source: SERVIR GLOBAL

Disaster Risk – Direct Physical Losses



Source: EM-DAT data

Disaster Risk - The Human Angle


Image Source: GIZ

- Maximum impacts felt by the **poorest members of society**
- **Present and immediate future** are the main concerns of the communities
- Need interventions with **common objectives** – development benefits in the near term and reductions in vulnerability over longer term

Disaster Risk – Changing Landscape

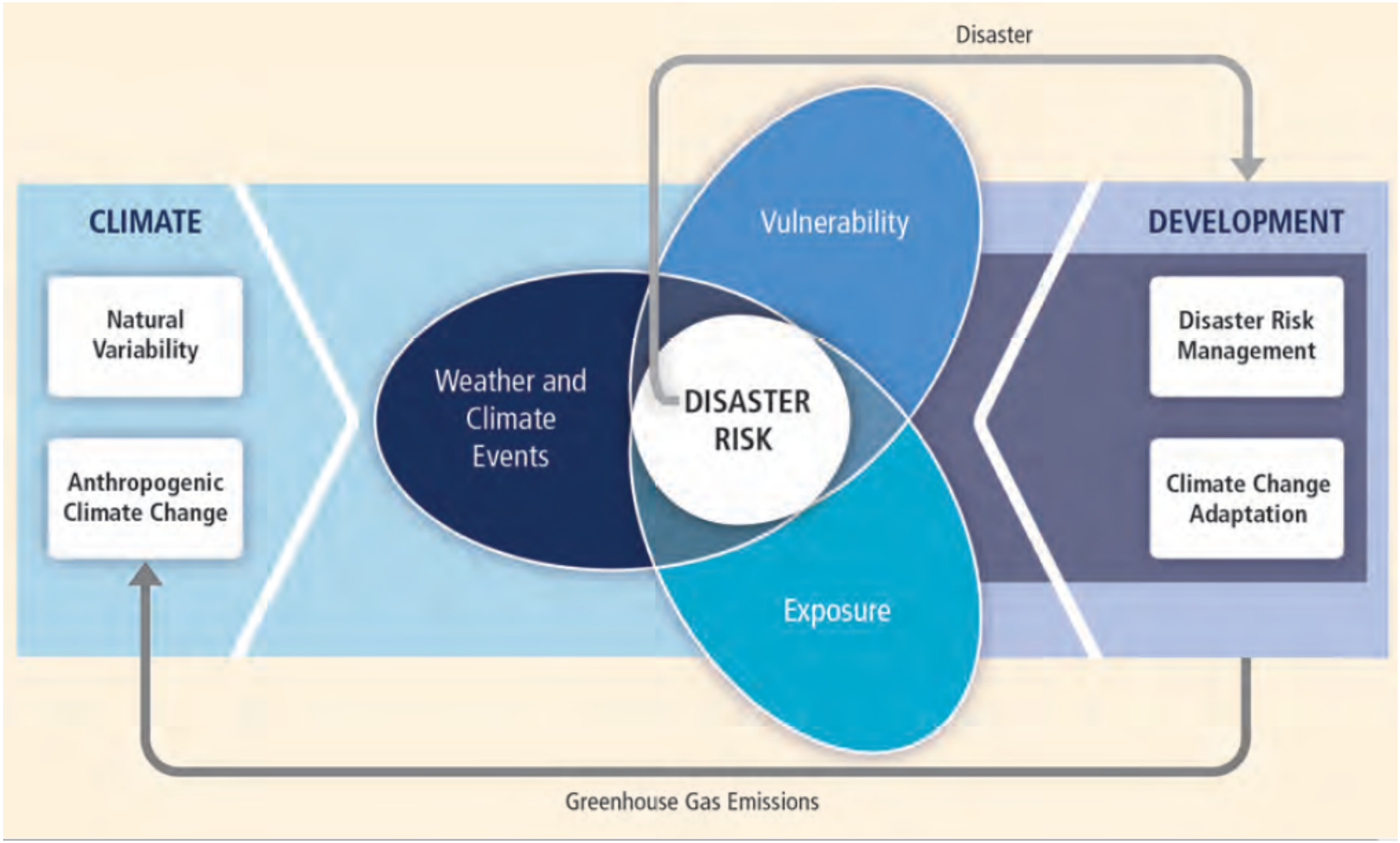


Figure Source: SREX, IPCC 2011

Interventions for Managing Disaster Risk - Principles

- Manage **risks** rather managing **disasters**
  - **Prevent /avoid** accumulation of future **risks**
  - **Reduce** existing risk
  - Manage **residual risk**

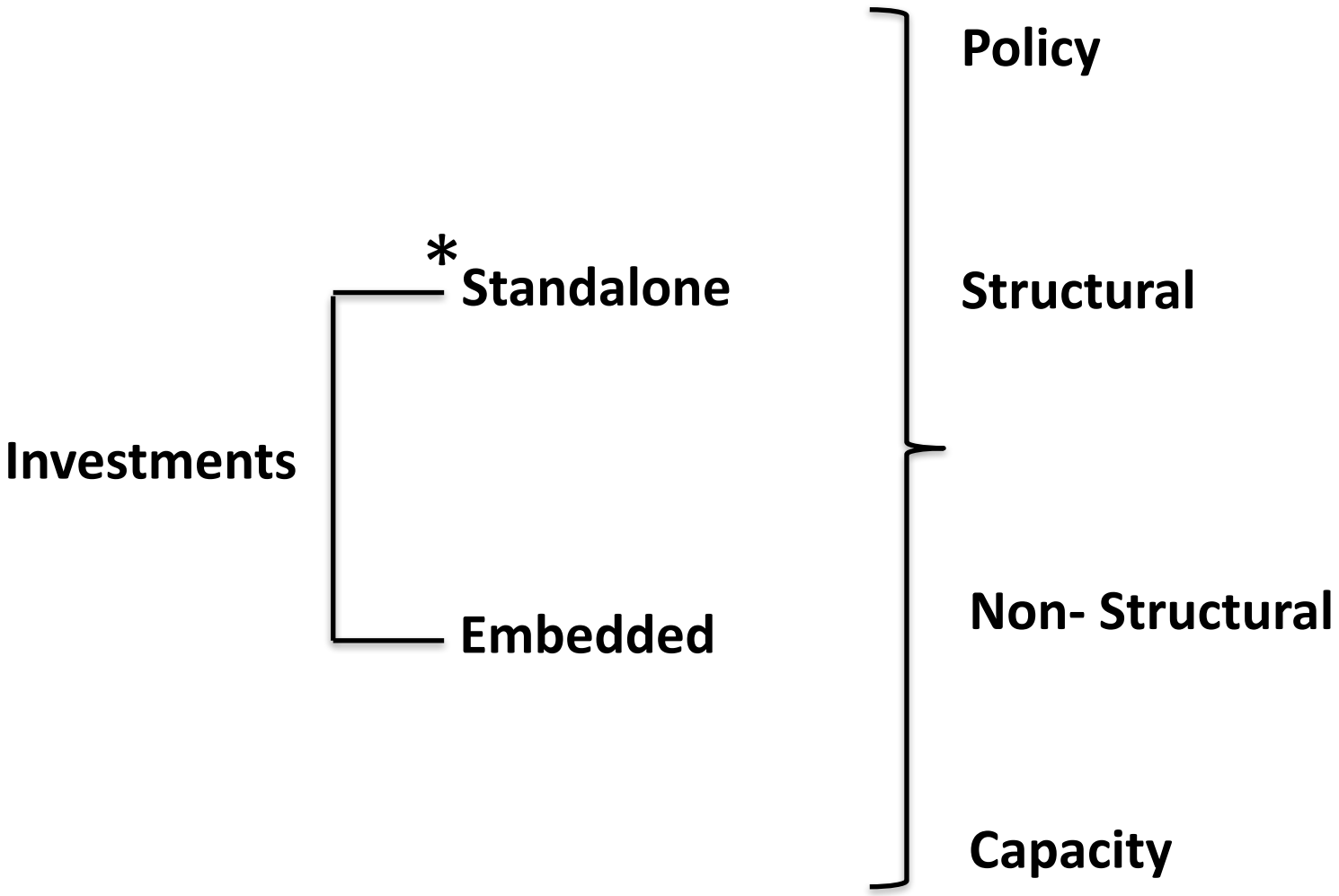
- Adopting **multi-hazards** approach

- Functions under a **range of uncertain conditions**

- **'No-regrets/Low regrets actions'**

Image Source: ADB

Interventions for Managing Disaster Risk - Types



Interventions To Avoid/Reduce Risk - Standalone

- **Objective - reduce disaster risk** (single hazard or multiple hazards)

- **Structural** (e.g. flood protection)
  - Can be very effective in reducing the vulnerability to hazards
  - Relatively high cost and inflexible (designed according to a scientifically defined impact)
  - If designed in isolation can transfer risk downstream
  - Can encourage additional investments in known hazard area

- **Non-structural** (e.g. livelihood diversification)
  - Closely linked with governance e.g. enforcement of regulations
  - Often rely on local and community investment e.g. maintaining common property resources

The present situation with the existing dike.

The dike is to be moved 350 metres inland.

An ancillary channel is to be dug in order to give the river more room. This will create an

Bridges across the ancillary channel.

Interventions To Avoid/Reduce Risk - Embedded

- **Objective** - Sector development. Disaster risk reduction concerns are factored as part of development project (new development /re-development/post-disaster reconstruction)

- **Structural** (e.g. raising roads to factor new flood return periods)
  - Robust – Withstand impacts of disaster events, incorporates safe failure, avoid over-reliance on single asset
  - Redundant – spare capacity created to accommodate disruption

- **Non-structural** (e.g. risk-sensitive land use planning)

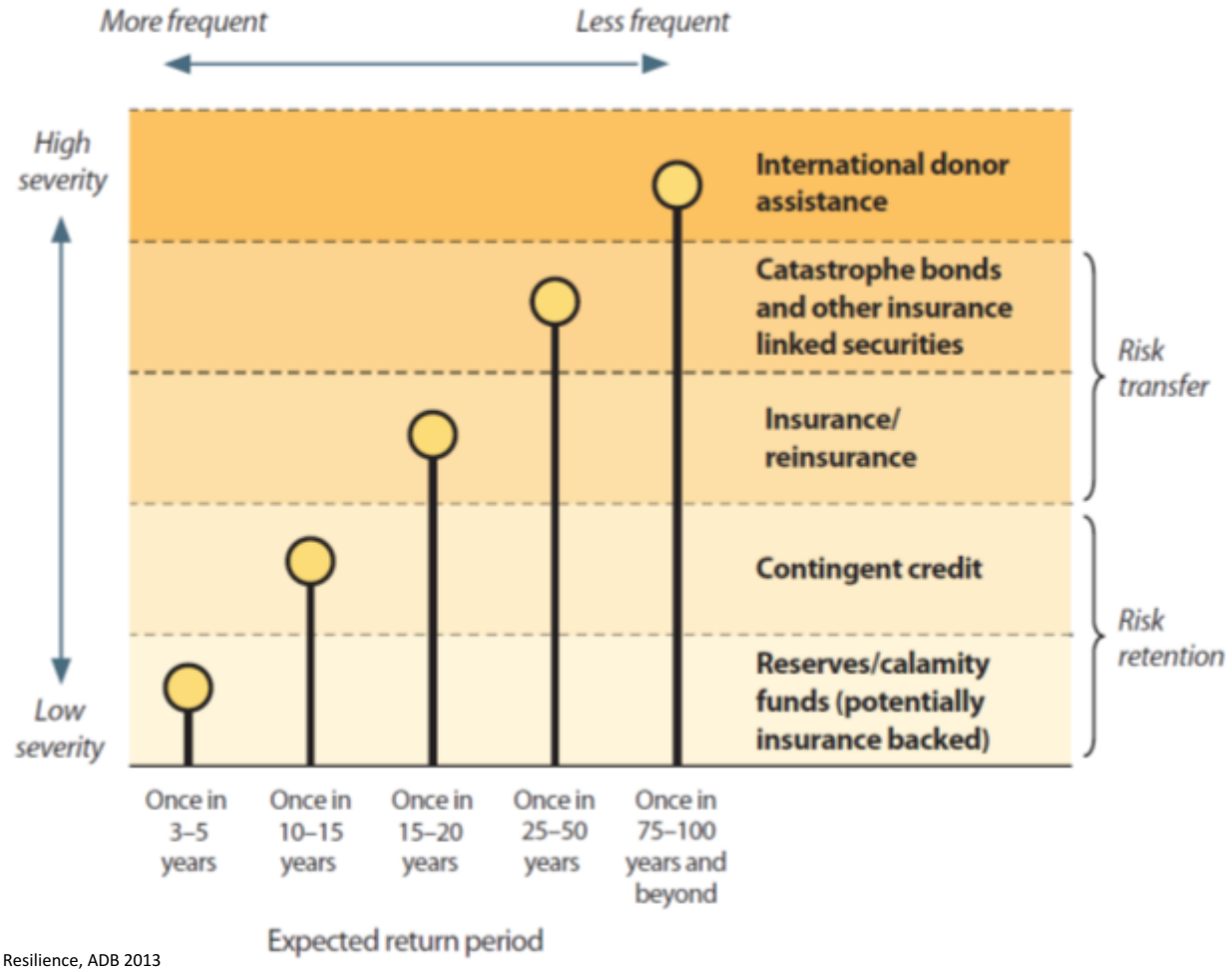
Interventions to Manage Residual Risk - Preparedness

- Primary objective **to be better prepared**
- **Structural**
  - Cyclone Shelters, Relief Warehouse
- **Non-structural**
  - Early warning Systems
  - Seasonal forecast for preparedness planning
  - Strengthening post-disaster response capacity
- Requires close **partnerships** with stakeholders involved in emergency management

Image Source: Bangladesh Red Crescent Society

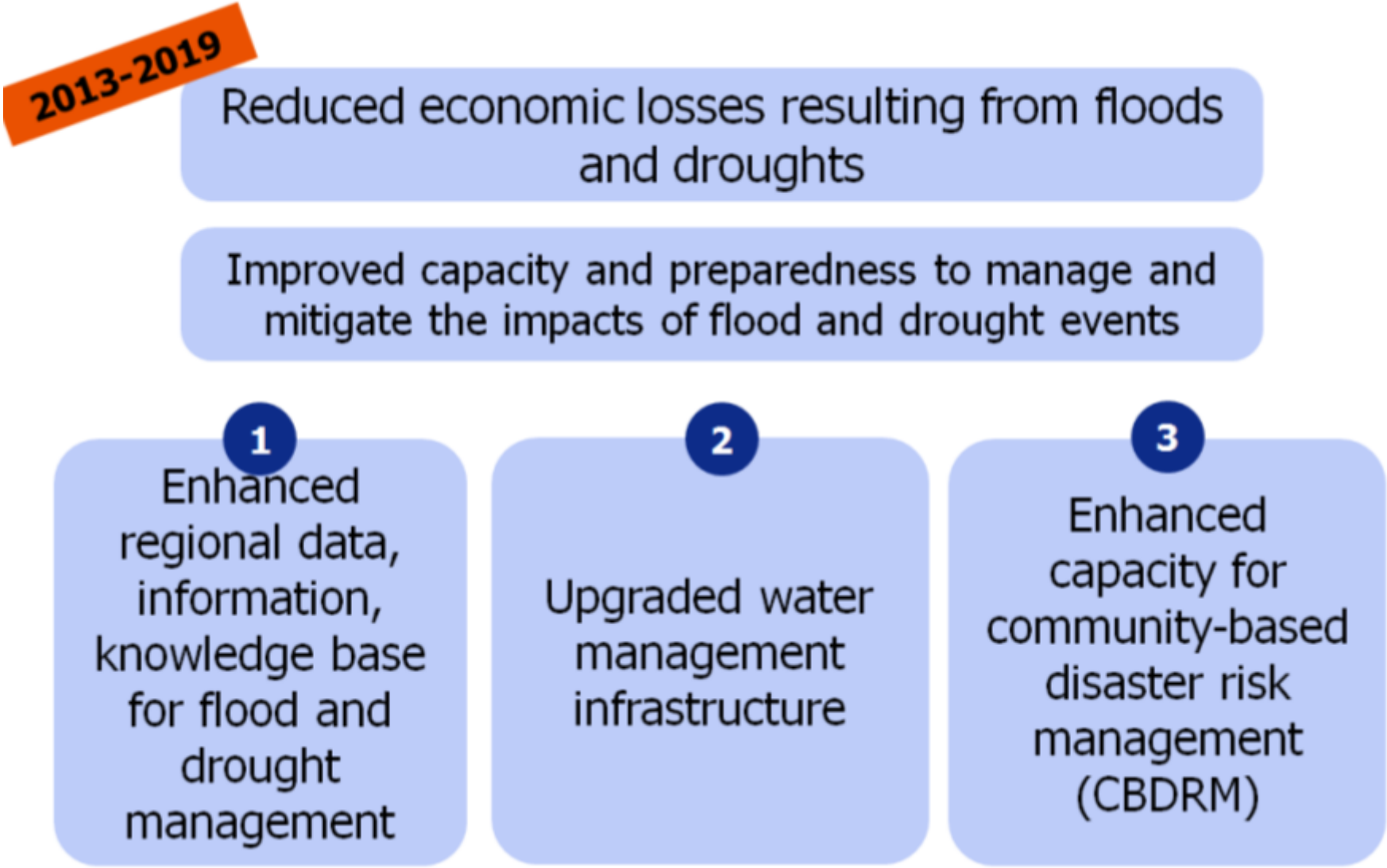
Interventions to Manage Residual Risk – Disaster Risk Financing

- Strengthen **ex-ante financial planning** for post-disaster response



Source: Adapted from Cummins and Mahul (2009), as presented in Investing in Resilience, ADB 2013

Example: GMS: Flood and Drought Risk Management and Mitigation Project



Source: S Teoh, ADB

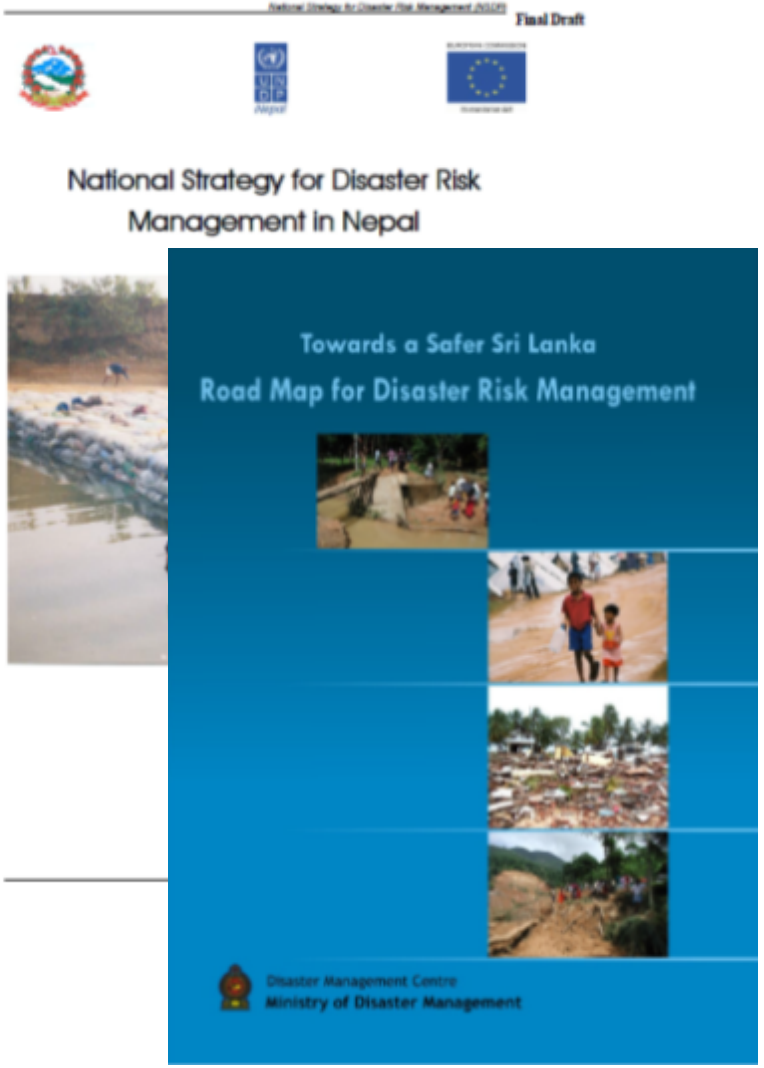
Example: Strengthening Resilience in Coastal Towns of Bangladesh

Image Source: ADB Photo Essays

- 8 towns with **infrastructure deficit**, **vulnerable to climate change**, poor capacity , weak **governance**
- **Lack of disaster preparedness** identified by communities as a reason for poor being more vulnerable
- DRM features embedded in project outputs
  - Improved **Climate-Resilient Municipal Infrastructure** (e.g. raised roads, cyclone shelters)
  - **Strengthened Capacity and Governance** (e.g. Capacity on risk-sensitive urban planning and construction)
- Institutional strengthening for DRM adopted as a **criteria for performance-based investment approach**

Enabling Environment - Legislation, Policies, and Programs

- South Asian countries have DRM **Legislation** - basis for declaring disasters, planning and budget appropriations, defining authority for emergency management duties
- Most countries have **policy framework and plans** to guide DRM implementation
- Some countries have **dedicated DRM programs** – Comprehensive Disaster Management Programme, Flood Management Program etc.
- Need for **increased linkages with CCA Planning and Programs** – NAPA, INDC, Strengthened role of National Hydro-met agencies



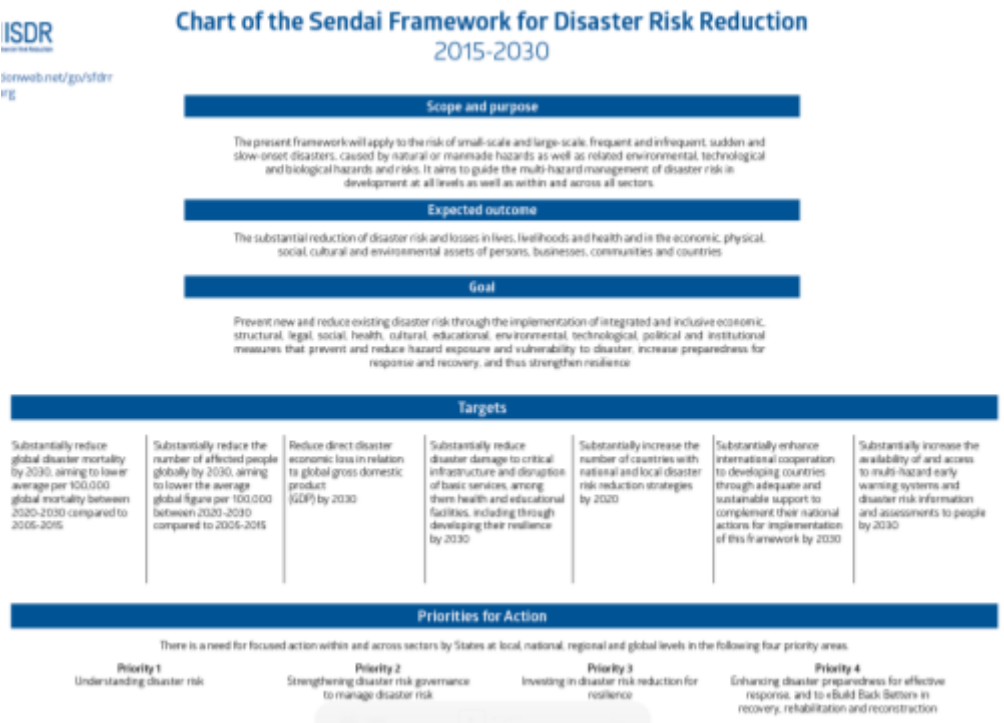
Enabling Environment - Institutional Set-up

- **National Disaster Management Offices** have a common history in civil defense/home affairs
- Differences in **status and institutional affiliations** – Ministries, Authority, Department, Division
- Differences in **roles** – coordination /operational; **and capacity** (especially at the local level)
- Multi-stakeholder engagement through **National Platforms** – Government agencies, Private Sector, CSOs
- Strengthened working relationships with **CCA focal agencies**

Image Source: Preventionweb.net

Enabling Environment - Regional and Global

- **Global**
  - South Asian countries endorsed **Sendai Framework for Disaster Risk Reduction**
  - 7 Targets and 5 Priority Areas



ISDR

sionweb.net/go/sfdrr
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Chart of the Sendai Framework for Disaster Risk Reduction
2015-2030

Scope and purpose

The present framework will apply to the risk of small-scale and large-scale, frequent and infrequent, sudden and slow-onset disasters, caused by natural or manmade hazards as well as related environmental, technological and biological hazards and risks. It aims to guide the multi-hazard management of disaster risk in development at all levels as well as within and across all sectors.

Expected outcome

The substantial reduction of disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries

Goal

Prevent new and reduce existing disaster risk through the implementation of integrated and inclusive economic, structural, legal, social, health, cultural, educational, environmental, technological, political and institutional measures that prevent and reduce hazard exposure and vulnerability to disaster, increase preparedness for response and recovery, and thus strengthen resilience

Targets

Substantially reduce global disaster mortality by 2030, aiming to lower average per 100,000 global mortality between 2020-2030 compared to 2005-2015	Substantially reduce the number of affected people globally by 2030, aiming to lower the average global figure per 100,000 between 2020-2030 compared to 2005-2015	Reduce direct disaster economic loss in relation to global gross domestic product (GDP) by 2030	Substantially reduce disaster damage to critical infrastructure and disruption of basic services, among them health and educational facilities, including through developing their resilience by 2030	Substantially increase the number of countries with national and local disaster risk reduction strategies by 2020	Substantially enhance international cooperation to developing countries through adequate and sustainable support to complement their national actions for implementation of this framework by 2030	Substantially increase the availability of and access to multi-hazard early warning systems and disaster risk information and assessments to people by 2030

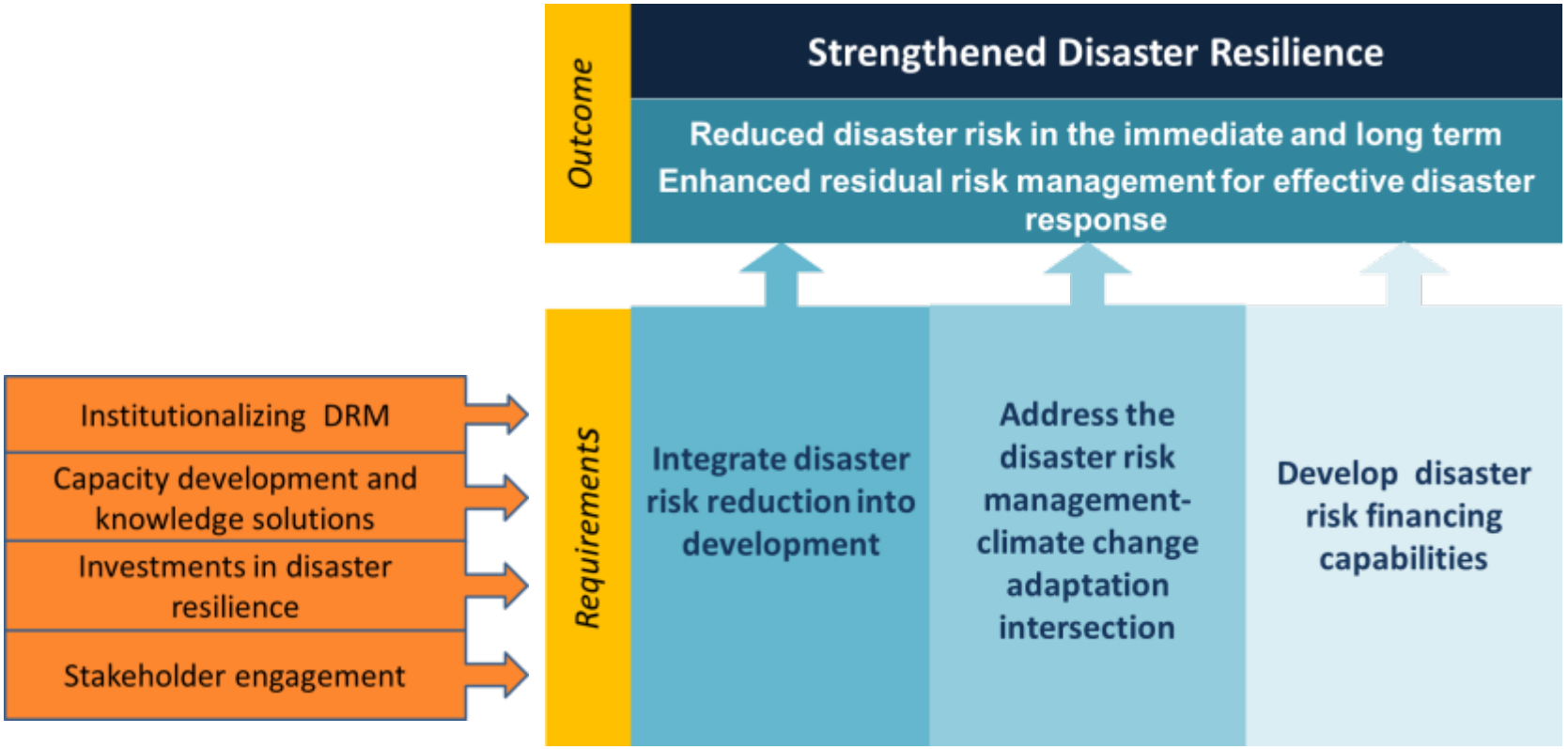
Priorities for Action

There is a need for focused action within and across sectors by States at local, national, regional and global levels in the following four priority areas.

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

- **Regional - SAARC**
  - Comprehensive Framework on Disaster Management, 2005
  - 3 thematic centers - Centre for Disaster Management , Coastal Zone Management Centre Meteorological Centre
  - Functions – Formulate policies, conduct research, facilitate knowledge, build capacity

ADB's Overall Approach to Strengthen Disaster Resilience



In conclusion

- Climate Change will have an impact on extreme weather events
- "Uncertainty should not be a reason for inaction" – investments must be made to **reduce vulnerability and exposure**
- Interventions should include a **portfolio of investments** to avoid, reduce and manage residual risk
- Interventions should equally strengthen **policy, institutions and capacity**
- Effective disaster risk management **facilitates climate change adaptation** and contributes to broader **resilience**

Thank you!