



Water Sector Resilience to Disaster Risk and Climate Change

18th World Water Congress
*Promoting Investment in Disaster Risk Reduction and
Climate Change Adaptation: Policies and Innovative
Approaches for a Resilient Future*

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OUTLINE:

1

THE NEED OF DISASTER REDUCTION RISK (DRR) AND CLIMATE CHANGE ADAPTATION (CCA) IN WATER SECTOR INFRASTRUCTURE

2

THE NEED OF DISASTER MITIGATION & RESILIENCE FUNDING IN INDONESIA

3

INTERNATIONAL DISASTER RESILIENCY FUNDING BEST PRACTICES

4

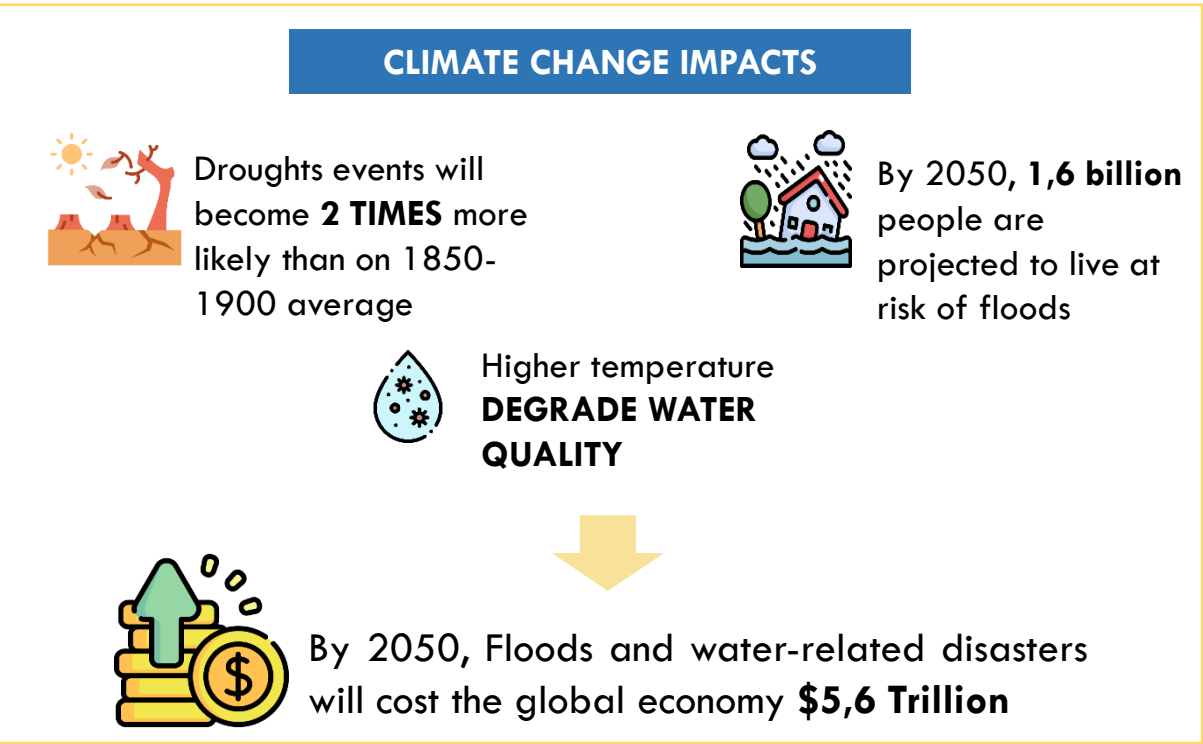
DRR & CCA FUNDING DEVELOPMENT OPPORTUNITIES



1

THE NEED OF DISASTER REDUCTION RISK (DRR) AND CLIMATE CHANGE ADAPTATION (CCA) IN WATER SECTOR INFRASTRUCTURE

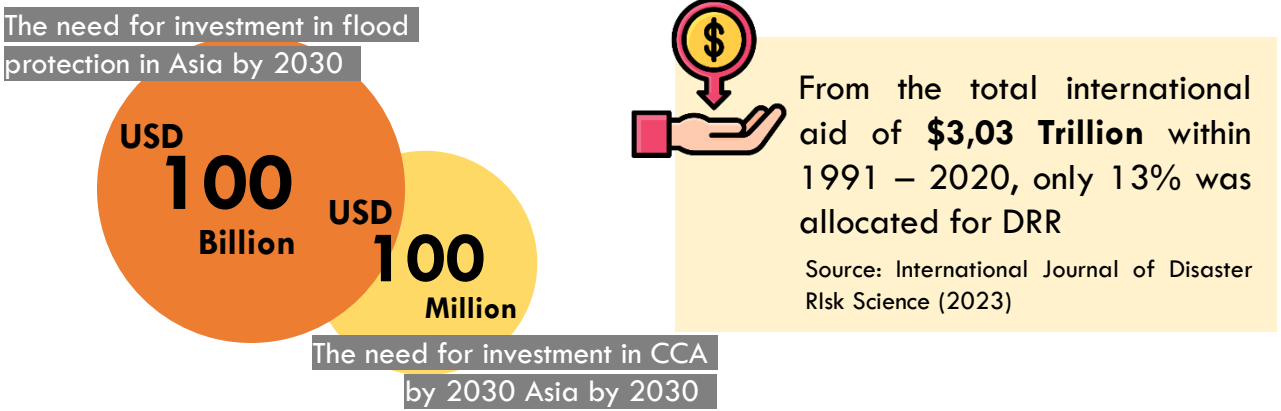
Why Financing and Investment in Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA) is needed?



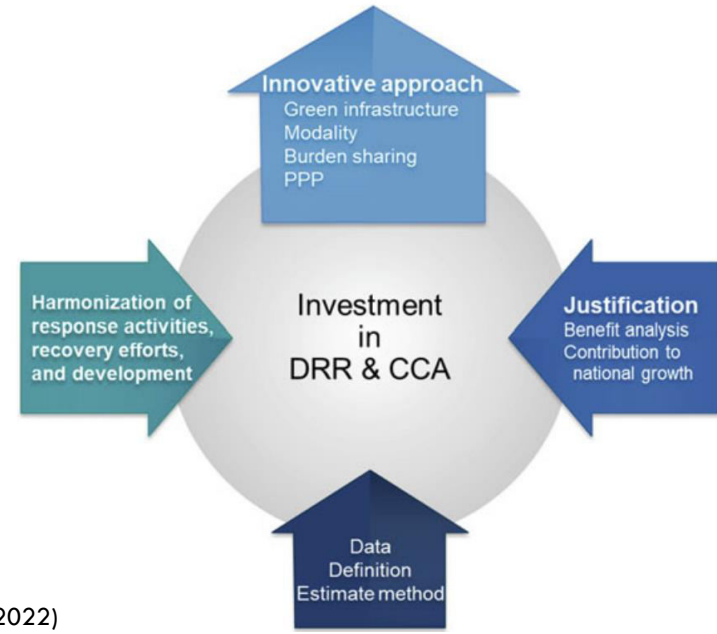
Need for Investment in **Disaster Risk Reduction (DRR)** and **Climate Change Adaptation (CCA)** to reduce the risks and impacts of disasters

Source: GHD (2022), Ishiwaturo and Sasaki (2022)

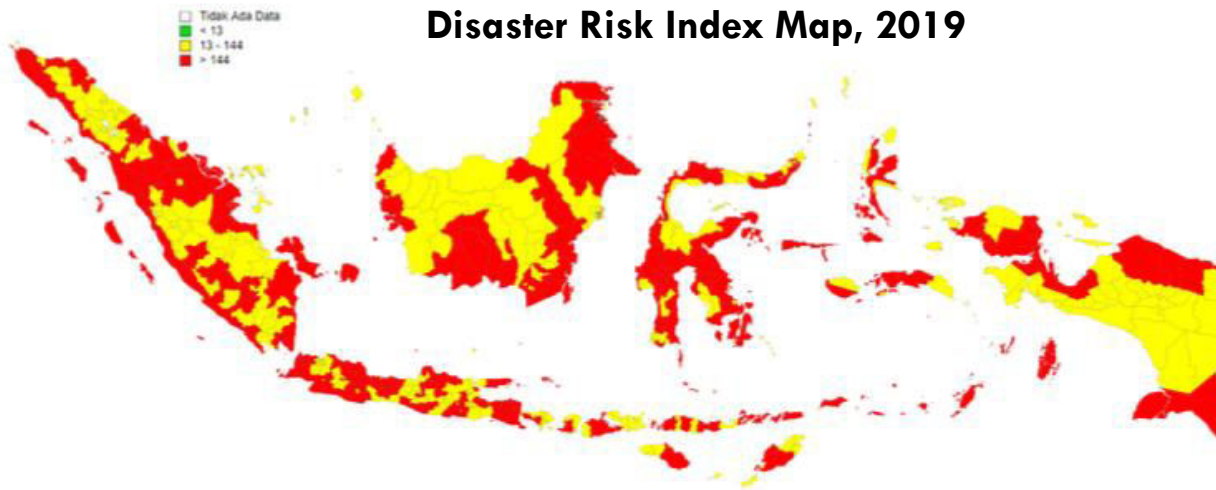
Investment Need for Flood Protection and CCA by 2030



Required approach for Investment in DRR & CCA



Disaster Risk Index Map, 2019



Indonesia has high risk levels of natural disaster in all regions, medium and high.



237 out of 514 regencies and cities have a high disaster risk index.



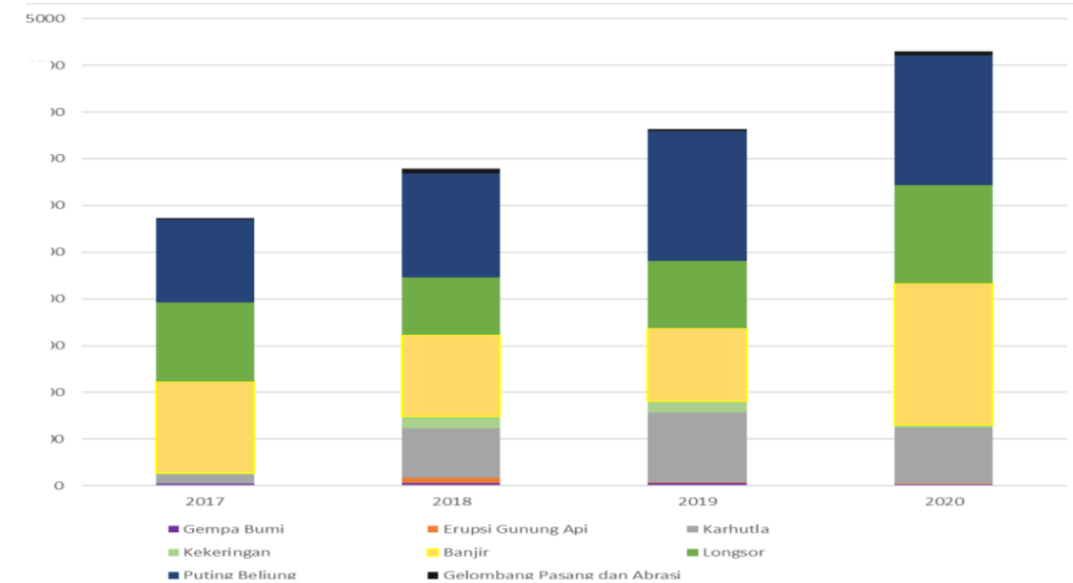
Indonesia is exposed to more than nine types of natural disasters, with more than **90%** of disasters in Indonesia are hydrometeorological disaster.



Indonesia is ranked **12th** out of 35 countries that are vulnerable to disasters.

Source: Ministry of Finance, 2023

Number of Disasters by Type, 2017-2020



Source: National Disaster Management Agency (BNPB), 2023

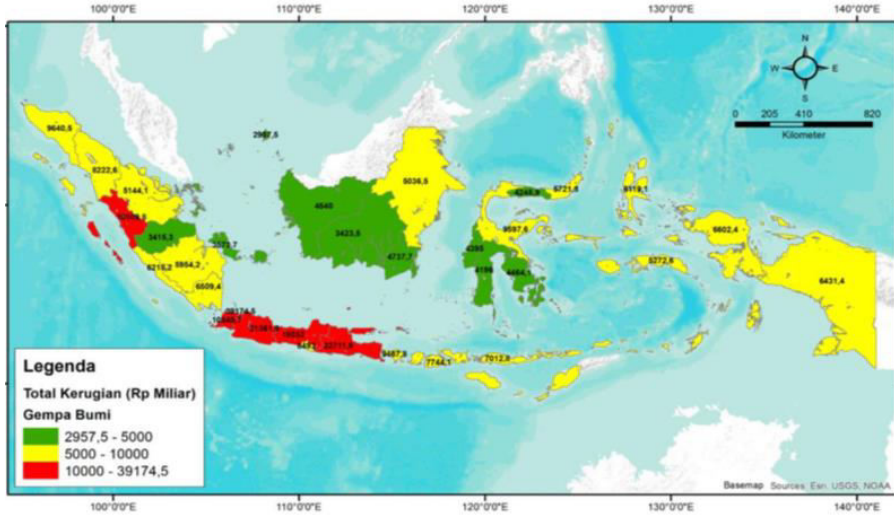


Indonesia has an **increasing frequency and intensity of disasters**, such as floods, droughts, storms, and heatwaves, with **climate change** being one of the causes.

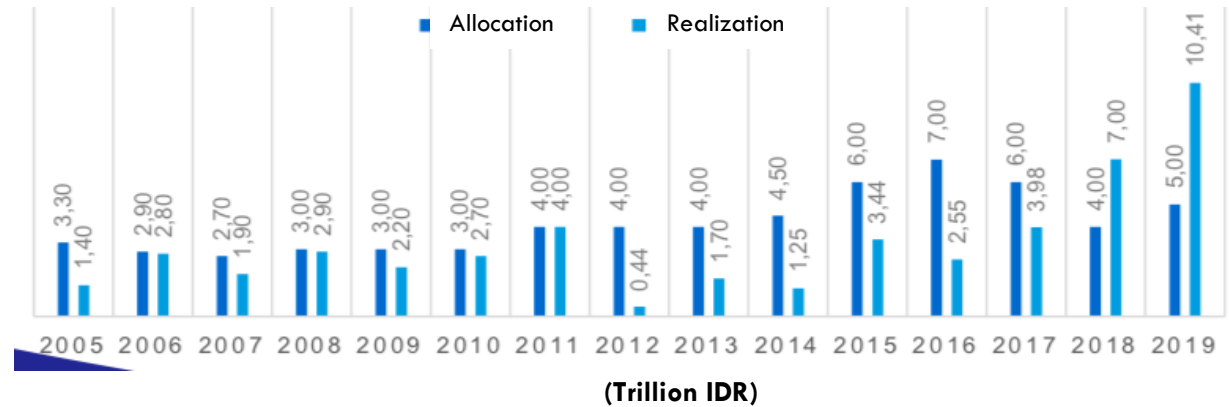


Indonesia faces the risk of **direct losses** due to disasters amounting to **more than IDR 20 trillion to 50 trillion annually**.

Map of Earthquake Losses to School, Hospital and Government Office Buildings (in Million IDR)

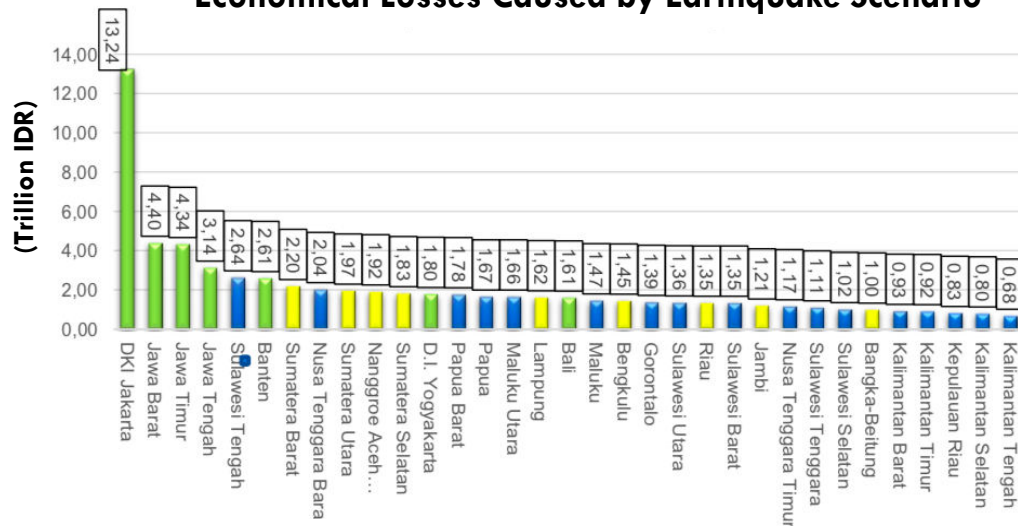


Natural Disaster Reserve Fund Allocation and Realization (2005 – 2019)

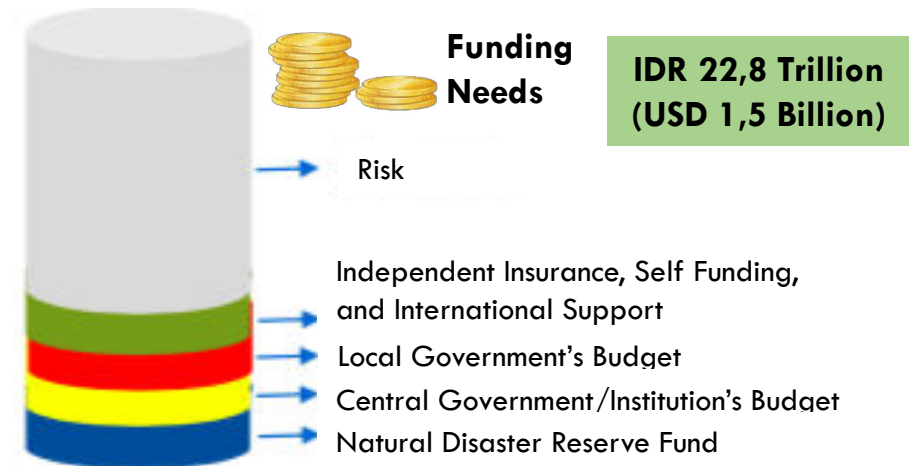


Source: Ministry of Finance, 2023

Economical Losses Caused by Earthquake Scenario



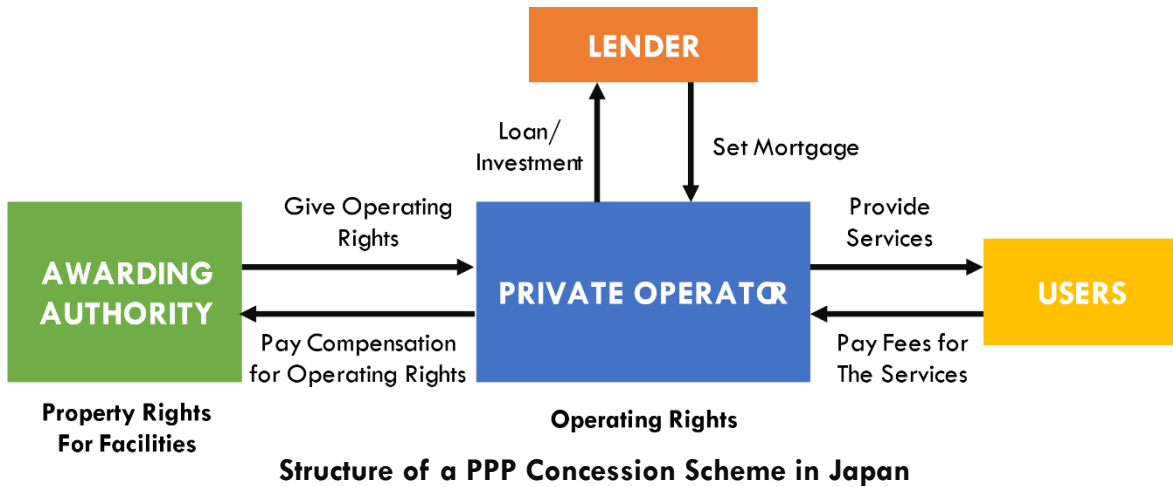
Source: Ministry of Finance, 2023



Source: Ministry of Finance, 2023



RESILIENT INFRASTRUCTURE PUBLIC-PRIVATE PARTNERSHIPS (PPPs) IN JAPAN



Resilient Infrastructure Public-private Partnerships (PPPs) in Japan Aim to identify and allocate disaster risks and establish a strong contractual and investment framework to improve infrastructure resilience.



Private operators are to bear the risk of force majeure events. Private operators need to improve the predictability of cash flow

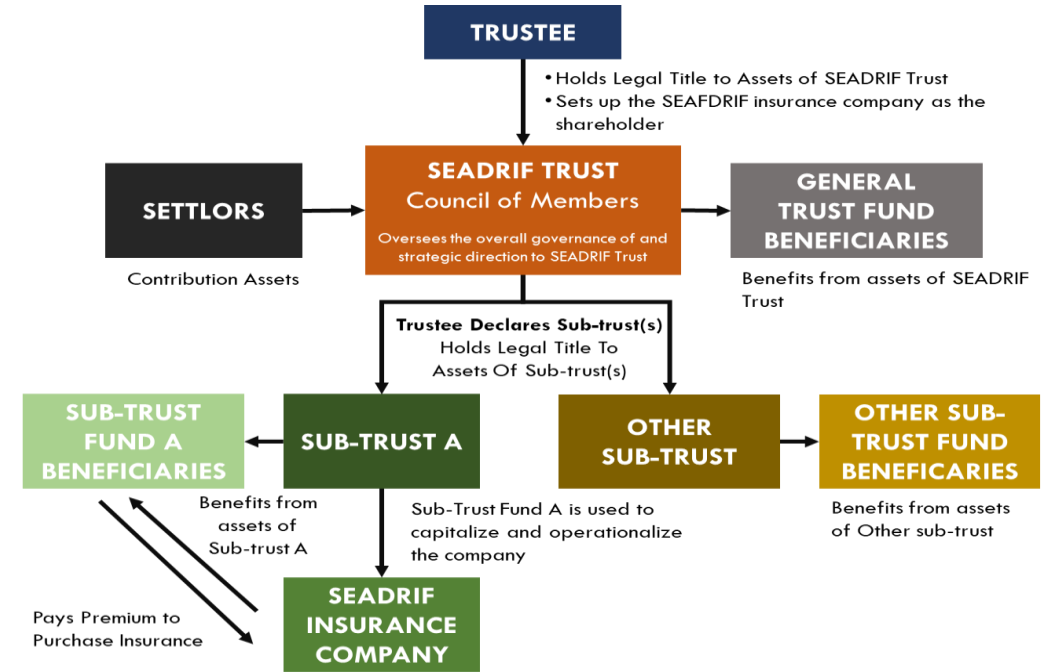


A Notable Learning Experience from Sendai City

- Sendai City concluded the BOT model
- Sendai City developed clearer force majeure provisions by introducing numerical standards.



SOUTHEAST ASIA DISASTER RISK INSURANCE FACILITY (SEADRIF)



Structure of Southeast Asia Disaster Risk Insurance Facility (SEADRIF).

The implemented insurance claim system is:

- **40%** of the policy limit is payable for a **'medium'** disaster
- **100%** of the policy limit is payable in the case of a **'severe'** disaster.
- **The parametric component must comprise at least 50%** of the total premium paid.





Characteristics on Disaster Fund

1. Contingent
2. Need to be delivered immediately
3. Great amount of cost



Moving Forward/Solutions :

1. Bridging Fund that is not relying on government budget and could be delivered immediately to fund the rehabilitation and reconstruction after disaster
2. This bridging fund is billed after it is spent
3. Creating standardization of procurement, implementation of construction and billing mechanism by the third parties

Bridging Fund in Indonesia in the future can be called Indonesian Resilient Fund as a pooling fund perform disaster management agreement with the third parties

THANK YOU

