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Regional Workshop on Climate and Disaster Risk-Informed Investments

Session 1.2 Risk information for investing in a resilient future for Asia and the Pacific

22 June 2023

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Climate and disaster risk in Asia and the Pacific is...

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Good decisions require good information.

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For example…
digital elevation model

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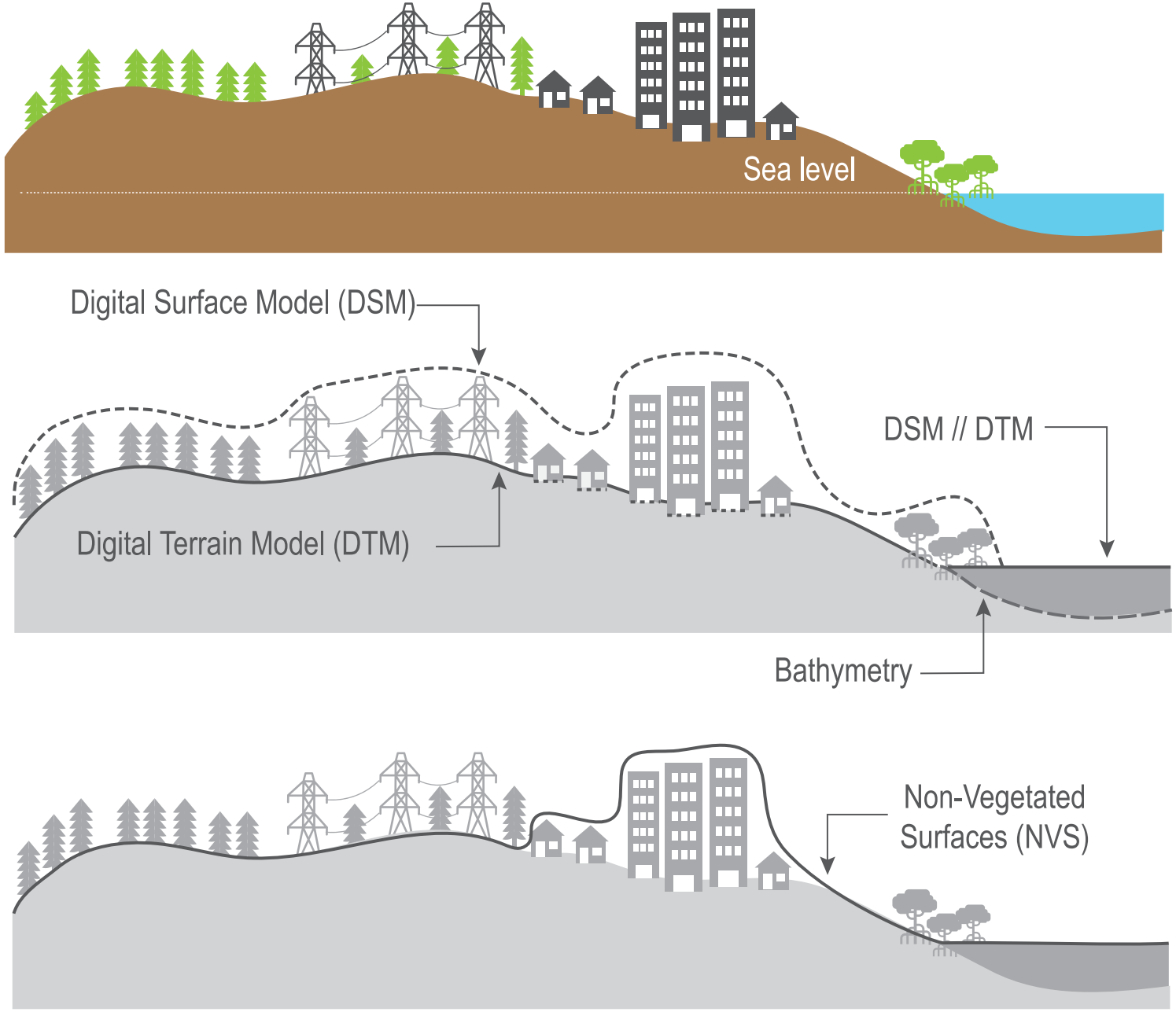

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Poll

www.mentimeter.com Code 5265 8243

Climate and disaster risk data is **MOST useful** for…

- National policy/strategy
- Spatial planning
- Investment planning & budgeting
- Emergency preparedness
- Financial regulation
- Project design
- All of the above

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www.mentimeter.com Code 5265 8243

What is the bigger barrier you face in relation to climate and disaster risk data?

- Data **reliability**
- Data **accessibility**
- Data **overload**
- **Capacity/knowledge** to use data

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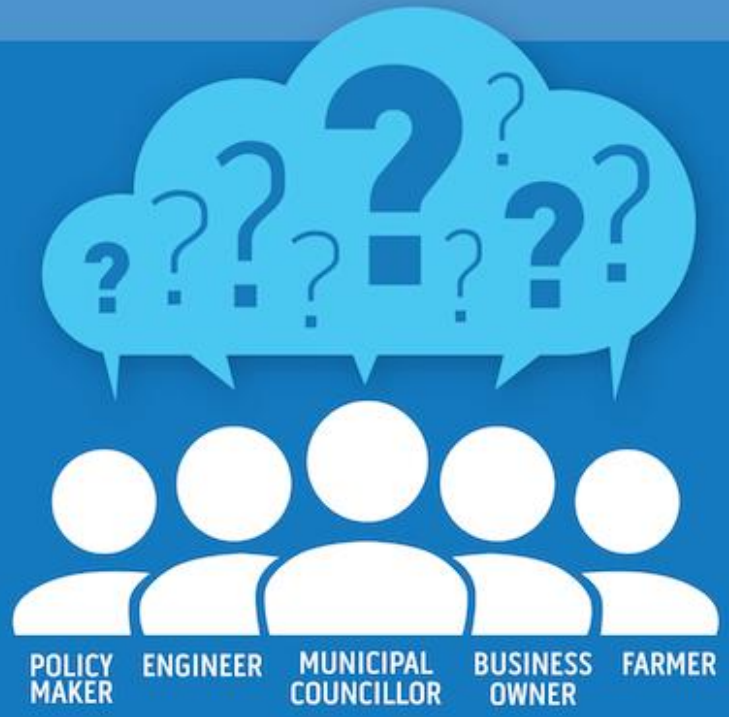
Environmental Commissioner of Ontario

CLIMATE DATA PROBLEMS

THERE ARE 2 MAIN ISSUES WITH CLIMATE DATA FROM THE END USER'S PERSPECTIVE:

ACCESSIBILITY
+
RELIABILITY



END USERS DON'T KNOW WHICH DATA TO USE, OR WHERE TO FIND IT

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Session overview

- Climate and natural hazard risk data types
- Opportunities for strengthening national risk data
- Climate data activity

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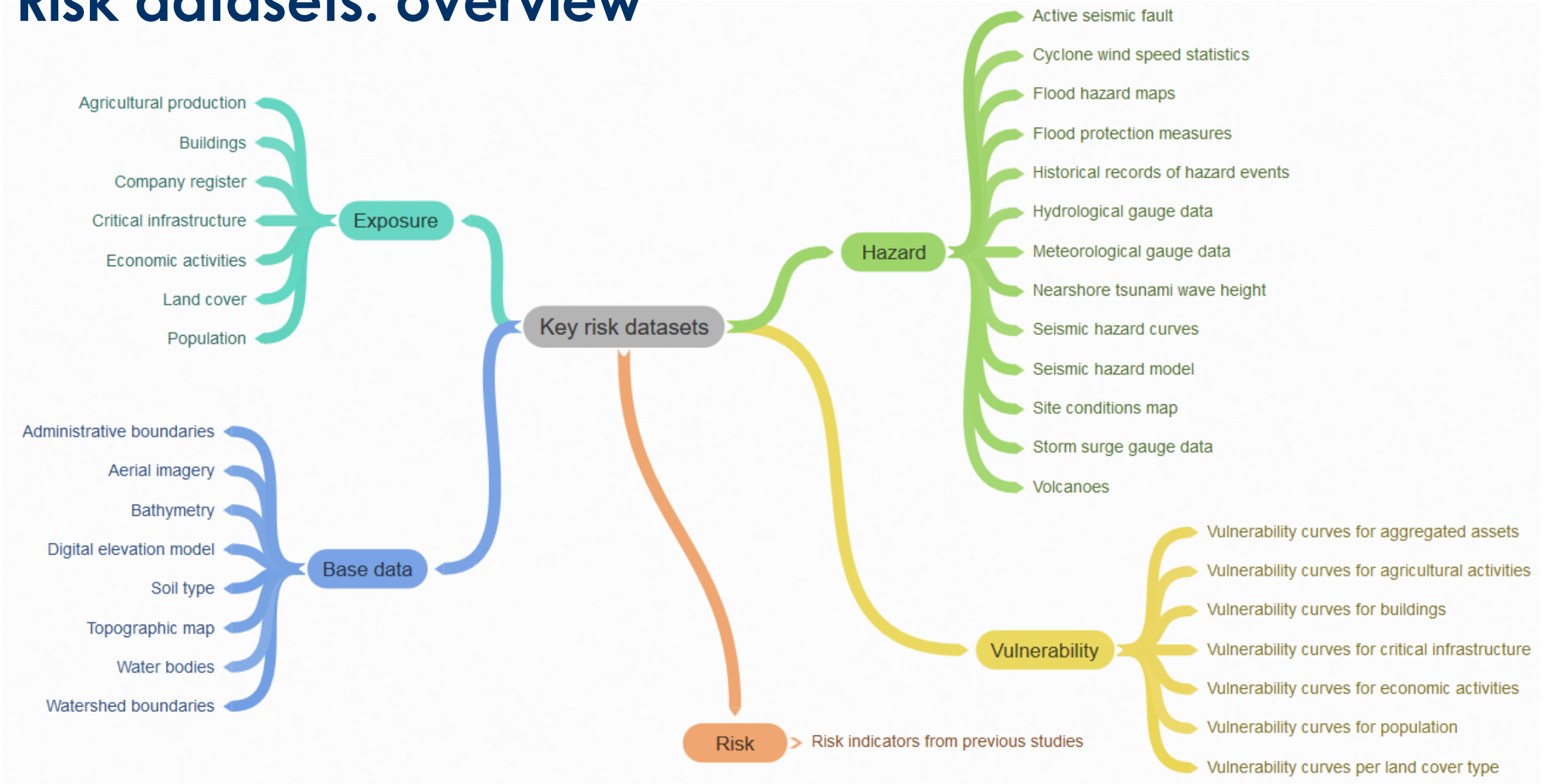
Source: OpenDRI Index

Risk datasets: overview



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ADB FutureWater

Administrative boundaries

Aerial imagery

Bathymetry

Digital elevation model

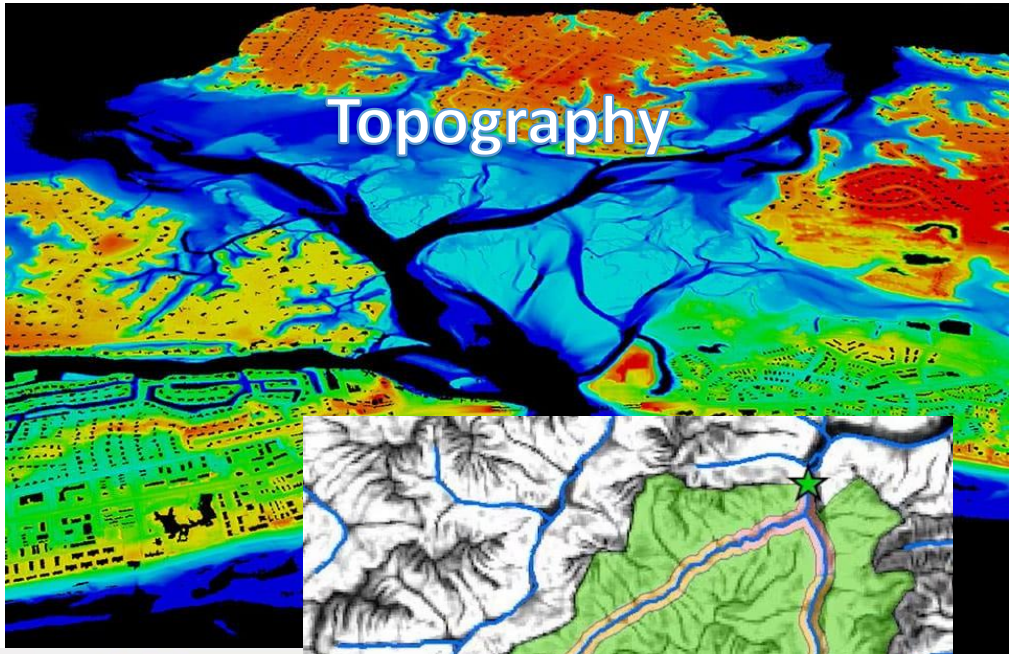
Soil type

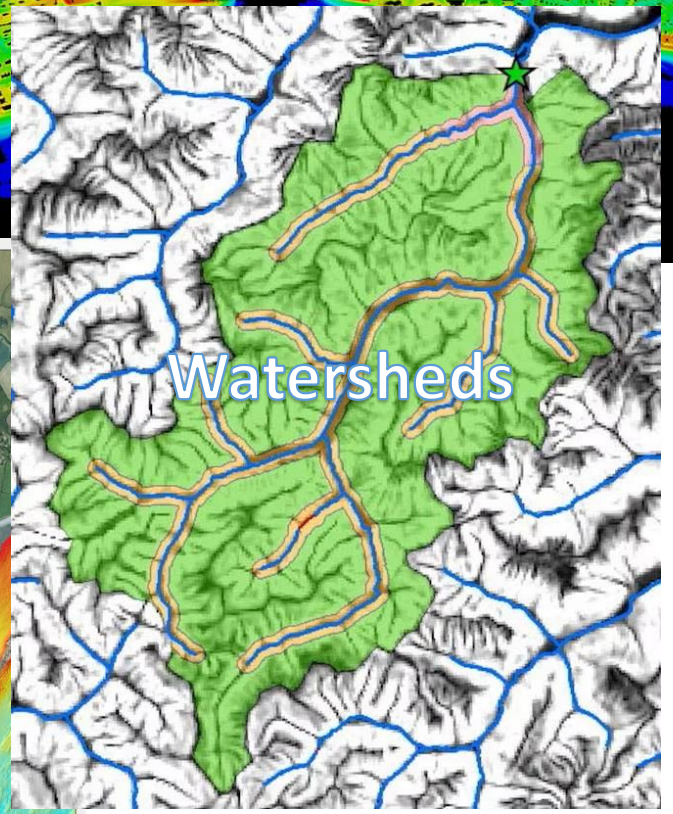
Topographic map

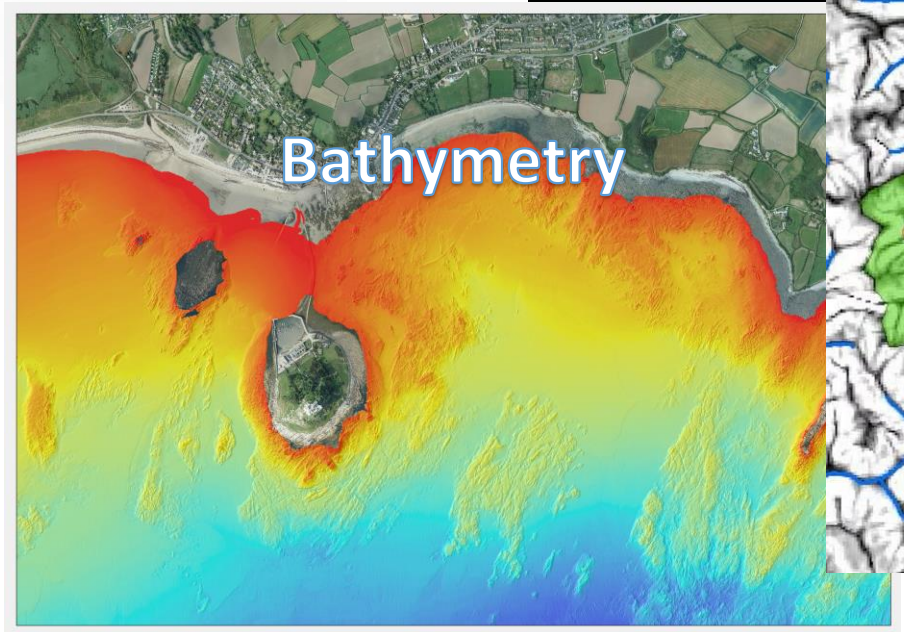
Water bodies

Watershed boundaries

Base data







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FutureWater

Agricultural production

Buildings

Company register

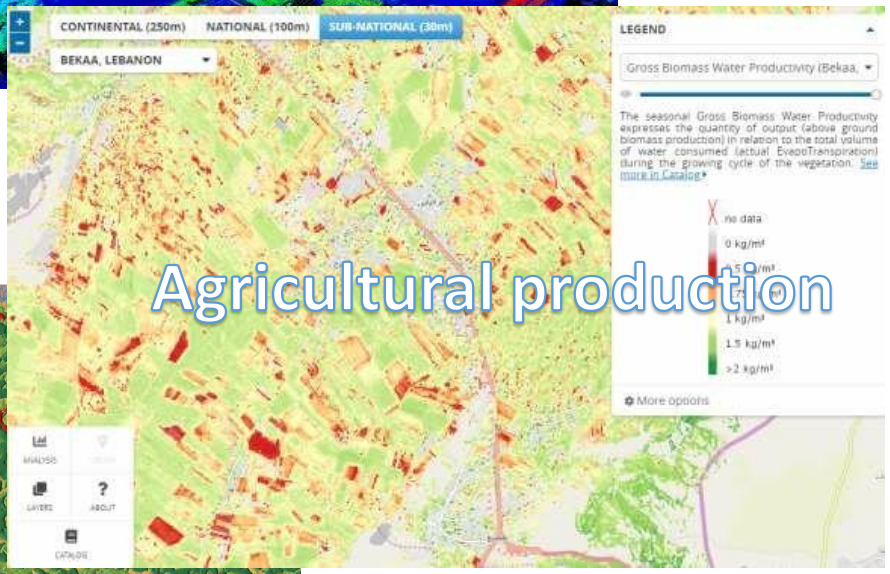
Critical infrastructure

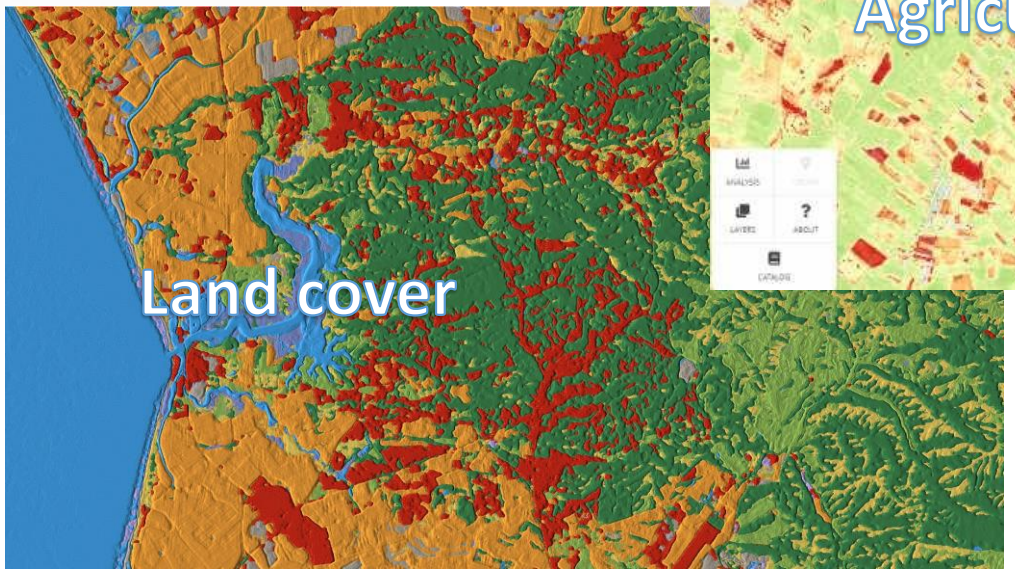
Economic activities

Land cover

Population

Exposure





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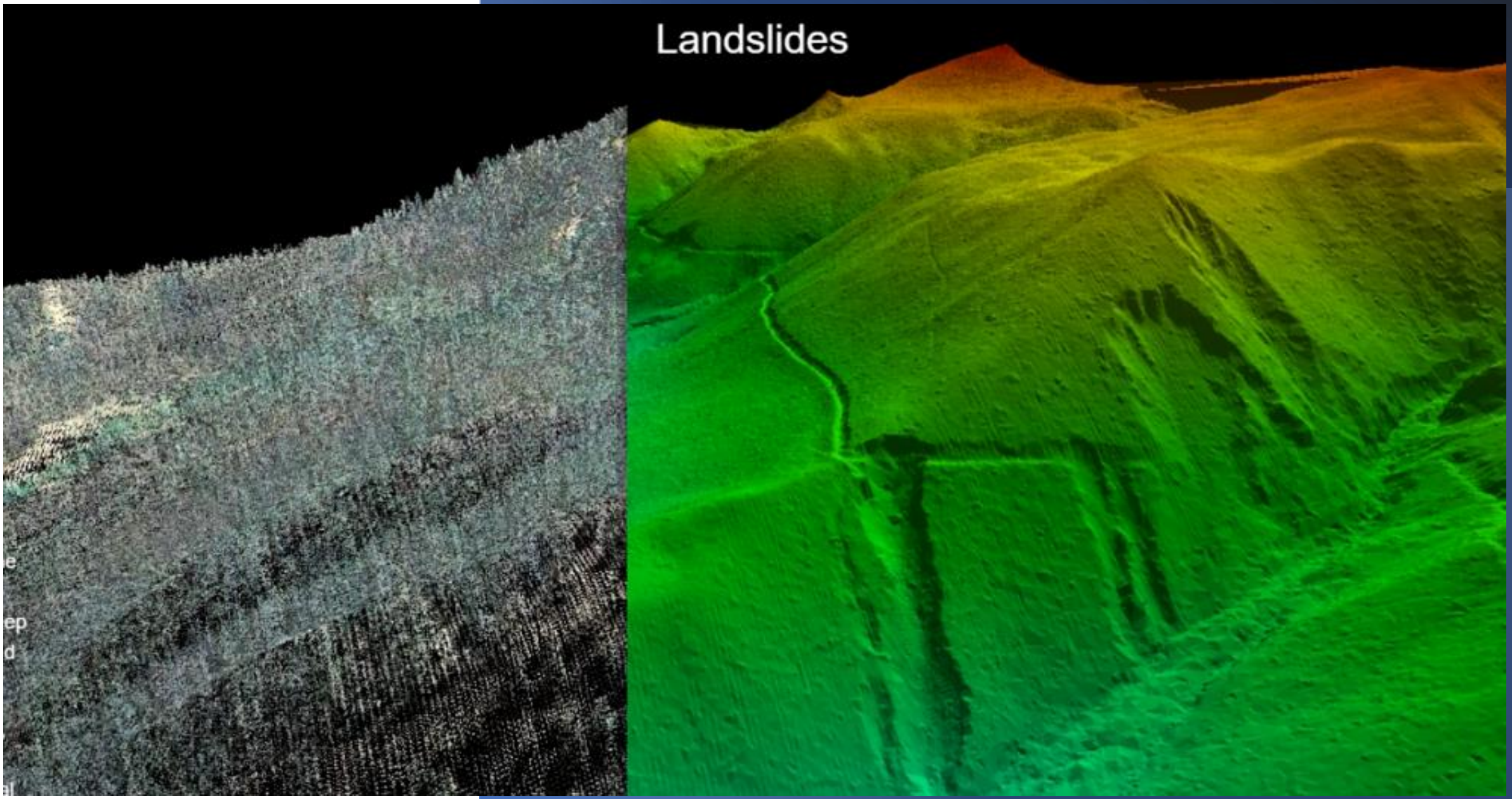
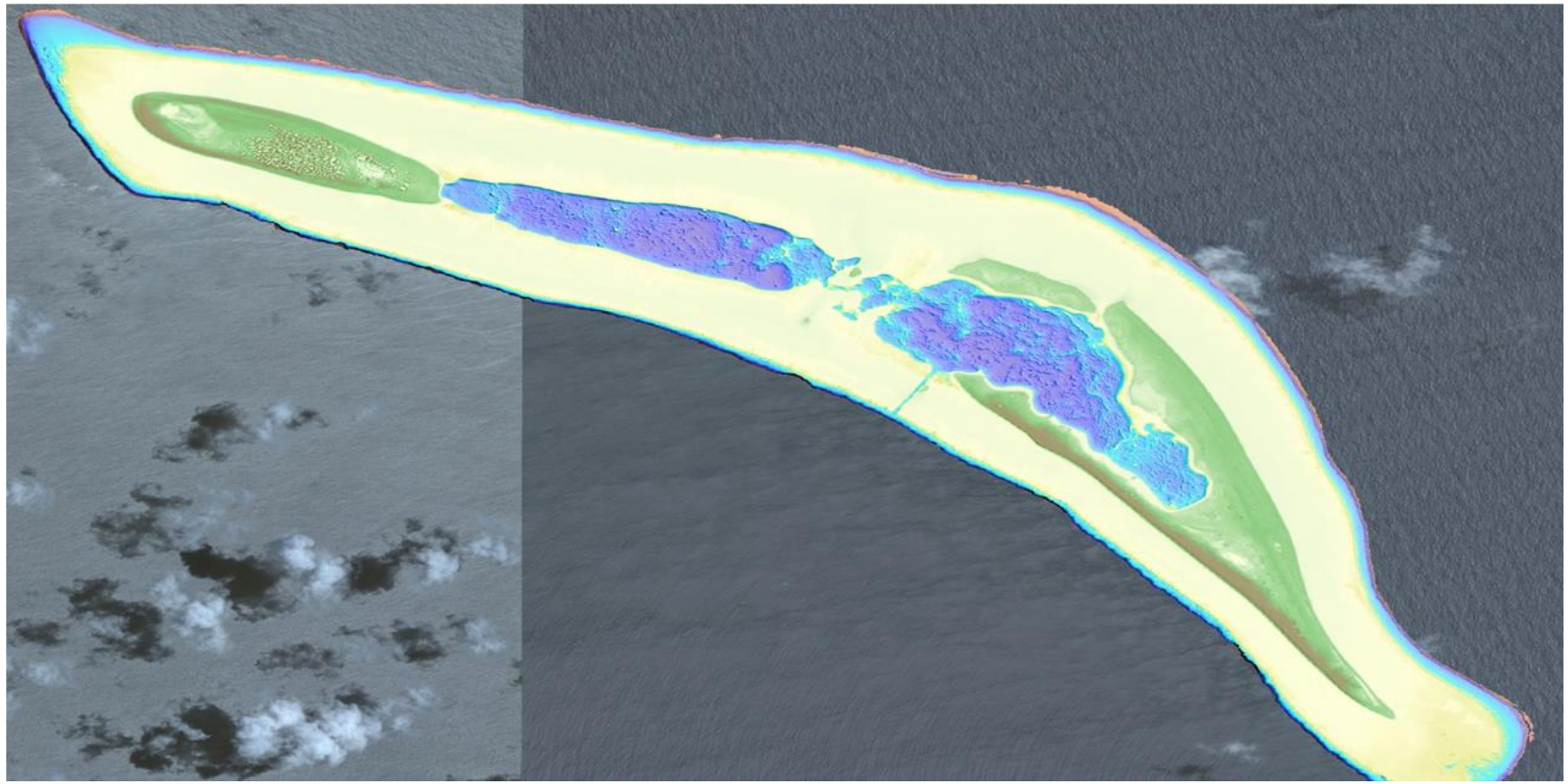
ADB FutureWater



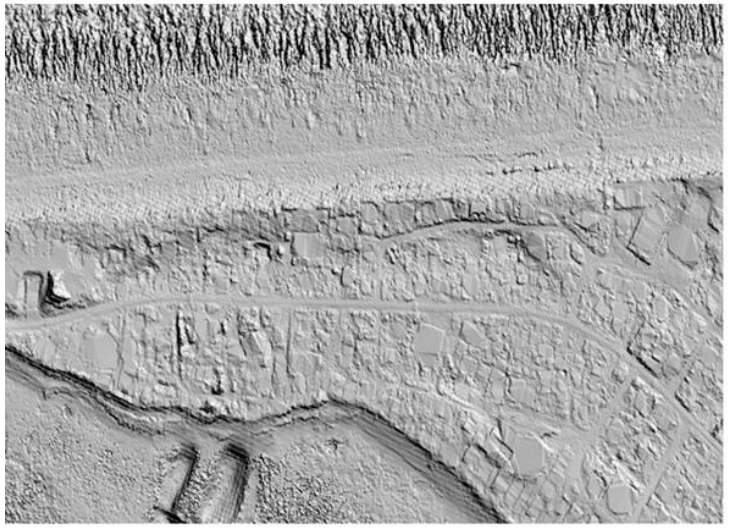
Source: USGS

Example: Tuvalu LiDAR project



Source: Tuvalu Coastal Adaptation Project/ UNDP

Lidar high revolution imagery photo



Lidar hillshade imagery photo

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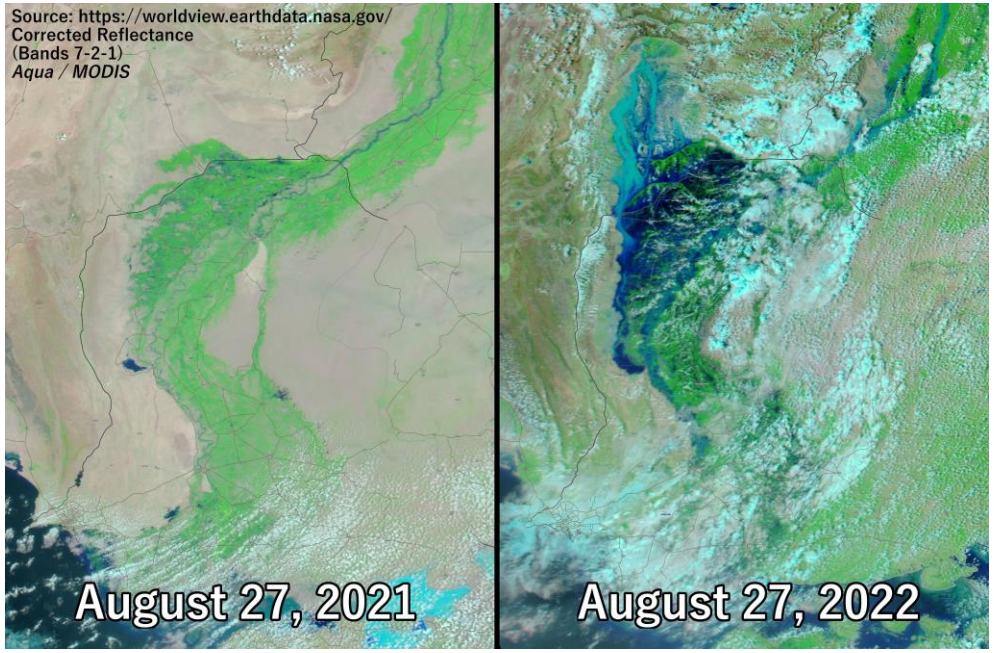

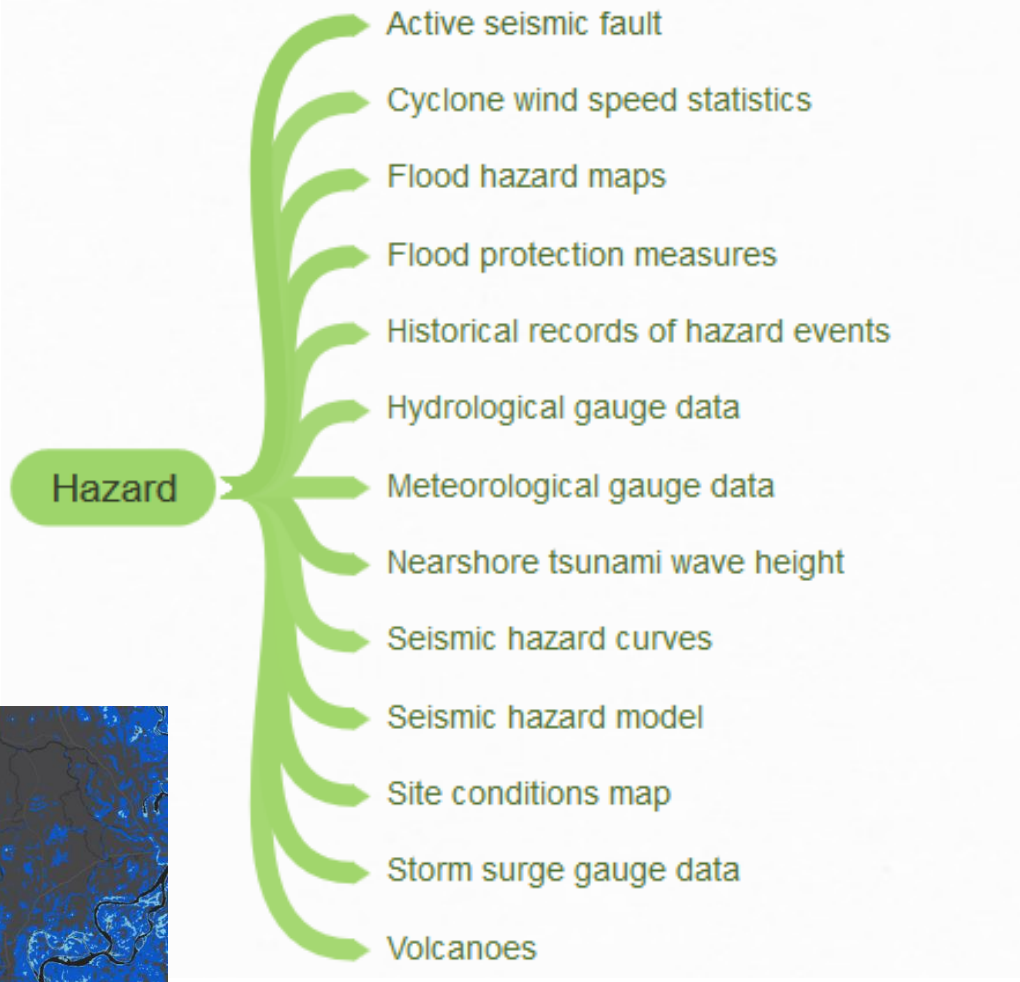

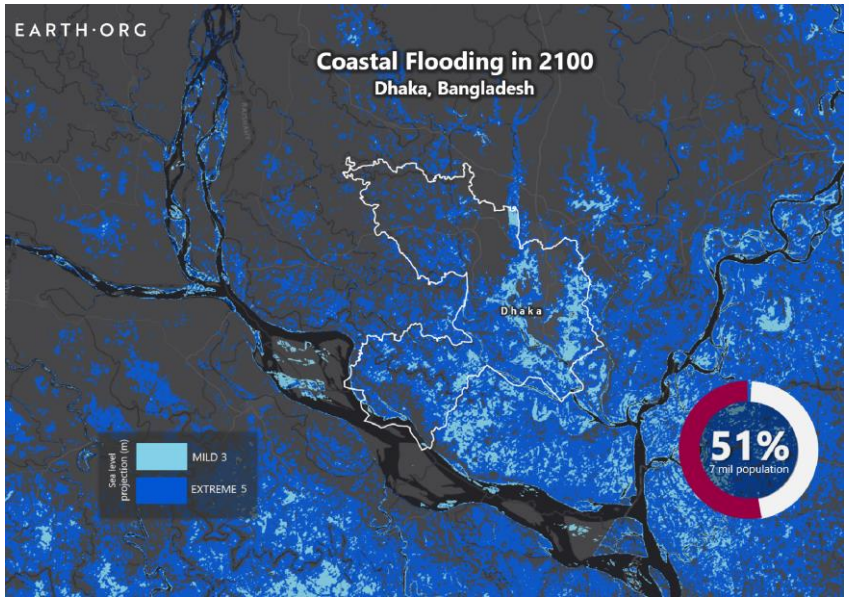

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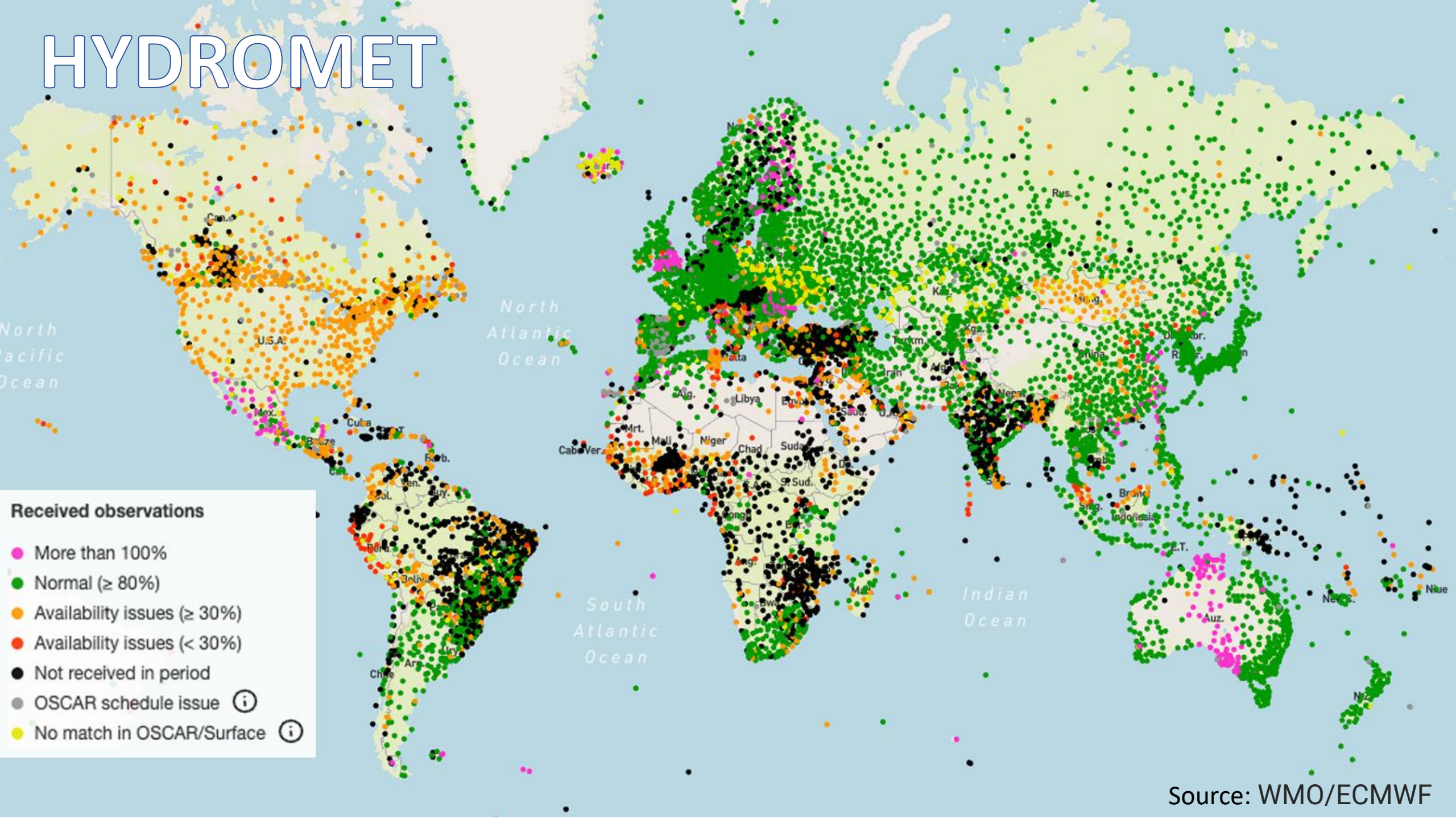
HYDROMET

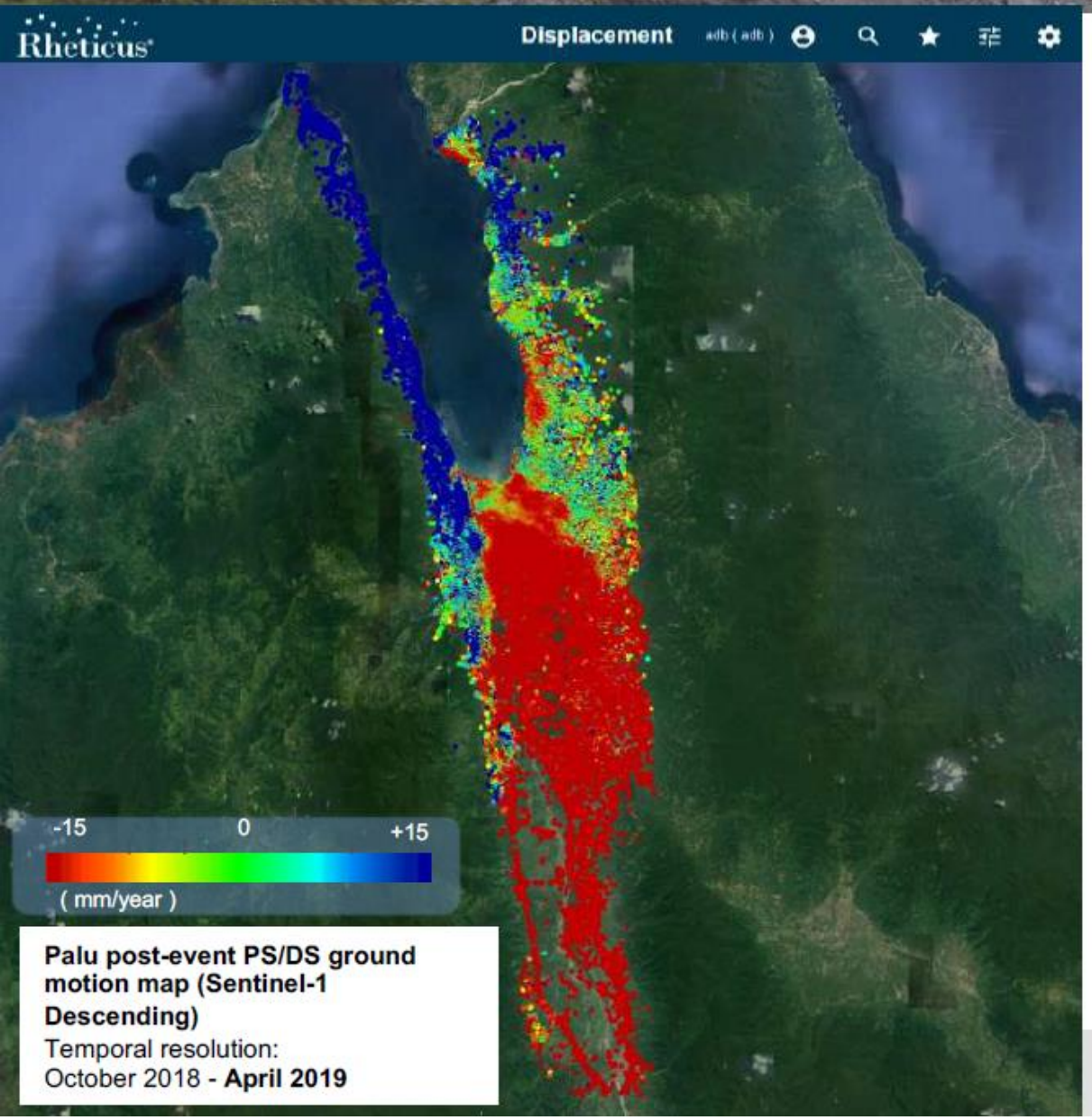


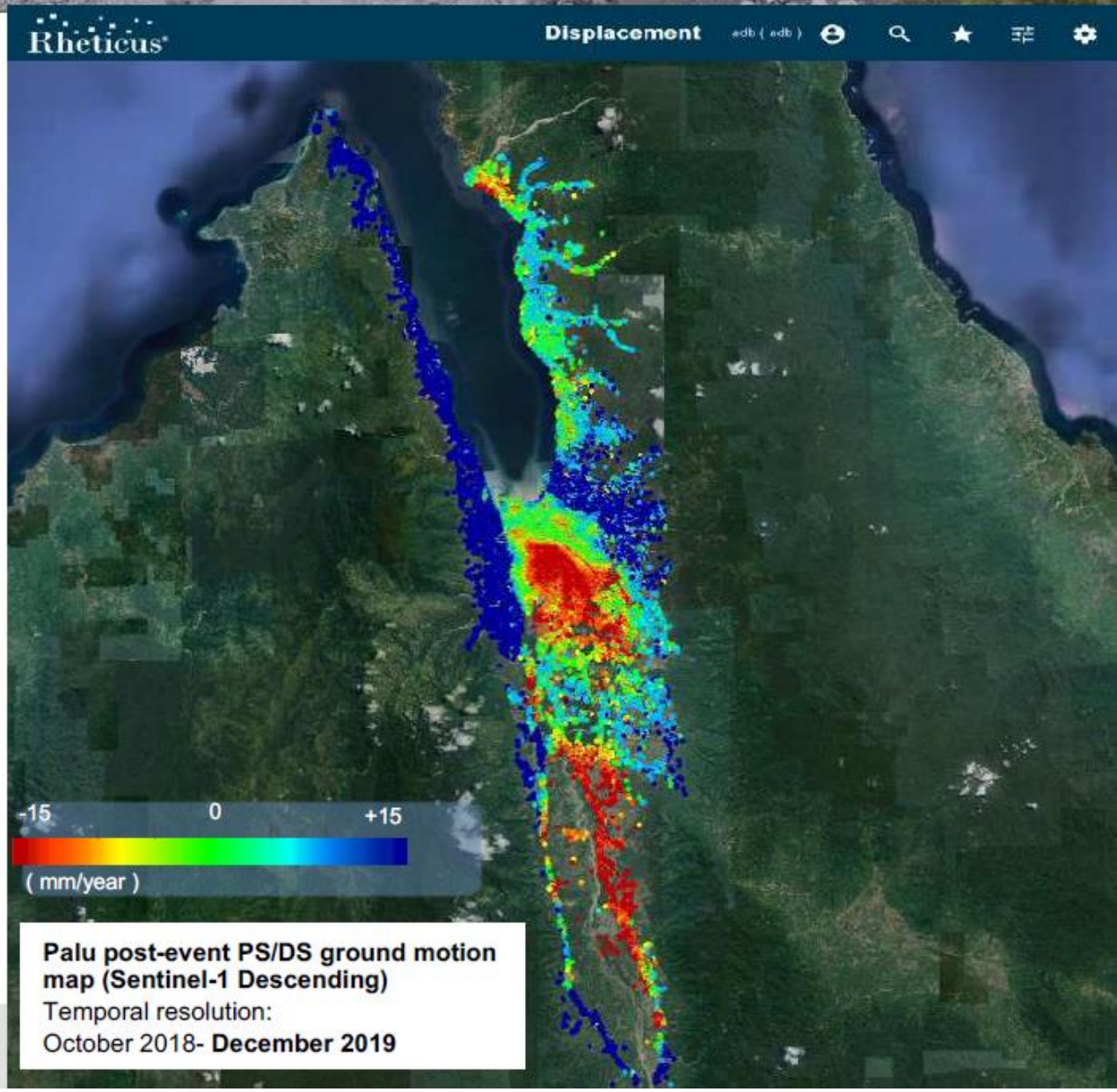
Source: WMO/ECMWF

Palu PS/DS ground motion map

2018 Sulawesi earthquake and tsunami
(6 months after the earthquake VS today)

esa





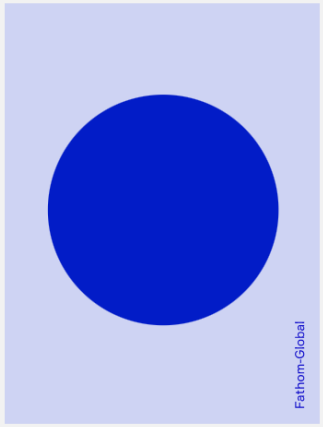
MODELLED

- Products
  - Flood Hazard Data & Maps
    - Global Flood Map
    - UK Flood Map
    - US Flood Map
    - Japan Flood Map
  - Catastrophe Modelling
  - Global Terrain Data – FABDEM
  - Event Response
- Sectors
  - Insurance
  - Engineering
  - Financial Markets
  - International Development
  - Corporate
- Knowledge

Contact Us

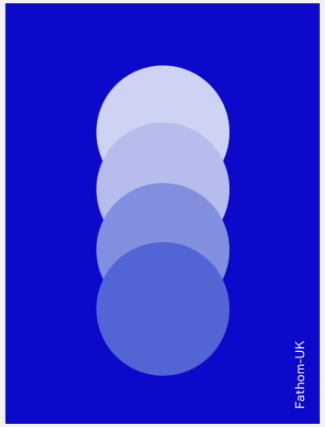
Fathom's Flood Hazard Data & Maps

Fathom's datasets solve some of the greatest challenges facing flood mapping and hydrology



Global Flood Map

Global flood mapping from the cutting edge of scientific research.

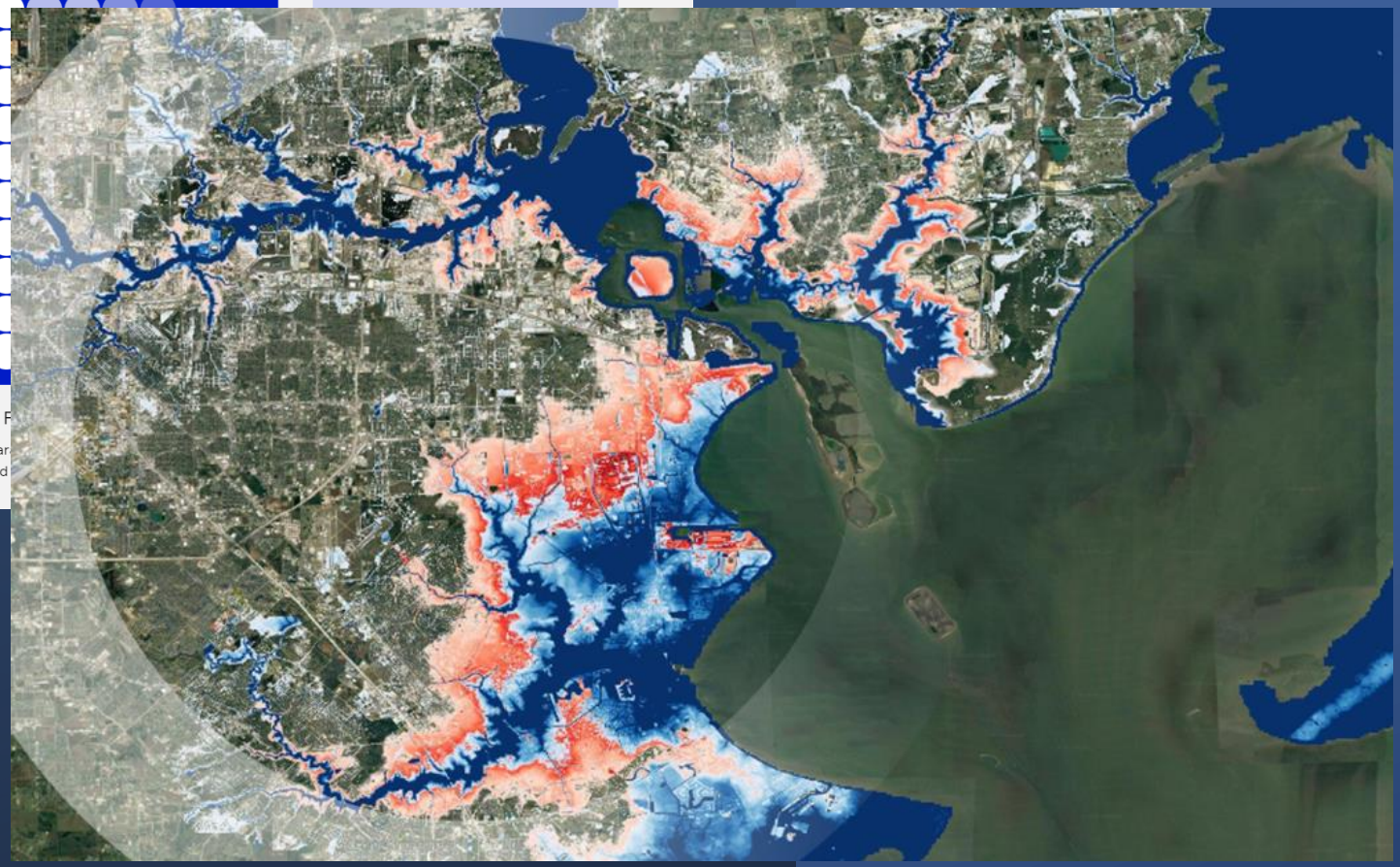


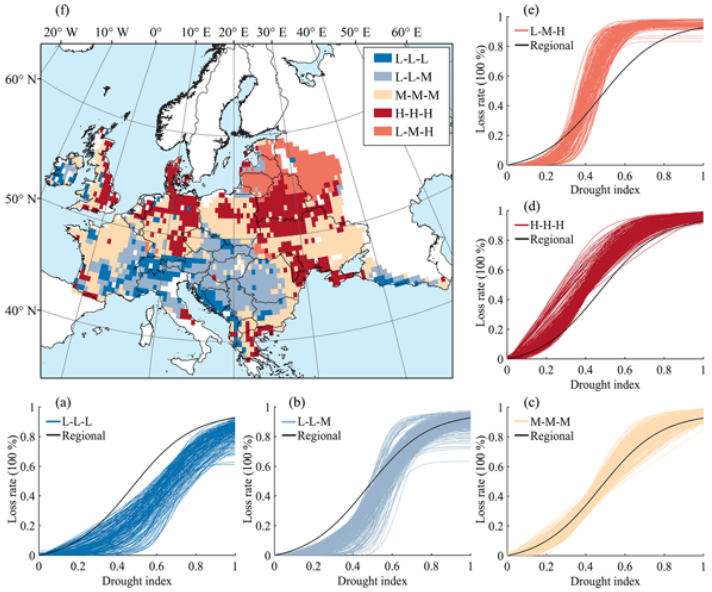
UK Flood Map

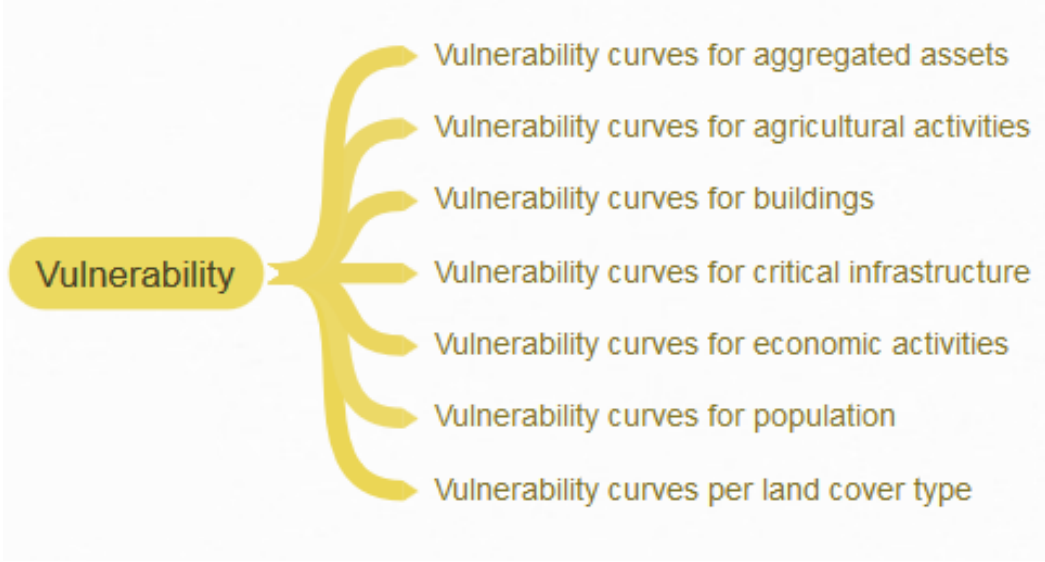
Comprehensive flood modelling for the whole of the United Kingdom.

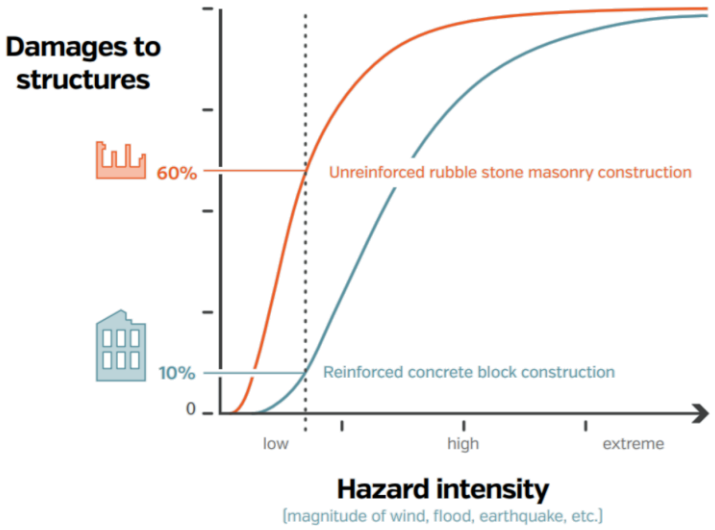
US F

A par
flood









Appendix D – Vulnerability ratings

Table 1 presents the vulnerability ratings of project sectors based on expert judgment and a review of the engineering literature

Table 1 Vulnerability ratings of project sectors (based on expert judgment and a review of the engineering literature)

	Geophysical hazard			Climate hazard						Climate-related long-term changes	
Sector[9]	Earthquake	Seismic induced landslide	Volcanic activity	Flood	Tropical Cyclones / Strong winds	Drought	Wildfire	Rainfall-induced landslide	Heat wave	Mean surface temperature	Water scarcity
Food security (agricultural production)	2	1	2	3	3	3	3	1	3	3	3
Housing	3	3	3	2	2	2	2	3	2	2	2
Road transport	3	3	3	3	2	1	1	3	2	2	1

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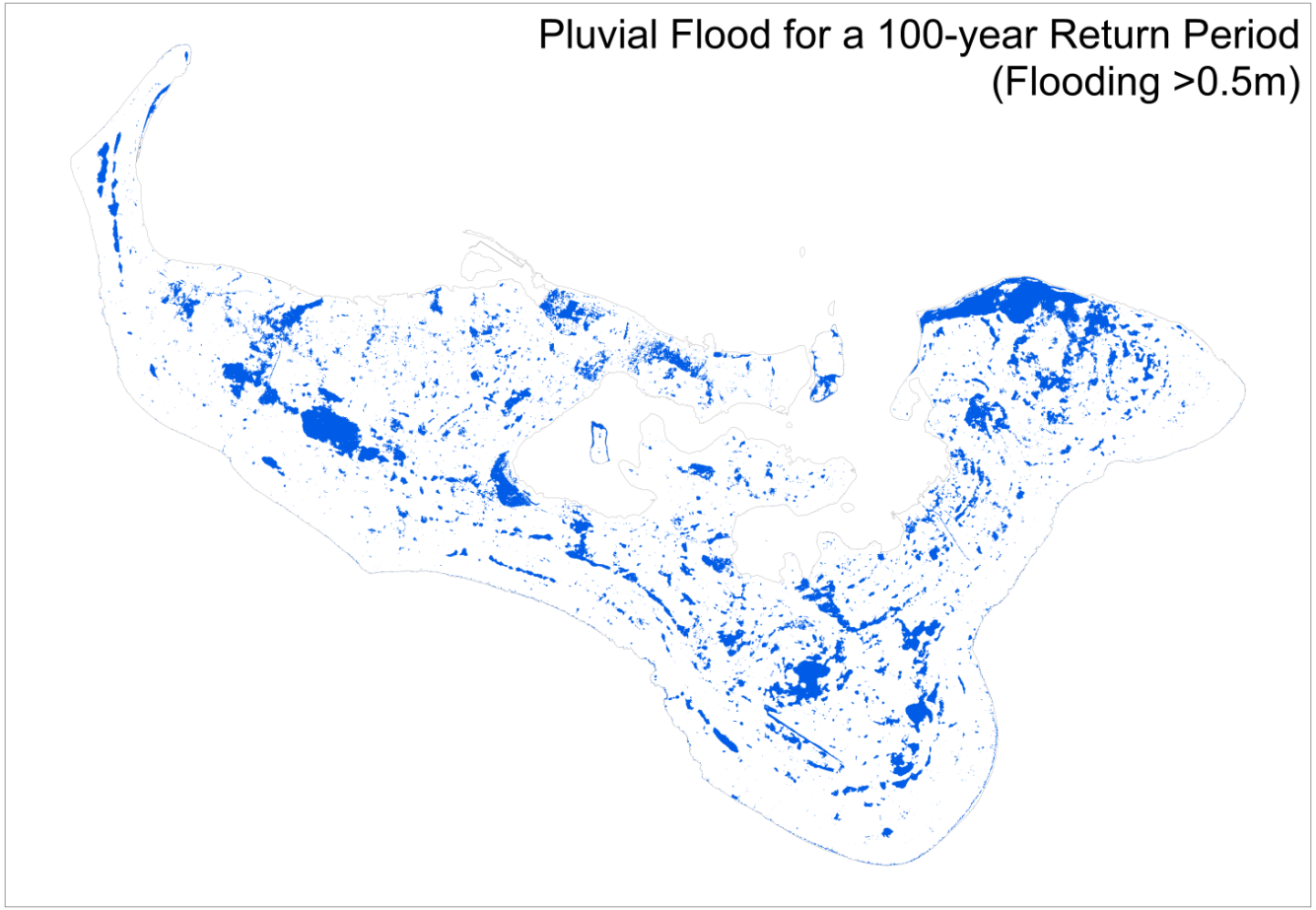
Risk metrics

Risk > Risk indicators from previous studies



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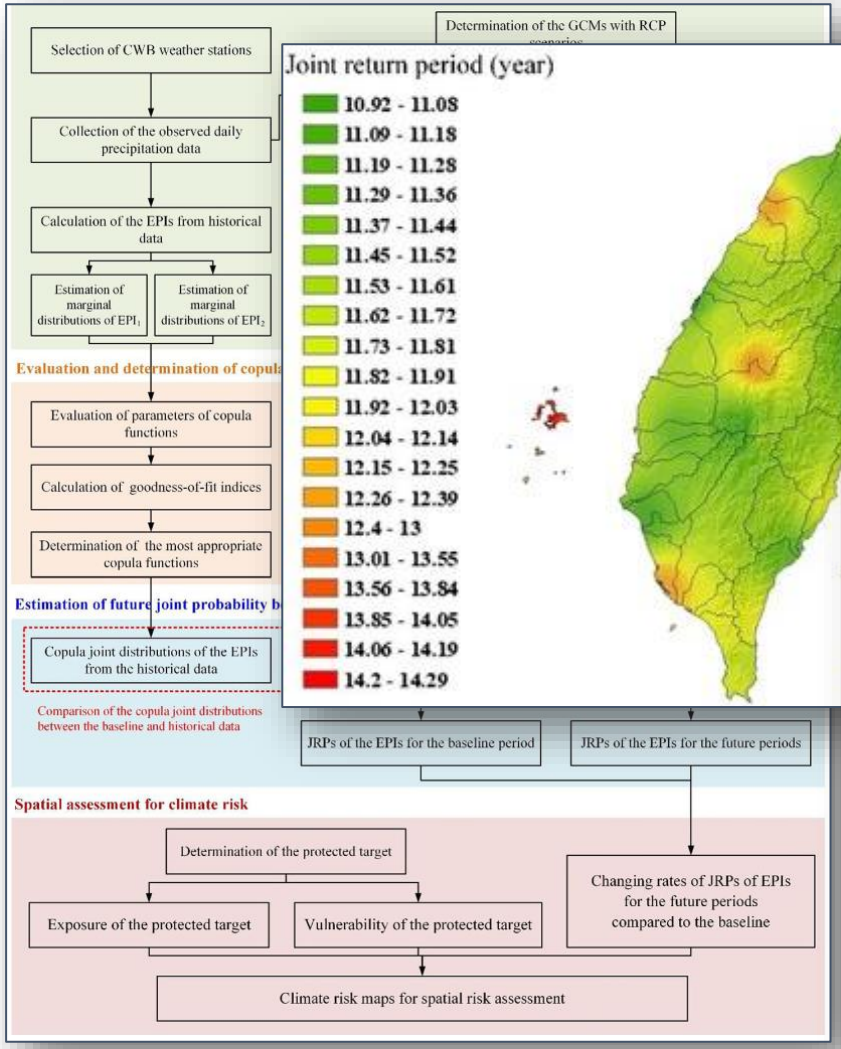
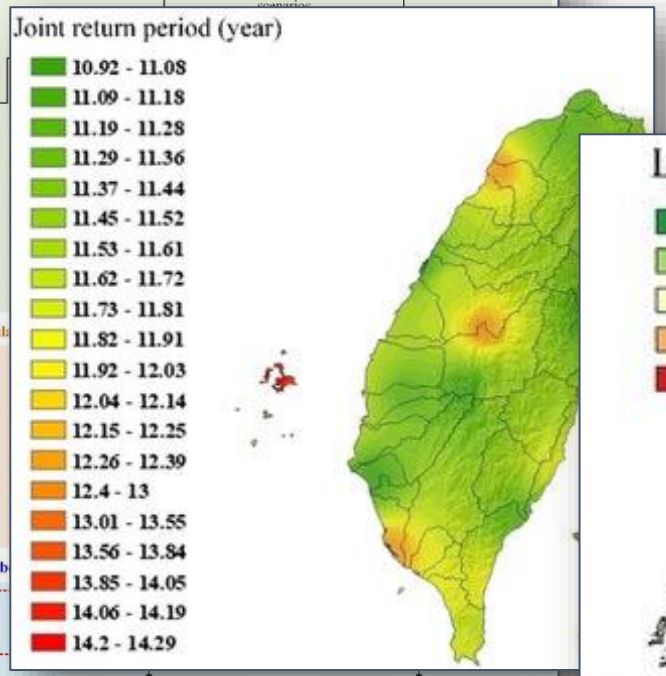
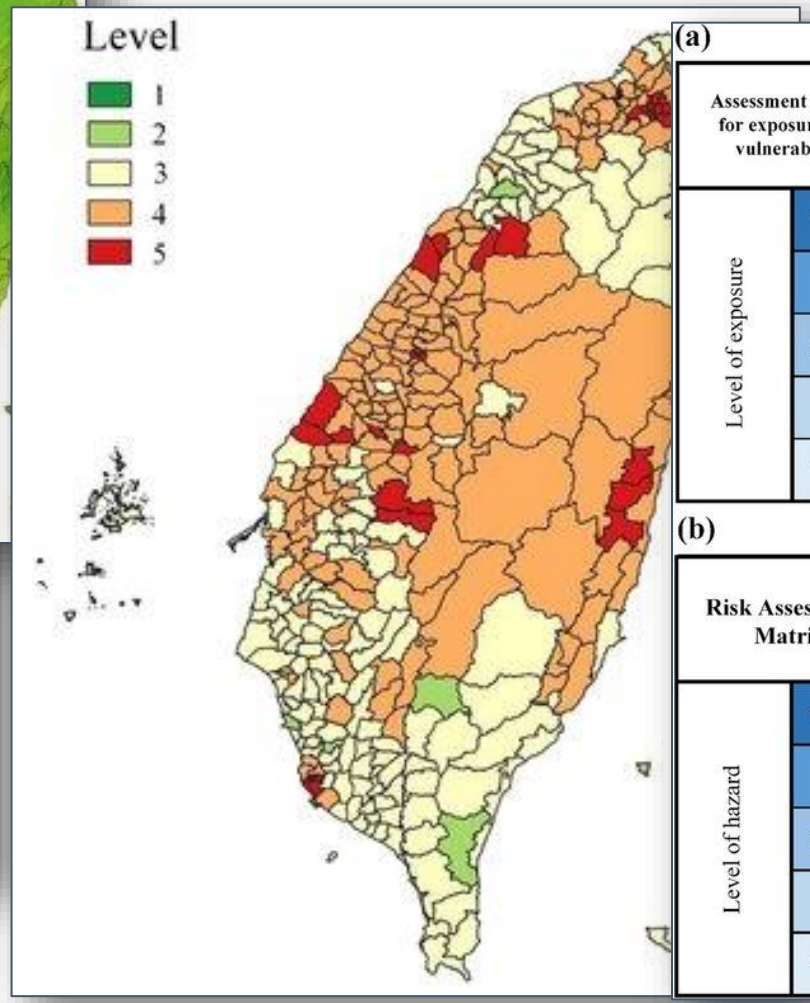
Risk Information: Qualitative vs Quantitative







(a)

Assessment matrix for exposure and vulnerability		Level of vulnerability				
		Very high	High	Moderate	Low	Very low
Level of exposure	Very high	Very high	Very high	High	High	Moderate
	High	Very high	High	Moderate	Moderate	Low
	Moderate	High	Moderate	Moderate	Moderate	Low
	Low	High	Moderate	Moderate	Low	Very low
	Very low	Moderate	Low	Low	Very low	Very low

(b)

Risk Assessment Matrix		Level of exposure and vulnerability				
		Very high	High	Moderate	Low	Very low
Level of hazard	Very high	Severe	Severe	Significant	Significant	Moderate
	High	Severe	Significant	Moderate	Moderate	Minor
	Moderate	Significant	Moderate	Moderate	Moderate	Minor
	Low	Significant	Moderate	Moderate	Minor	Negligible
	Very low	Moderate	Minor	Minor	Negligible	Negligible

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ADB FutureWater

Endorsing & downscaling

Data generation

Improving data management

Translation & communication

Guidance & capacity building

Resource pooling

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FutureWater

Poll

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What is the biggest **climate/natural hazard data gap** that you currently face?

- **Base data** (e.g., digital elevation model)
- **Exposure data** (e.g., assets, economic activity)
- **Hazard data** (e.g., climate/seismic models)
- **Vulnerability data** (e.g., social wellbeing, asset condition)

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ADB FutureWater

Poll

www.mentimeter.com Code 5265 8243

Which area is the greatest priority for your institution now?

- Endorsing & downscaling regional datasets
- Data generation
- Strengthening data management
- Translation & communication
- Guidance & capacity building
- Resource pooling

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ADB FutureWater

Role of the private sector

Source: uber

Source: Planet Labs

Role of communities

- Generators
- Validators
- End-users

KoboToolbox

Knowledge & research partnerships

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RESOURCES

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Asia Pacific Risk & Resilience Portal
Bridging the science policy gap for informed action
⌘ Data Explorer
700+
Datasets
100+
Policy documents
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EM-DAT
The International Disaster Database
Centre for research on the Epidemiology of Disasters — CRE

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WHAT'S NEW

First Scientific and Technical Advisory Group (STAG)

More info

1 2 3 4 5

EM-DAT: DISASTERS OF THE WEEK

Week 20-2023: May 15 - May 21

Natural disasters:

2023-0293 Floods; Emilia-Romagna Region, Italy
2023-0296 Severe weather; Phichit Province, Thailand
2023-0297 Severe weather; Mongolia
2023-0298 Wildfires; Cáceres Province, Spain
2023-0300 Typhoon 'Mawar'; Guam
2023-0319 Floods; Gracac Municipality (Zadar County), Croatia
2023-0320 Volcano Popocatépetl eruption; Mexico
2023-0321 Floods; Bosnia and Herzegovina

Technological disasters:

2023-0310 Stampede at the entry of Cuscatlan stadium , San Salvador, El Salvador
2023-0311 Shipwcreck; Nsanje, Malawi

1 of 403 next ›

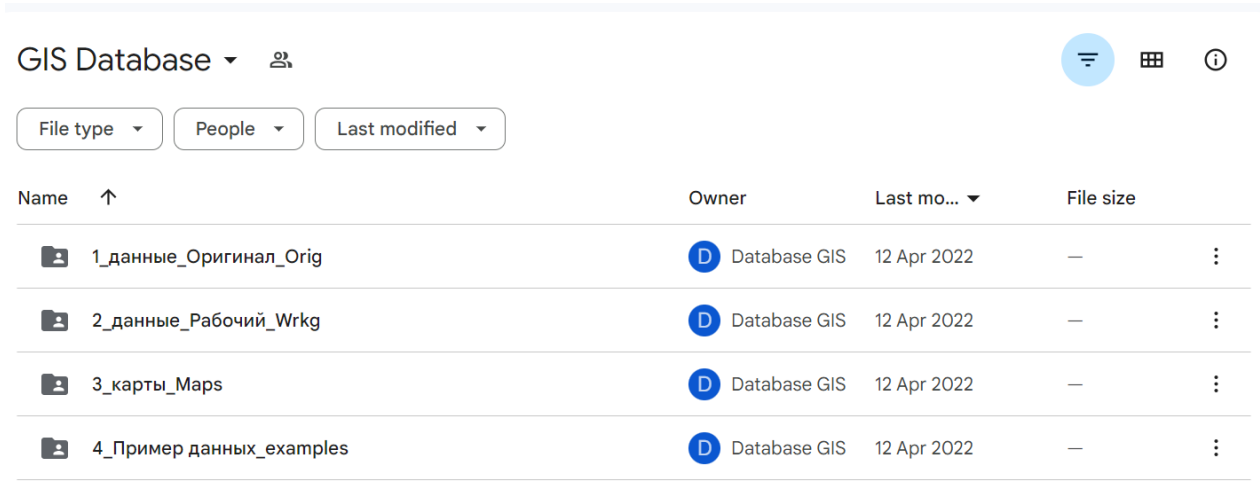
CENTER
FOR EMERGENCY SITUATIONS
AND DISASTER RISK REDUCTION

PERMANENT INTERSTATE BODY -
INTERNATIONAL ORGANIZATION

ЦЕНТР
ПО ЧРЕЗВЫЧАЙНЫМ СИТУАЦИЯМ
И СНИЖЕНИЮ РИСКА СТИХИЙНЫХ БЕДСТВИЙ

ПОСТОЯННО ДЕЙСТВУЮЩИЙ МЕЖГОСУДАРСТВЕННЫЙ ОРГАН -
МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ

REGIONAL GIS DATA REPOSITORY



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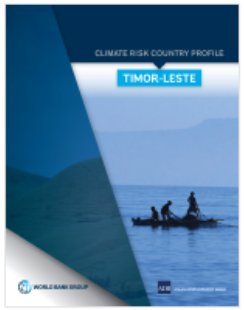
Who can access Sentinel data and how?

A free, full and open data policy has been adopted by the EU for the Copernicus programme, which foresees access by all users to the Sentinels core products. Outlined below are the main data access portals, however there are a number of others available that are not mentioned. As a participant of the Copernicus Masters, you

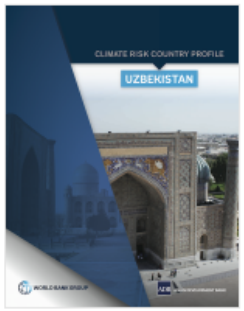
Climate Risk Country Profiles



REPORTS | 18 NOV 2021

Climate Risk Country Profile: Timor-Leste

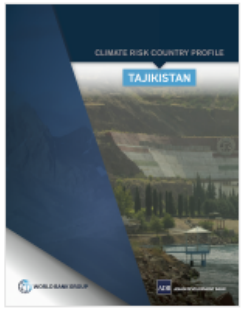
This publication synthesizes climate characteristics and projections, vulnerability to natural hazards, sectoral climate change impacts, and adaptation priorities in Timor-Leste.



REPORTS | 29 SEP 2021

Climate Risk Country Profile: Uzbekistan

This publication synthesizes climate characteristics and projections, vulnerability to natural hazards, sectoral climate change impacts, and adaptation priorities in Uzbekistan.



REPORTS | 29 SEP 2021

Climate Risk Country Profile: Tajikistan

This publication synthesizes climate characteristics and projections, vulnerability to natural hazards, sectoral climate change impacts, and adaptation priorities in Tajikistan.

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