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Building Resilience for Sustainable Development: Regional Platform for Multi-hazard Early Warning System

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Disaster risk is outpacing resilience.

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Human cost significant

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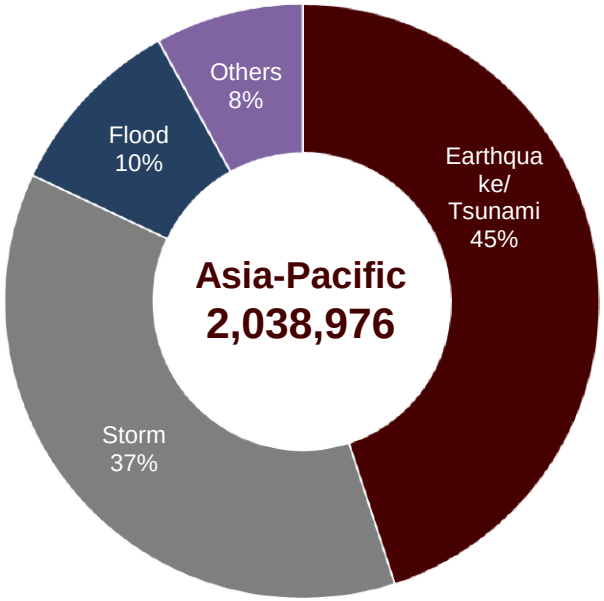
Sendai Framework on DRR
Target A: disaster mortality

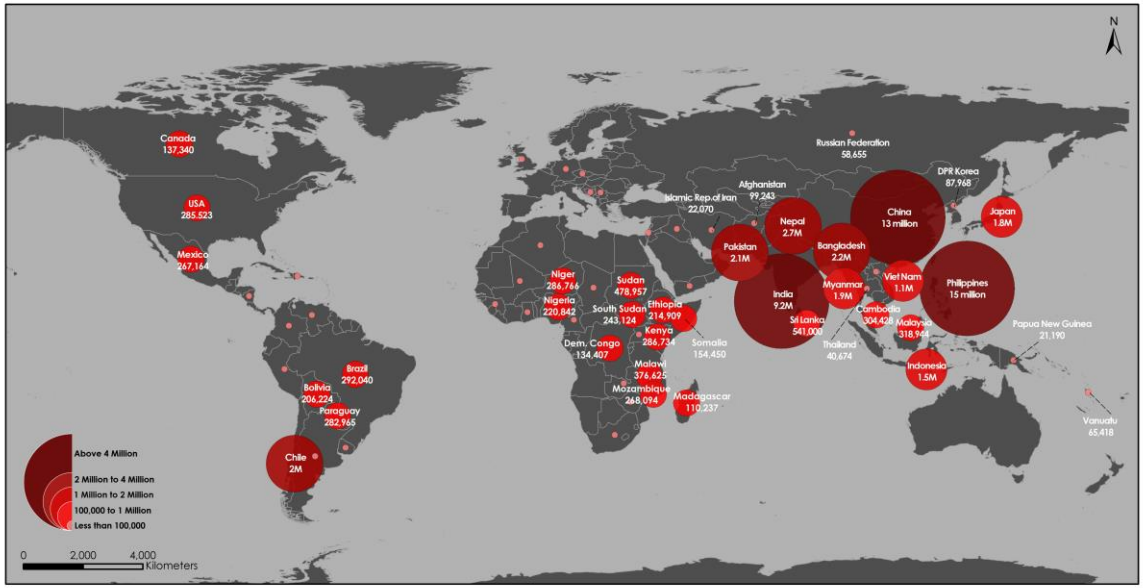
Fatalities from natural disasters, 1970–2016



- **2** million lives lost
  (56% of global fatalities)

Sendai Framework on DRR
Target B: affected people

New displacements associated with natural disasters, 2013-2015



- **87** % of people displaced by natural disasters
- **88** % of people affected in the world, since 1970

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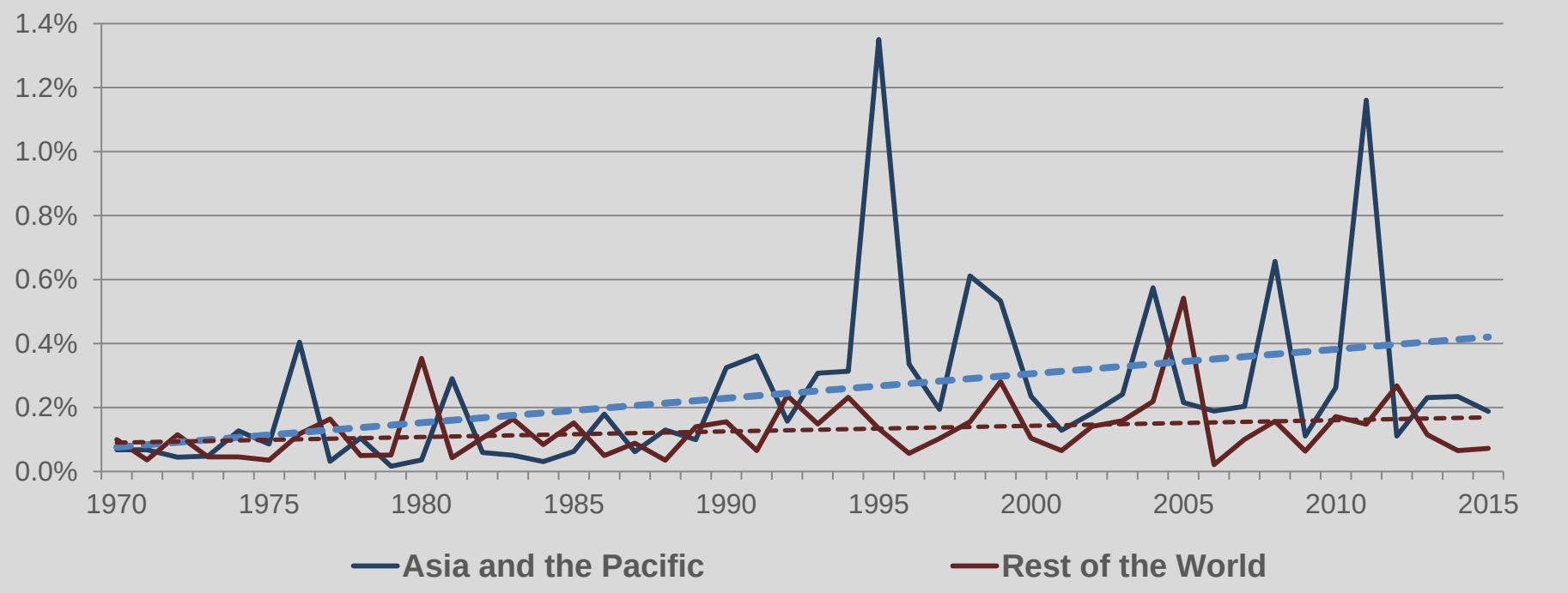
Economic cost rising

Sendai Framework on DRR
Target C: disaster economic loss

Estimated damage, as % of GDP, is rising in the Asia-Pacific region

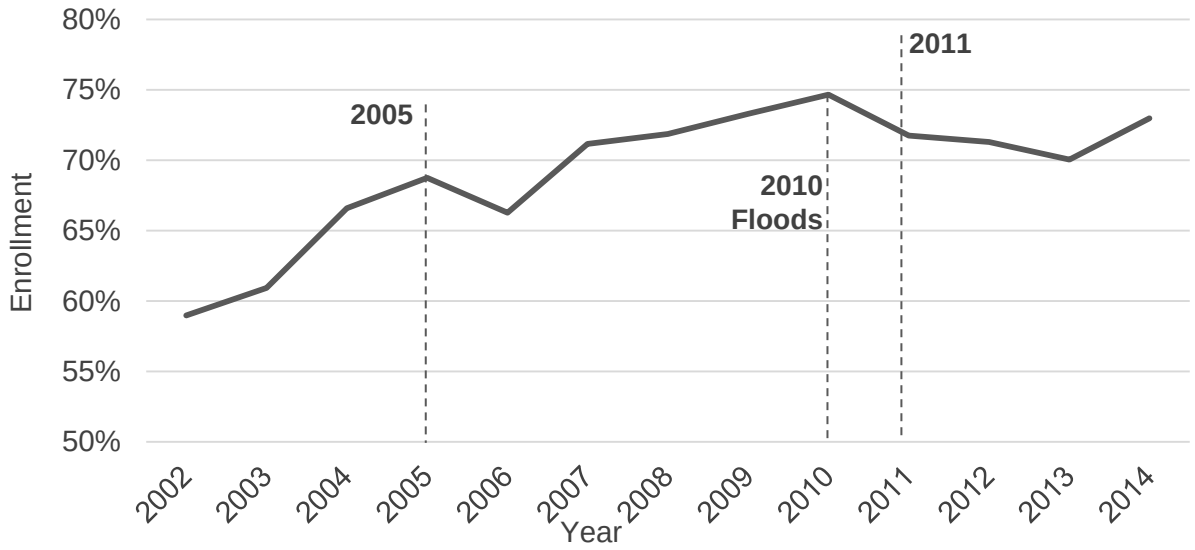


- **Economic cost: Asia-Pacific has lost $1.3 trillion due to natural disasters (1970-2016)**

Disaster can intensify poverty & inequality…

Sustainable Dev. Goals
In particular Goal1, 2, 9, 11, 13

- Human and asset losses tend to be greater in the poorest communities living in places and conditions that expose them to natural hazards.
- Disasters destroy many of their already meagre assets, trapping them in poverty that can be transmitted from one generation to the next.



Primary school enrolment dropped after disasters in Pakistan

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Disaster risks are transboundary

in their origins and impacts

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Transboundary flooding

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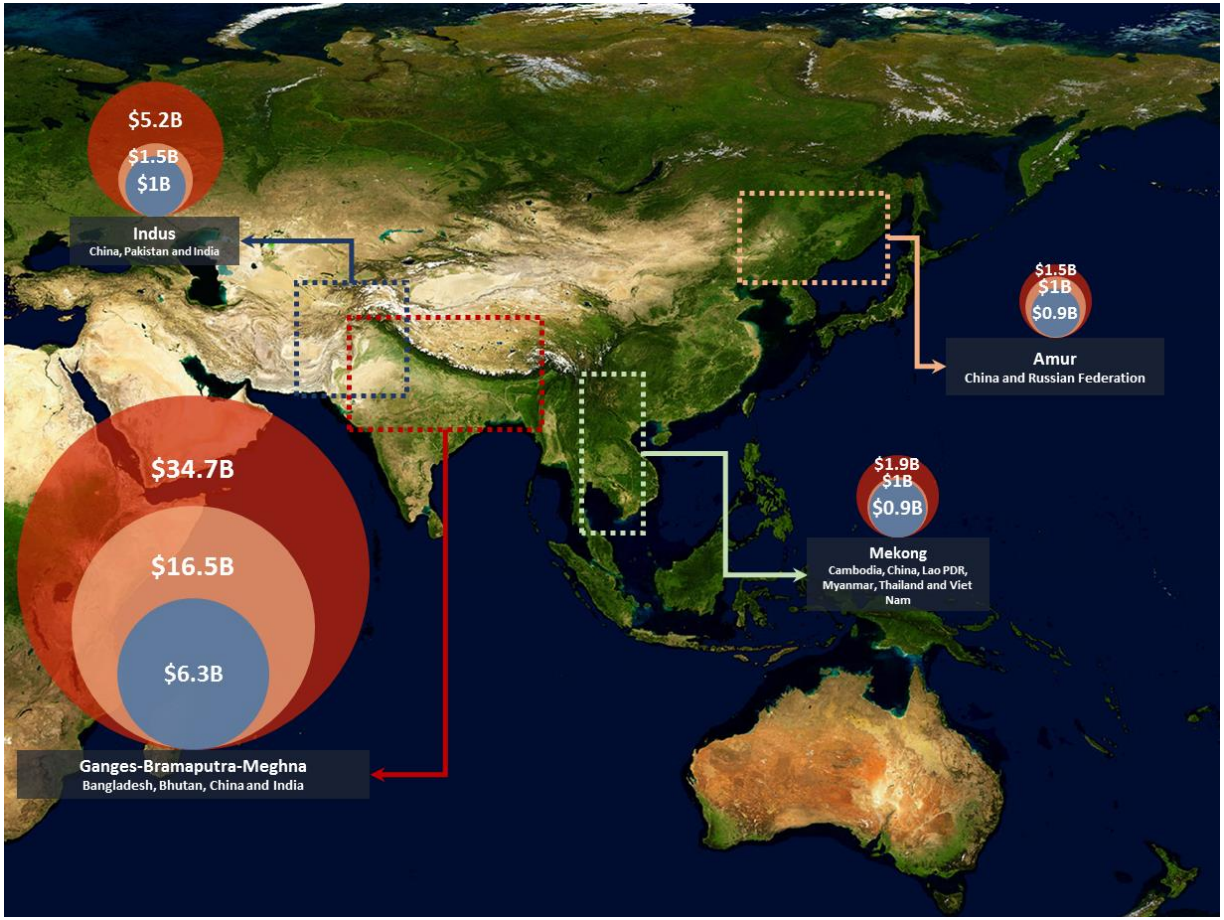
Transboundary flooding costs in major river basins, 2010 and 2030



Source: ESCAP (2018) Asia-Pacific Disaster Report 2017

A substantial increase in flood losses under both moderate and severe climate scenarios.

The transboundary flood losses will range from 1.2 to 6 times more in the major river-basins

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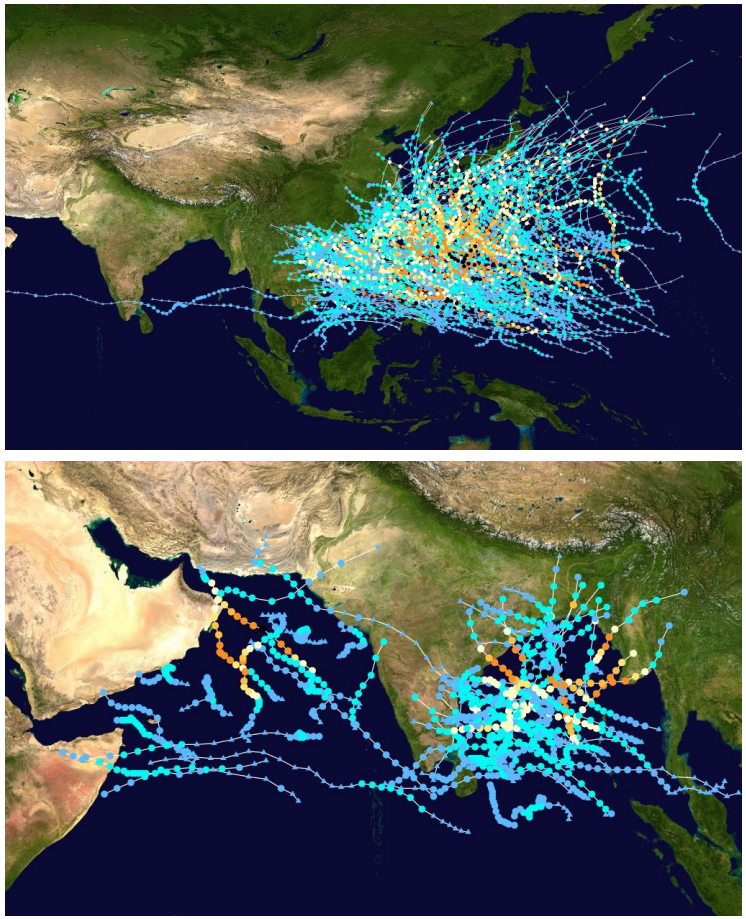
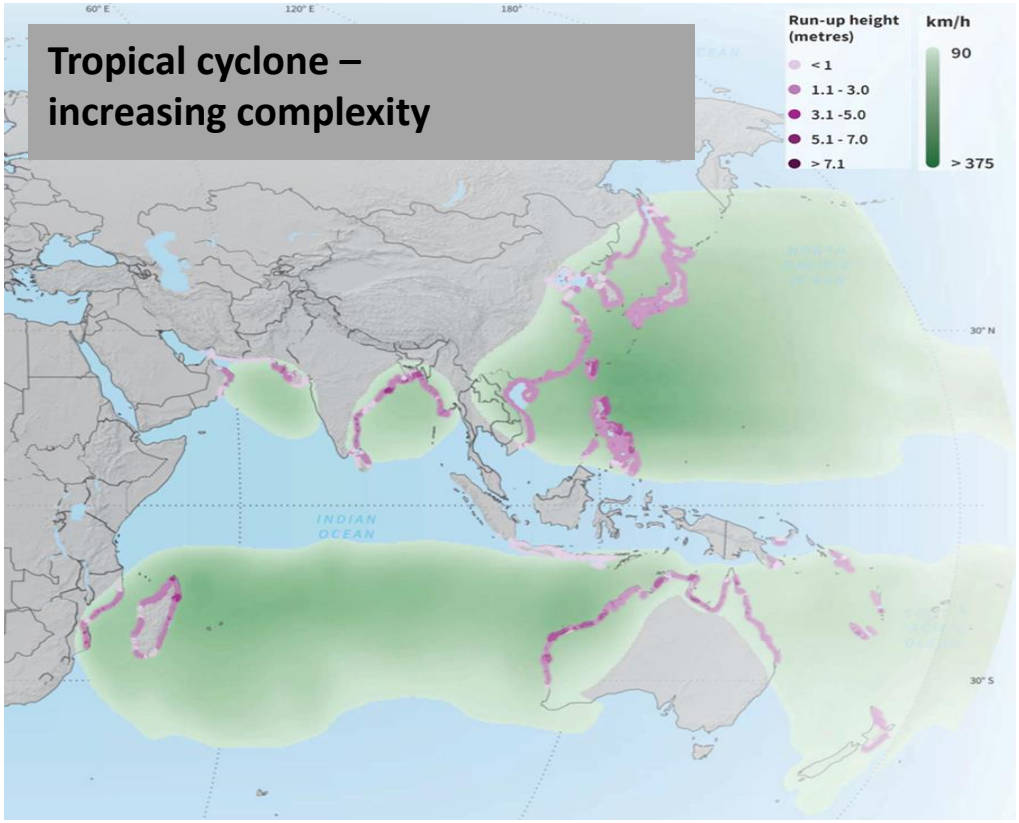
Tropical cyclones

Tracks of tropical cyclones 2005-2014



Source: ESCAP (2016) Asia-Pacific Disaster Report 2015



Source: ESCAP (2018) Asia-Pacific Disaster Report 2017

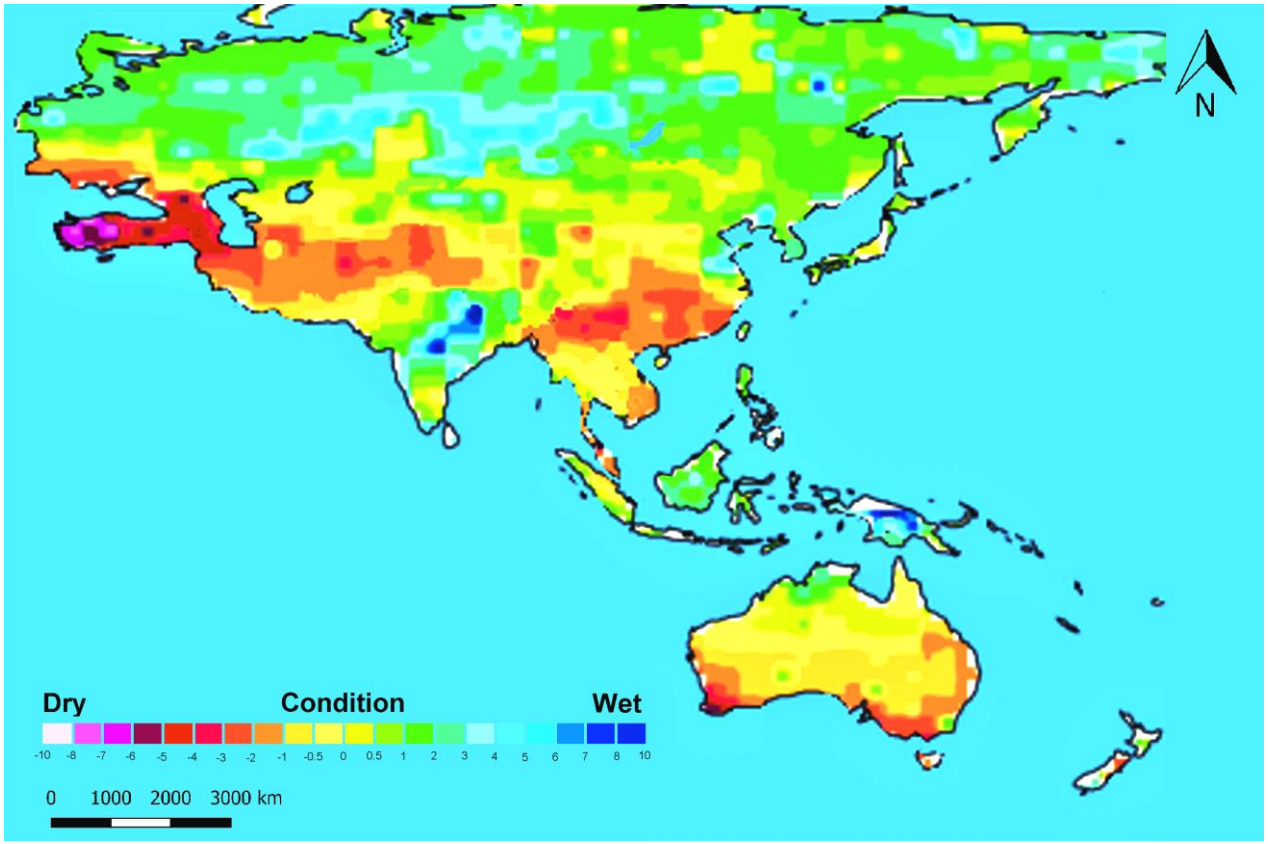
- Shorter return periods with increasing storm surges and wind speeds in many places
- In the Pacific basin, the track of tropical cyclones may shift eastward or northward.
- Significant increase in the number of people and economic assets exposed

Drought severity by 2030

Drought risk will increase substantially and there will be significant shifts in its geography.

In South Asia, westward shift and in South East Asia, eastward.

The new geography of drought can cause deep uncertainties on how to manage the risk.



Source: ESCAP (2018) Asia-Pacific Disaster Report 2017

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Regional actions are necessary to build resilience

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Regional roadmap for SDGs

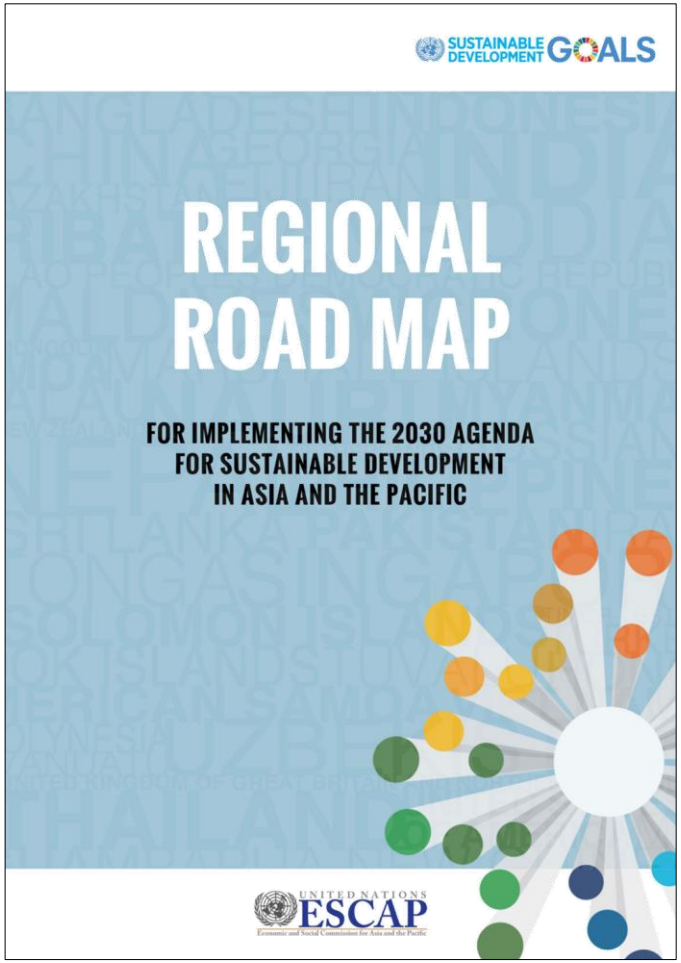
Disaster risk reduction and resilience is one of priority areas.

Opportunities for regional cooperation exist for disasters with transboundary origins/impacts

APDR 2017 findings show action is urgent on:

- Early warning systems
- Knowledge & data sharing
- Regional capacity building

Sendai Framework on DRR
Target E, F, G



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In particular, regional MHEWS are effective

Sendai Framework on DRR
Target G: MHEWS

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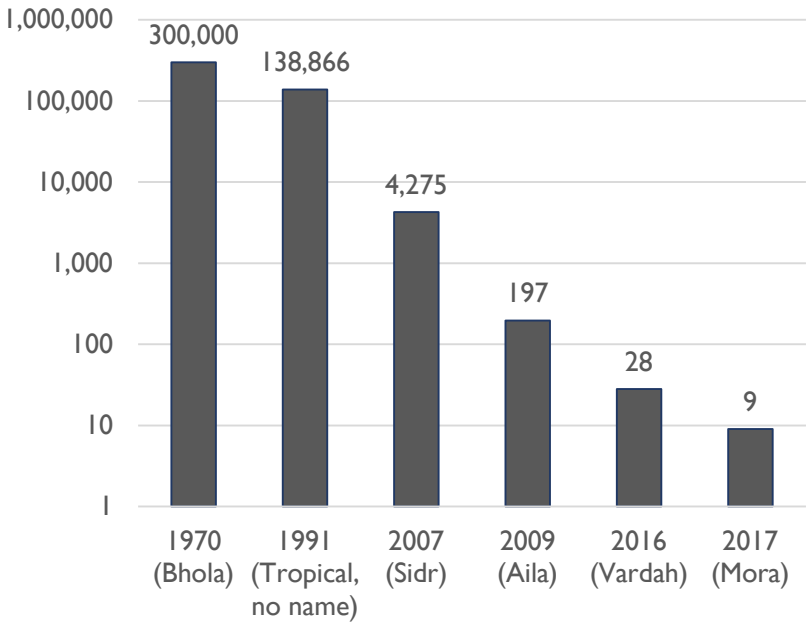
Reduction in deaths due to tropical cyclones Bangladesh (1970-2017)



Estimated cost-benefit ratio of establishing basin-based flood early warning system

Country	Annual average losses from floods* (million USD)	Avoidable damage** (million USD)	Investment cost (million USD)	Benefit-cost ratio
Bhutan	54.5	8.72	0.92	9.48
Nepal	143.34	22.93	0.37	61.97
India	2,531.3	405.01	0.92	440.23
Pakistan	1,029	164.64	0.37	444.97
Bangladesh	2,463.17	394.11	0.61	646.08

RIMES, 2017

- However, there are **gaps in addressing transboundary floods, flash floods and landslides**.

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As highlighted at the Multi-hazard Early Warning Conference in Cancun

Multi-Hazard Early Warning Conference, 22-23 May 2017, Cancún, Mexico
Session 5. Strengthening regional cooperation and partnerships

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Ensuring coherence: APDRN

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Asia-Pacific Disaster Resilience Network

Ensuring coherence in efforts to build resilience across development frameworks

Pillar I.
Regional Platform for Multi-hazard Early Warning System

Pillar II.
Regional Space Applications for DRR

Pillar III. Regional Hub of Knowledge and Innovation

- Risk assessment tools and techniques
- User-friendly climate risk information, scenarios and outlooks
- Analytical reports
  - Asia-Pacific Disaster Report
  - Impact outlooks
  - Policy briefs

Regional cooperation and capacity development activities

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Regional Platform for MHEWS

Sendai Framework on DRR
Target G: MHEWS

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Asia-Pacific Disaster Resilience Network (APDRN)

International Network for Multi-Hazard Early Warning Systems

Pillar I - Regional Platform of Multi-hazard Early Warning System

Hazard clusters

Extreme Weather Events	**Tropical cyclones/typhoons in partnership with WMO..**
Geophysical disasters	**Tsunamis and earthquakes, UNESCO/IOC..**
Slow-onset disasters	**El Nino, Droughts, Sand and Dust Storms, RIMES, WMO, UNCCD, UNEP**

Financing Mechanisms

ESCAP's Extra Budgetary Cooperation Trust Funds and Regular Budget Contributions

Disaster information management

Asian and the Pacific Centre for the Development of Disaster Information Management

Gap also lies in impact based forecasting

Sendai Framework on DRR
Target G: Risk Information

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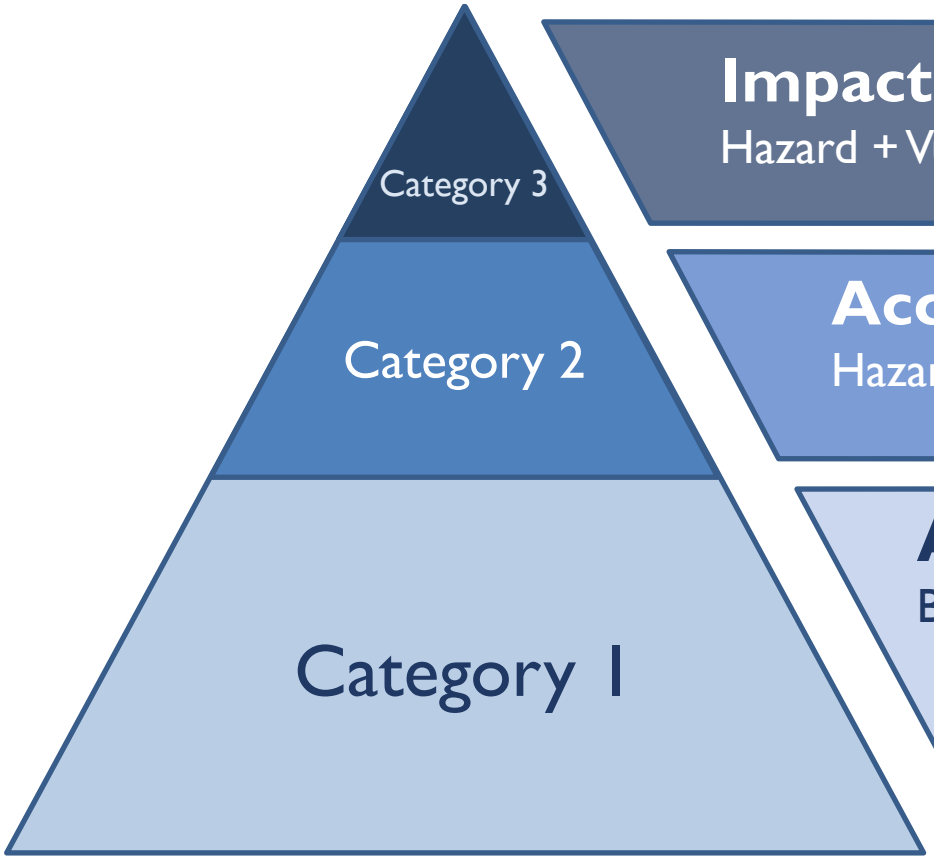

Early Warning Category	Data for Early Warning	% of Countries
Category 3	**Impact Scenarios** Hazard + Vulnerability /Exposure+ Impacts	<10%
Category 2	**Access to risk Data** Hazard + Vulnerability /Exposure	40-50%
Category 1	**Access to hazard info** Baseline data from: - Governments, - UNESCO-IOC (Tsunami) - 24 Countries - ESCAP/WMO TC/PTC-23 Countries - RESAP/Drought Mechanisms	80-90%

Addressing the Gaps:
EGM on Regional Cooperation in EW

Expert Group Meeting on Regional Cooperation in Early Warning for Transboundary River Basin Floods, Flash Floods and Landslides in Asia, 9-11 October 2017, Bangkok, Thailand

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Challenges and opportunities for Regional Multi-hazard EWS

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Experts identified challenges, including:

- limited data availability;
- lack of integrated approaches at regional/national levels;
- lack of incentives for countries to participate in and contribute to cooperation mechanisms;
- significant variability in early warning capacity across the region;
- sustainability, including restrictions in available financial/human resources; and
- commitment of members**.**

Identified opportunities include:

- Significant progress and improvements in early warning, forecasting and monitoring capabilities, including innovations in remote-sensing technology, allow regional mechanisms to be less dependent on data shared by members.
- Large numbers of organizations dealing with flood risks offer great potential to synergize activities and can provide good basis for regional cooperation.

Ways Forward

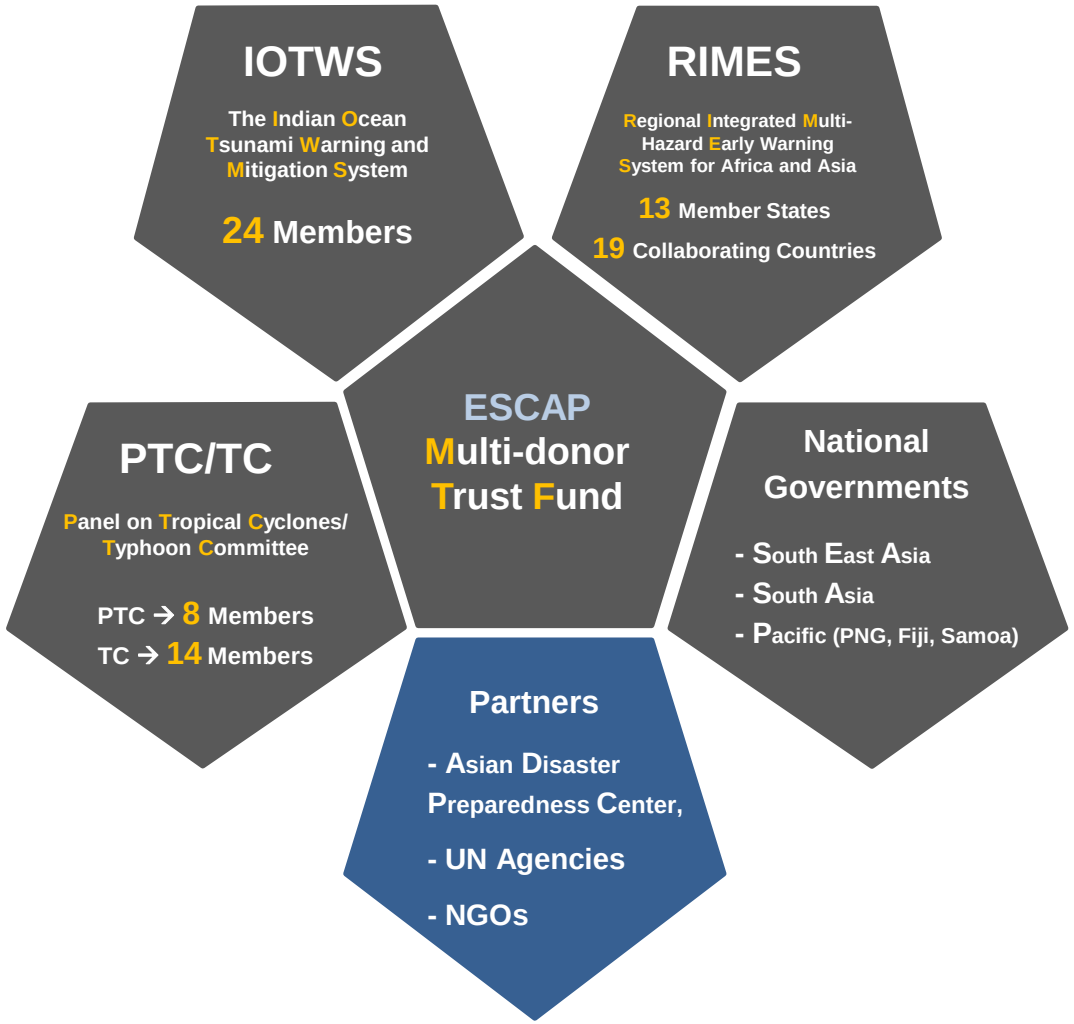
To move forward, **experts recommended for the regional platform for multi-hazard early warning systems:**

- To be **linked** to global agreements (SDGs, Sendai Framework, Paris agreement, etc.), initiatives (IN-MHEWS, CREWS), and existing inter-governmental platforms (TC, PTC, IOTWMS, RCOFs, Monsoon Forums);
- To take a **hazard-clusters, multi-sectoral and integrated** approach, and reflect **geographical specificities** & boundaries;
- To focus on **impact-based forecasting** and **end-to-end** warning systems;
- To develop **a common strategic plan** and synergized SOPs;
- To ensure **ownership of members** and build **accountability** and national capacities; and
- For the early warning of transboudary floods, flash floods and landslides, to start with **non-controversial platforms** and **long-term perspectives**.

Strengthened Regional Cooperation

ESCAP Multi-Donor Trust Fund for Tsunami, Disaster and Climate Preparedness in Indian Ocean and Southeast Asian Countries.

$15 million



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Thank you!

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