



# Assessment of Gaps and Needs for Disaster Risk Information and Data Management Platforms in Asia and the Pacific Region

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**SAGE ON EARTH CONSULTING**  
UNDERSTANDING RISK AND RESILIENT SOLUTIONS

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# Project Team

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# Outline

- Background and Project Scope
- Findings on Risk Datasets And Data Management Platforms
- Findings on Challenges, Supply Gaps and Needs
- Suggestions for the Way Forward Supporting Countries in Understanding Risk for DRR

## The Project Objectives: Understand challenges, gaps in supply, and needs

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Focusing on Regional and National Needs



Researching existing Hazard and Risk Data and Information



Researching existing risk data management platforms



Assessing current supply and understanding the users demand



Defining the gap between supply and demand to define a strategic way forward



# Scope



## Type of Hazards:

1. Sand and Dust Storms (SDS)
2. Riverine Flood
3. Urban Flood
4. Coastal Flood
5. Earthquakes
6. Landslides
7. Cyclones
8. Droughts
9. Tsunamis
10. Extreme Weather  
(extreme heat and extreme cold)
11. Volcanoes
12. Wildfire



## Type of Impacts

(aligned with the Sendai Framework)

Sendai Target A: Life safety  
Sendai Target B: Affected People  
Sendai Target C and D: Economic Loss and Damage to buildings and Critical Infrastructure (CI) and disruption to CI



**“Risk data”**: Hazard, exposure, and risk data

**Datasets with Regional and Sub-regional coverage**

**Global and Regional data platforms serving users in Asia and the Pacific**



## **Research and Insights from Experts and Practitioners**

- Desk top research
- Online Survey for regional insights
- National level research in Iran, Tajikistan, Bangladesh, and Nepal
- Online Questionnaire for National Needs assessment
- Series of interviews with regional and national practitioners and researchers
- About 35 people provided direct inputs in writing and/or through discussions with the team



## **Reviewed 55 datasets**



**32 Global and Regional Platforms were reviewed to identify the ones serving the region and learn about the good approaches in design and maintenance**

# Hazard and Risk Data Availability

	Regional Hazard and Risk	Regional Hazard Only	Sub-regional Hazard and Risk	Sub-regional Hazard Only
Earthquake	●●		●●	
River Flooding	●●		●	
Coastal Flooding /Storm Surge	●●		●	
Urban Flooding				
Landslide		●●		
Tsunami	●		●	
Tropical Cyclone	●		●	
Volcano		●	●	
Extreme Heat		●		
Wildfire		●		
Sand and Dust				
Storm				
Drought				

Identified 20 truly open datasets covering all region or a sub-region in Asia and the Pacific

15 Global live data monitoring of hazards or post disaster loss dataset were identified

See the report for more details on these datasets and the available exposure data on **buildings and critical infrastructure**

All the available regional and sub-regional hazard and risk datasets can be accessed at one or more of the following data platforms: GAR15, GEM data platform, World Resource Institute, GFDRR Innovation Lab Geonode platform, and SPC PacGeo.

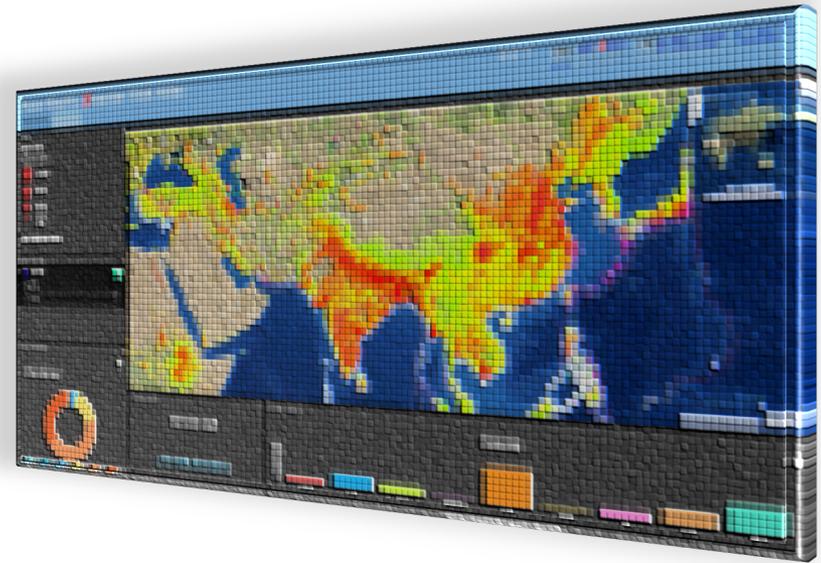


# What we learned from reviewing risk data management platform

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## Characteristics of good risk data management platforms:

1. Platform Description
2. Platform Ownership and Contact Details
3. Data Format
4. Metadata
5. Licensing
6. URL
7. Regularly updated
8. APIs & Federation
9. Smooth user experience



See the report for details as well as guidance for design, implementation, and maintenance of a data management platform





## High Level Findings on Challenges and Gaps

- **Inefficient data sharing and data management** is a burden in conducting hazard and risk assessments
- There are **major gaps at local level** in hazard and risk information type and resolution to be useful for DRR/CCA
- The produced information does not provide the type of **insights on risk drivers and evidence for risk reduction opportunity** to support policy design
- There **are no political, economic, or regulatory incentives** to use hazard and risk information in policy and program design
- Information is **not communicated effectively** to non-technical stakeholders
- There is **insufficient capacity** among practitioners and decision makers to understand risk and use risk information in their existing planning mechanisms and operations

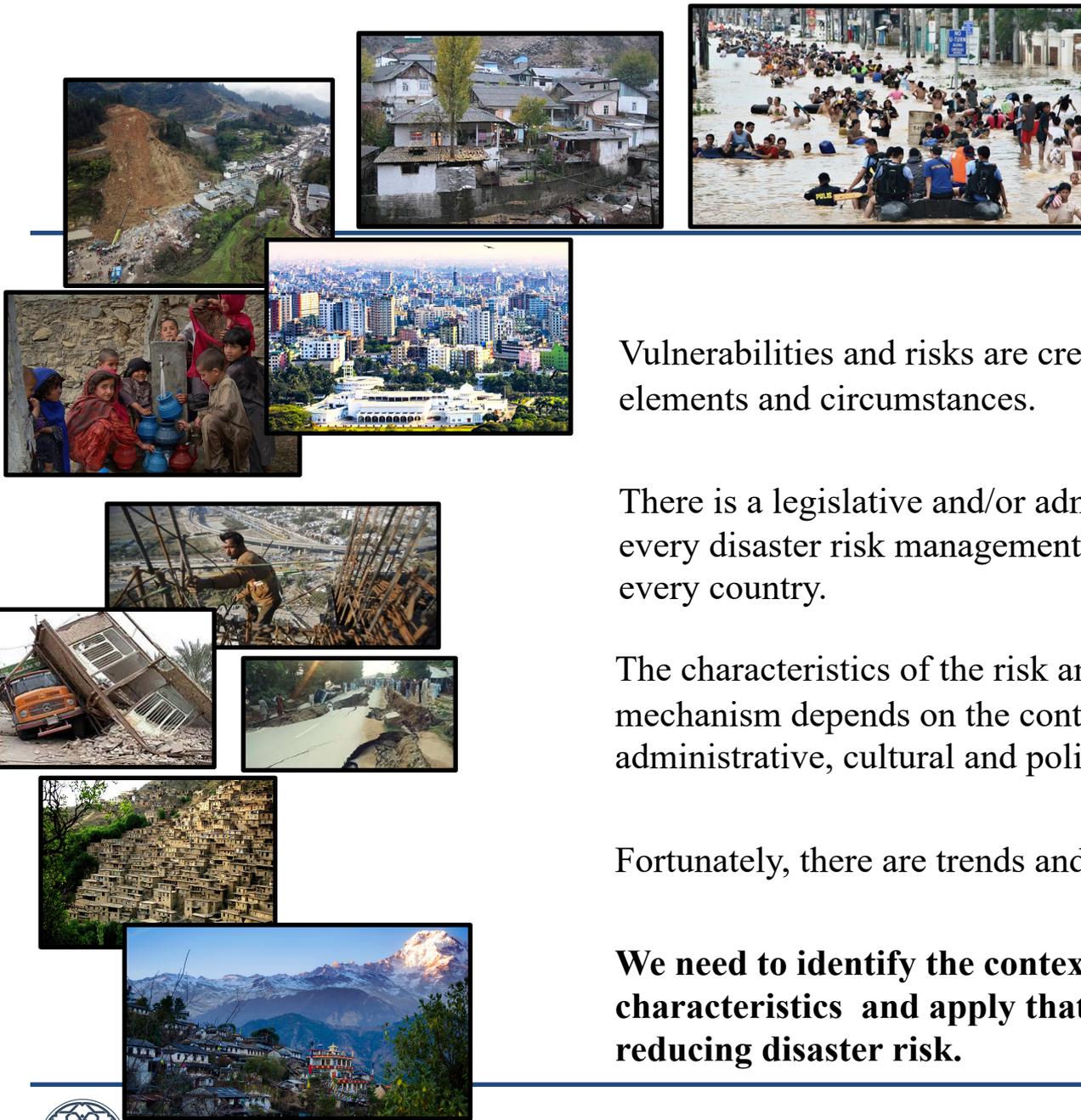
# Findings on Challenges, Supply Gaps and Needs

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- (i) There is a significant need to increase the use and application of risk information in policy and planning at the national and regional level
- (ii) Countries need support to access and analyse existing data and to conduct new hazard and risk assessment;
- (iii) Countries need support for enhancing risk data management and governance;
- (iv) Using the Sendai Framework as the benchmark exposes significant gaps in the availability of many types of risk information;
- (v) There are major gaps in hazard and risk data availability for droughts and sand and dust storms
- (vi) Cross-boundary collaborations need the support of regional institutions
- (vii) Risk information developed by international entities is a valuable resource but not without its challenges
- (viii) There is not one central platform for accessing risk data in Asia and the Pacific and establishing such a platform could benefit national and regional actors



Suggestions for the Way Forward:  
Supporting Countries in Understanding Risk for DRR



Vulnerabilities and risks are created by a set of interlinked elements and circumstances.

There is a legislative and/or administrative system for every disaster risk management measure at each level in every country.

The characteristics of the risk and required risk management mechanism depends on the context of the built environment, administrative, cultural and political space.

Fortunately, there are trends and similarities across countries.

**We need to identify the context, understand the characteristics and apply that knowledge in our work for reducing disaster risk.**



Suggestion 1. Facilitate dynamic dialogue, collaboration, and co-design of initiatives and products by convening multidisciplinary teams from national, regional, and international entities.

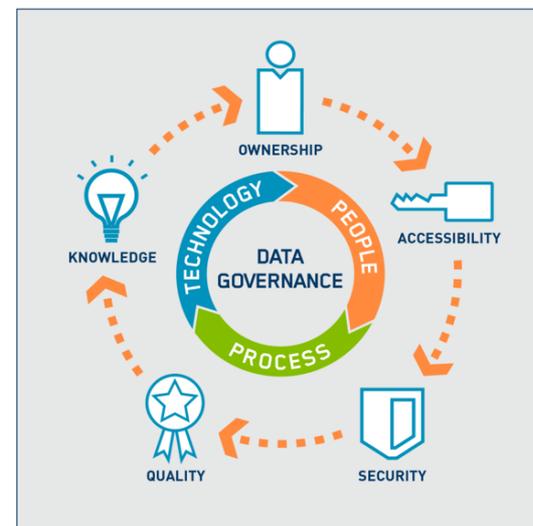


We need to understand  
the people  
the system they function in  
the tools and mechanisms they use  
and their incentives



## Suggestion 2. Support national entities to enhance national risk data governance including support for the following:

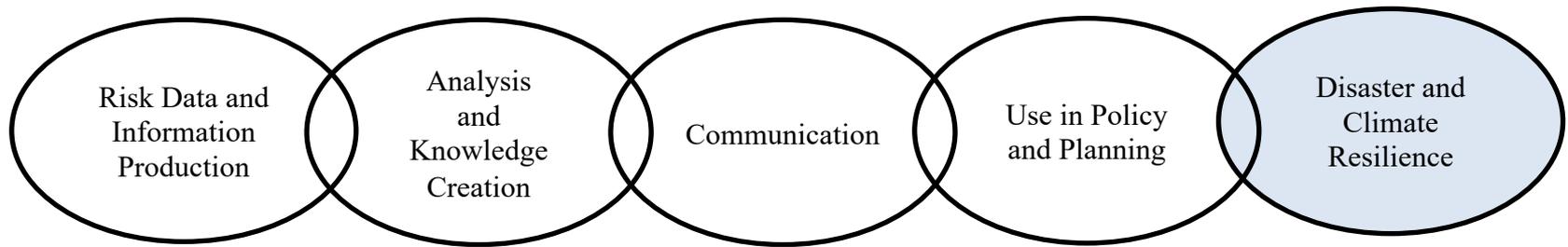
- Required legislations
- Development of proper protocols and standards
- Creation of sustainable funding mechanisms
- Identify data needs and maintain sustainable demand
- Establishing a governance structure
- Open dialogue on data security and setting up the required mechanisms for security
- Establishing a national data management platform where required capacities exist



*Image from ERT.com*



Suggestion 3. Support the national and sub-national science and policy stakeholders in conducting risk assessments, understanding risk information, and using it in policy and planning



**Actors:** *Scientists*

*Scientists and DRR Practitioners*

*Communication experts,  
Decision Making Experts,  
Human Behavior experts,  
DRR Practitioners*

*Practitioners and  
Policy Makers*



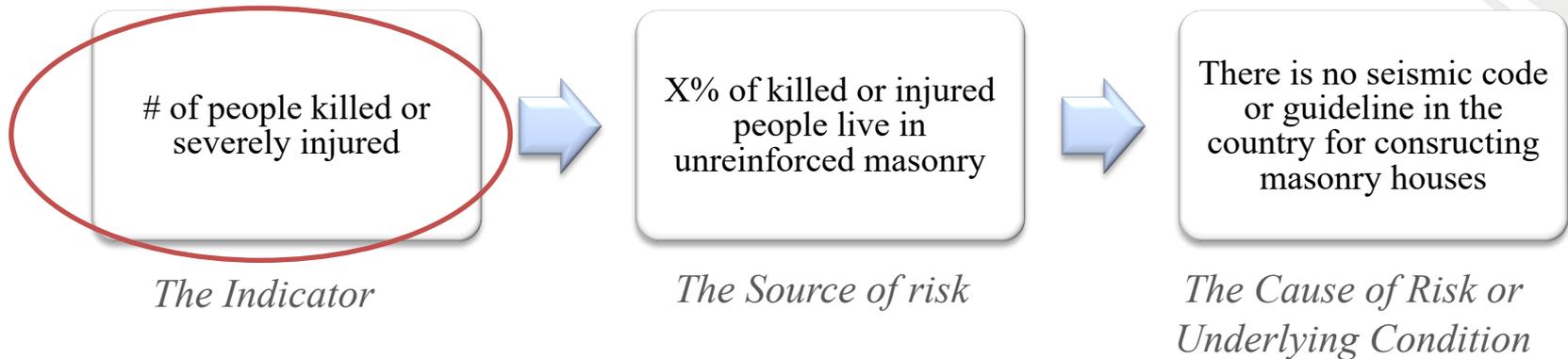
### Suggestion 3. Support the national and sub-national science and policy stakeholders in conducting risk assessments, understanding risk information, and using it in policy and planning

- Incorporating modules and programmes on hazard and risk modelling into relevant advanced degrees
- Developing national guidelines for unified and integrated methodologies
- Facilitating long-term collaborations between international technical entities with national technical entities for lasting transfer of know-how in conducting hazard and risk assessments.
- Developing technical guidelines and training on how to apply hazard and risk information in policies and plans that contribute to disaster risk reduction. For example:
  - *Building codes, Land use and development planning, Emergency preparedness and recovery planning, Policies for reducing existing risk, Resilient community building*
- Developing a template for communicating risk information at national and local levels.
- Conducting pilot projects that showcase the effectiveness of different risk reduction policies using risk modelling.
- Promoting diagnostic risk assessment approach



# About Diagnostic Risk Assessment

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## Suggestion 4. Mobilize global and regional expertise and resources to strategize for closing the gaps in hazard and risk data available for disaster risk reduction

Using the Sendai Framework as the benchmark exposes significant gaps in the availability of many types of risk information:

- On hazards and risks besides EQ and Floods
- At smaller urban zones, semi-urban, and rural areas.
- Potential number of people losing their dwelling (people displacement) at the sub-national level and for probable and extreme scenarios
- Critical infrastructure (CI) damage, disruption, and CI inter-dependencies.
- Understanding of complete economic losses from possible future disasters.
- Information on socio-economic vulnerabilities and the unequal impacts of disasters on most vulnerable groups.
- Appropriate resolution of hazard and risk data for use at the local level where the majority of disaster risk reduction policies and projects are designed and implemented.

## Suggestion 5. Invest in the design, implementation, and maintenance of a regional risk data platform

### Approach 1. APDIM Risk Data Platform

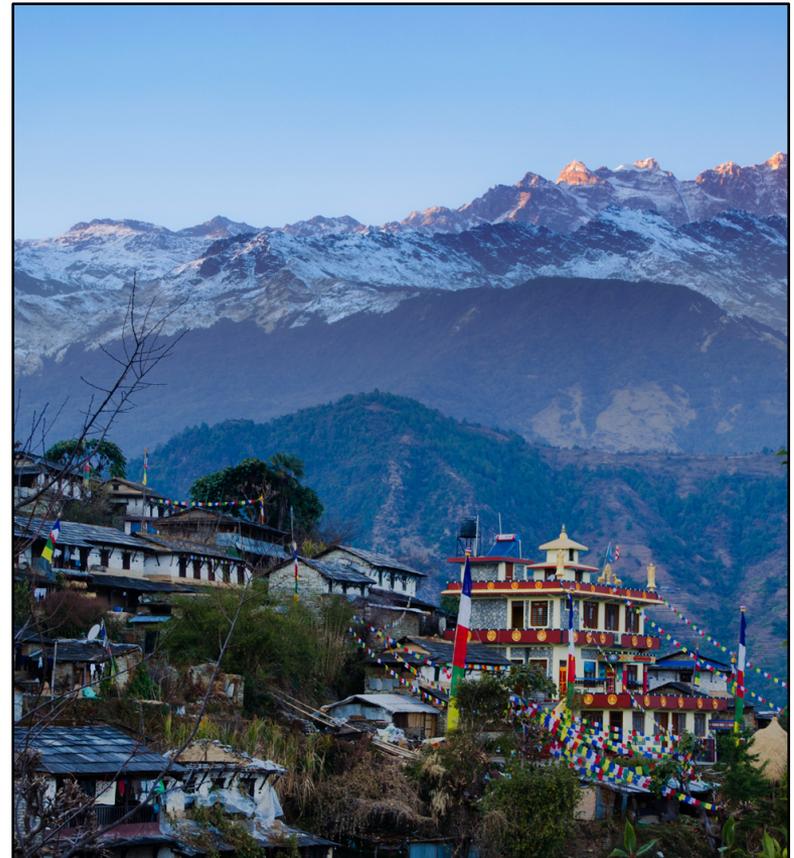
for sharing very specific hazard/risk and loss data that APDIM leads the production of by outsourcing or in-house efforts

### Approach 2. APDIM and Partners Risk Data Platform

for sharing hazard/risk and loss data that APDIM and Key Regional Partners produce

### Approach 3. Regional (or sub-regional) Risk Data Platform

for facilitating open data sharing by all users



# Final Points

The demand for risk information is still very low.

For the following key reasons:

- Disaster risk reduction and climate change adaptation are yet not integrated into all sectors' policy design, planning, and operations.
- The value of risk information and its applications in DRR and development policies are not well understood
- The weak connection between science and policy entities is a barrier for aligning objectives, approaches, and communication of risk information into risk reduction policies.
- Most risk assessments do not diagnose the causes of risk, are not accompanied by risk reduction options and do not evaluate the performance of those options.



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# Thanks!

Access the data on APDIM Website:

<https://apdim.unescap.org/>

Or use this QR Code

