

# **Disaster Risk Financing Initiative in ASEAN+3 and The potential of CAT Bonds in the Asia-Pacific**

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Please note that the opinions expressed in this presentation are those of the author and not the opinion of the Ministry of Finance.

# ASEAN+3 Finance Ministers' and Central Bank Governors' Meeting

## Framework

- Member countries : Brunei, Cambodia, China, Indonesia, Japan, Korea, Lao PDR, Malaysia, Myanmar, the Philippines, Singapore, Thailand, Vietnam
- Co-Chairs (2025): China, Malaysia

### Pillars

#### Pillar 1

Chiang Mai Initiative Multilateralisation (CMIM)

#### Pillar 2

ASEAN+3 Macroeconomic Research Office (AMRO)

#### Pillar 3

Asian Bond Markets Initiative (ABMI)

#### Pillar 4

Disaster Risk Financing Initiative (DRF)

ASEAN+3 welcomes the upgrading of DRF as a regular agenda under the ASEAN+3 finance track at 26th ASEAN+3 Finance Ministers' and Central Bank Governors' Meeting in May 2023

# Disaster Risk Financing Initiative 1)

## Overview of Disaster Risk Financing Initiative

-Disaster Risk Financing (DRF) Initiative aims to further deepen and broaden DRF cooperation among ASEAN+3 members to strengthen the region's resilience against disaster and climate risks.

-The Initiative follows the 2023-2025 Action Plan of the ASEAN+3 DRF Initiative which sets out the key actions to explore insurance solutions and other financial products, facilitate knowledge exchange, and develop technical solutions including a regional data repository and monitoring tool, building on the existing regional initiatives such as SEADRIF.

# Disaster Risk Financing Initiative 2)

## Proposal for the 2026-2028 DRF Initiative Roadmap

### **Pillar 1: Support for fundamental DRF tools & foundation building for advanced tools:**

Providing continuous support to raise awareness and develop national DRF tools as fundamental and overarching measures, in collaboration with organizations such as the World Bank and ADB.

- Support for raising awareness of DRF and foundational tools
- Technical assistance for foundation building for advanced DRF tools

### **Pillar 2: Expansion of insurance products tailored to needs of national government:**

Leveraging existing ASEAN+3 frameworks: SEADRIF Insurance Company will lead efforts to develop tailored sovereign insurance policies as medium-term deliverables

- Expansion of insurance products for the member countries

### **Pillar 3: Exploration of options beyond traditional insurance products:**

Initiating discussions on new DRF options based on regional demand to better utilize existing mechanisms and address gaps not covered by current DRF mechanism, with a view to long-term development

- Promotion of Climate Resilient Debt Clause (CRDC)
- Exploration of contingent financing expansion
- Exploration of CAT bond market development

# Protection Gap in Asia-Pacific region 1)

## Protection Gap

- Protection gap = the difference between the economic loss caused by natural disasters and the amount compensated by insurance or other means.
- It is a structural challenge that delays recovery and reconstruction from disasters and has a significant impact on sustainable development.
- In the Asia-Pacific region, this gap is particularly pronounced, with 91% of economic losses being underinsured by 2023.

## Current situation

- Economic losses due to natural disasters in the Asia-Pacific region in 2023 amounted to USD 65 billion.
- Only USD 5.9 billion (9%) of this is covered by insurance, which is significantly lower than the global average coverage rate of 30-35%.
- Damage from flooding is particularly severe, with annual economic losses continuously exceeding USD 30 billion since 2010.

# Protection Gap in Asia-Pacific region 2)

## Public sector challenges

Lack of financial preparedness

- Many governments rely on international aid and emergency borrowing following disasters
- Majority of public infrastructure uninsured or underinsured
- Limited use of precautionary disaster risk financing instruments

Policy implementation challenges

- Incomplete integration of disaster management policies at the national level  
(lack of inter-ministerial coordination and delays in the development of legislation)
- Reduced effectiveness of regional cooperation frameworks

## Private sector challenges

### Slow market development

- Barriers to membership due to high premiums
- Lack of innovative insurance products such as parametric insurance
- Lack of risk awareness and insurance education

### Technology and data constraints

- Lack of detailed catastrophe risk data in most of the Asia-Pacific region
- Challenges in accuracy of risk assessment models

# A risk layered approach

## Overview of the risk layered approach

- A framework for systematically stratifying natural disaster risks according to frequency of occurrence and scale of damage, and applying the most appropriate management approach to each stratum.
  - Advantage 1: Limited resources can be allocated efficiently.
  - Advantage 2: Comprehensive risk management is possible.

## Features of each layer

- High layer (frequency: low / damage: severe)
  - e.g. Large earthquakes, Tsunamis
  - international insurance and reinsurance markets, **CAT bonds**, etc.
- Middle layer (frequency: medium / damage: moderate)
  - e.g. Typhoons, Major floods
  - parametric insurance
- Low layer (frequency: high / damage: relatively minor)
  - e.g. heavy rainfall
  - self-owned risk management by governments and local authorities

# Risk-Layered Disaster Risk Financing (DRF) Approach

- When layering disaster risks according to the magnitude of potential damage:
  - For **risks with a high probability of occurrence but minor damage**, reduction and prevention strategies are the most cost-effective.
  - As there are limits to risk reduction, **relatively small risks that cannot be completely eliminated** require preparedness through national budgets and reserve funds.
  - For **risks with greater potential damage**, risk transfer through insurance can be an effective strategy.
- Insurance-linked securities (Cat Bonds) leverage capital markets to address large-scale disasters beyond traditional insurance capacity. However, their limited issuance presents a key development challenge.
- For **medium-scale risks** challenging to address through national budgets alone, contingent credit lines by MDBs and private fund mobilization are anticipated solutions.

The magnitude of damage from natural disasters is generally known to follow a fat-tailed probability distribution. This characteristic indicates that while small-scale disasters occur frequently, extremely large-scale disasters, though rare, can also occur.

**III. Risk Transfer**

**II. Risk Retention**

**I. Risk Reduction and Prevention**

Approach	DRF Instruments	Cases in ASEAN
External Aid	Humanitarian assistance	Emergency Grant Aid (e.g., provided by JICA)
Risk Transfer	Insurance-linked securities	<b>CAT Bond for the Philippines</b> (issued by the World Bank)
	Insurance / Reinsurance, Risk Pools	<b>Flood Insurance</b> for the Lao PDR (under SEADRIF)
Risk Retention	Contingent credit lines	Stand-by Loan for the Philippines (provided by JICA)
	Disaster reserve funds	varying by country
	Contingent budget	
	Budget allocation	

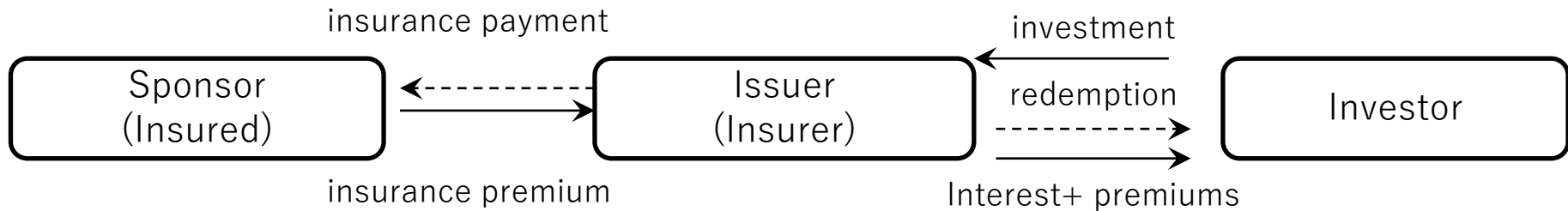
Probability

Severity

# CAT Bonds – Overview 1)

## Overview of CAT bonds

- A mechanism for transferring an insurer's risk exposure to investors through the capital markets.
- Compared to the traditional reinsurance market, it has potentially large risk underwriting capacity, but is currently not large enough to replace reinsurance.



	bond market	reinsurance market	CAT bond market
stock base	Outstanding global rated corporate bond issues (as at 1 July 2023)  <b>USD 23.2 trillion</b>  *S&P Global	Dedicated reinsurance capital worldwide (at the end of 2023)  <b>USD 729 billion</b>  *Gallagher Re	Outstanding global issuance (at the end of 2023)  <b>USD 45 billion</b>  *Swiss Re
flow based	New issues (full year 2023)  <b>USD 7.7 trillion</b>  *S&P Global	Global reinsurance premiums (full year 2023)  <b>USD 378.5 billion</b>  *Atlas Magazine	New issues (full year 2023)  <b>USD 16 billion</b>  *Artemis.bm

# CAT Bonds – Overview 2)

## Advantages of CAT bonds for investors

1. High yields: CAT bonds typically offer higher interest rates compared to other fixed-income securities (e.g. 5-15% p.a.) (also have a risk of principal and interest abandonment)
2. Diversification: Low correlation with traditional asset classes like stocks and bonds. This means they can help diversify an investment portfolio, reducing overall risk.
3. Short Maturities: Usually have short maturities, ranging from one to five years. This reduces the duration risk and allows investors to reinvest their capital more frequently.
4. Hedging Against Specific Risks: Linked to specific natural disasters, such as hurricanes or earthquakes. This can provide a hedge against certain types of risks that are not related to market movements.
5. Stable Income: Investors receive regular interest payments over the life of the bond, providing a stable income stream.

# CAT Bonds in the Asia-Pacific region 1)

	Current situation	Ideal	Issues / Causes	Solution
Sponsor (Insured)	<ul style="list-style-type: none"> <li>• <b>Limited to major (re)insurers and government agencies (Government of the Philippines)</b></li> <li>• No track record of multilateral issuance</li> </ul>	<ul style="list-style-type: none"> <li>• Use by more government agencies and companies</li> <li>• Risk and cost diversification through multilateral issuance</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of awareness and understanding of CAT Bonds due to <b>low number of issuances</b></li> <li>• Complexity of legal and technical requirements</li> <li>• Burden of insurance premiums</li> </ul>	<ul style="list-style-type: none"> <li>• Standardisation of issuance procedures</li> <li>• <b>Cooperation with international organisations</b></li> <li>• Strengthening international cooperation</li> </ul>
Insurance schemes	<ul style="list-style-type: none"> <li>• Parametric triggers are the most common type of sovereign sponsor (Many developed markets, including Japan, use indemnity-type triggers)</li> </ul>	<ul style="list-style-type: none"> <li>• Trigger design with high transparency and quick payment → Parametric advantages</li> </ul>	<ul style="list-style-type: none"> <li>• Basis risk due to limitations in modelling capacity</li> </ul>	<ul style="list-style-type: none"> <li>• Investment in modelling technology</li> <li>• <b>Data sharing initiatives</b>, strengthening public-private partnerships for data collection</li> <li>• Establishment of disaster database</li> <li>• Establishment of a standardised risk assessment framework</li> </ul>
Issuer (Insurer)	<ul style="list-style-type: none"> <li>• Issuers are mainly special purpose vehicles (SPVs), concentrated in financial hubs such as Singapore and Hong Kong</li> <li>• World Bank leverages AAA rating and issues sovereign sponsor CAT bonds without SPVs</li> </ul>	<ul style="list-style-type: none"> <li>• Standardised issuance process</li> <li>• Transparent price formation</li> <li>• Accumulation of sufficient issuance experience</li> <li>• Ensuring access to capital markets</li> </ul>	<ul style="list-style-type: none"> <li>• Legal framework not yet in place, regulatory environment differs from country to country</li> <li>• No standardised issuance framework in place</li> </ul>	<ul style="list-style-type: none"> <li>• Multilateral regulatory harmonisation and <b>standardisation of issuance processes</b></li> </ul>

# CAT Bonds in the Asia-Pacific region 2)

	Current situation	Ideal	Issues / Causes	Solution
Investor	<ul style="list-style-type: none"> <li>• <b>European and US funds specialising in CAT bond investments dominate</b>, followed by insurance companies and pension funds</li> <li>• Participation by individual investors and regional institutional investors is limited</li> <li>• CAT bonds are gaining attention as an ESG investment</li> </ul>	<ul style="list-style-type: none"> <li>• Expansion of the investor base in and outside the region, diversification of the investor base</li> <li>• Use as a portfolio diversification tool</li> <li>• Meeting ESG investment demand</li> <li>• Access to individual investors</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of awareness of CAT bonds among investors, complex risk assessment requirements</li> <li>• Investment channel constraints</li> <li>• Concerns over returns due to increased disaster frequency</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Transparency of pricing information</b> and optimisation of risk/return characteristics, including the use of parametric triggers</li> <li>• Product design in line with investor needs, including ETF-isation (multiperil) and incorporation of ESG factors</li> </ul>
Bond schemes and market functioning	<ul style="list-style-type: none"> <li>• Usually for a period of about three years</li> <li>• <b>Returns average 5-15%p.a.</b></li> <li>• <b>Low correlation with bonds in general</b></li> <li>• Issued mainly in <b>private placement format</b></li> <li>• Issuance in Singapore accounts for over 40% of the region's market share</li> </ul>	<ul style="list-style-type: none"> <li>• Optimal risk-return characteristics</li> <li>• Sufficient liquidity</li> <li>• Diverse investor participation</li> <li>• Efficient price discovery</li> </ul>	<ul style="list-style-type: none"> <li>• Complexity of product design</li> <li>• Uncertainty of price formation due to a market structure centred on relative trading</li> <li>• Liquidity constraints</li> </ul>	<ul style="list-style-type: none"> <li>• Development of distribution markets</li> <li>• <b>Establishment of a unified electronic trading platform</b></li> <li>• Introduction of a <b>market-maker system</b></li> <li>• Introduction of tax incentives</li> </ul>

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