Disaster Risk and Financing Instruments: A Recap

Richard Poulter, Benedikt Signer, Sumati Rajput
Risk transfer for disasters
How an insurance contract works:

**traditional (indemnity) insurance**

- **Policyholder (government)**
- **Insurer**
- **Beneficiaries**

**Loss adjuster** determines loss

Claim event occurs

- **Insurance premium** (usually annual)
- **Reinsurance premium** (usually annual)

- **Insurance payout made**
- **Reinsurance payout made**

- **Reinsurer 1**
- **Reinsurer 2**
- **Reinsurer 3**
How an insurance contract works: parametric insurance

Policyholder (government) 

Insurance premium (usually annual) 

Insurer 

Reinsurance premium (usually annual) 

Reinsurer 1
Reinsurer 2
Reinsurer 3

Insurers payout made 

Reinsurance payout made 

Beneficiaries

Calculation agent determines index value (e.g. windspeed, magnitude, estimated loss)

Claim event occurs

Loss adjuster determines loss

Very fast process, so payout can be made quickly

May not cover all of the loss incurred
What type of insurance is most appropriate for disaster relief, recovery & reconstruction?

- Parametric
- Indemnity

Both types are needed as they serve different purposes.
How does a regional risk pool like SEADRIF transfer risk?

International Reinsurance Market

Country 1

Country 2

Country 3

SEADRIF Insurance Company

Reserves

Seed Capital

Individual Risk Based Premium

Individual Risk Based Payout

Reinsurance Premium

Reinsurance Payout
How an insurance premium is calculated, and how risk pools like SEADRIF can offer cheaper premiums.

Note: The size of the boxes is not meant to be proportional to each component’s actual contribution to the insurance premium.
Financial protection of public assets
Options assessment:
Risk retention versus risk transfer

- **Risk Retention Strategy**
  - Markets won’t insure or will charge excessive premiums
  - Anticipated revenue and working capital can sustain losses in this range
  - Revenue and capital are sensitive to losses in this range

- **Risk Transfer Strategy**
  - Markets may not insure or will charge excessive premiums

How much to retain?

How much to transfer?
Valuation methodology

Basis of reinstatement: replacement cost value (RCV) versus Actual Cash Value (ACV)

Evidence that value per square foot is adequate for occupancy type and in line with current building code costs.

Evidence that inflation is being considered year on year

Schedule of values

<table>
<thead>
<tr>
<th>Location Name</th>
<th>Each location geocoded to street address (at least 90% of schedule)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total insured value at each location split at high granularity (i.e. physical property, contents, stock, hardware/software, fine art, business interruption)</td>
</tr>
<tr>
<td></td>
<td>Occupancy at each location</td>
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<td>Number of Buildings</td>
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Loss experience

<table>
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<tr>
<th>Date of Loss</th>
<th>Cause of Loss (Peril)</th>
<th>Location of Loss</th>
<th>Gross total incurred loss to asset</th>
<th>Deductible applicable to loss</th>
<th>Net loss payable by insurers</th>
<th>Status of Claim (open/closed)</th>
<th>5-year average claim experience by year</th>
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Special considerations

- **Major Renovation Information**
- **Protection details**: sprinkler systems, security (Alarms, Security Staff etc.), other additional protections
- **Basement/Parking Information**: Catastrophe Zone of each location (For Flood, Earthquake and Typhoon)
- **Secondary Modifiers**: collected from building diagrams. These may include EQ resiliency such as base isolation, cladding type, foundation

**Location**: The World Bank Group

- **Country**: United States of America
- **State/Province**: Washington DC
- **City**: Washington DC
- **District**: Foggy Bottom
- **Street, ZIP/Postcode**: High Street NW, DC 20433

**Lower resolution | Lower overall confidence | Higher uncertainties on risk profile**
Developing and structuring a risk transfer framework

Collect and analyze data and information suitable for identifying and quantifying the risk to determine price and capacity (Hazard / Exposure / Vulnerability)

Determine key priorities and requirements for financial compensation

Establish appropriate legislative / regulatory frameworks to enable financial risk transfer, including claims settlement and audit

Ensure procurement regulations enable use of insurance, reinsurance and if needed, third party advisors

Develop competencies, governance and procedures to enable effective risk management
Develop the operational risk transfer mechanism:
Claims management

- Type of insurance product will influence the claims process design
  - Parametric – trigger mechanism, funds released
  - Indemnity – claims notification, loss adjustment and settlement
- Essential to have a clear notification and loss adjustment procedure
- Large scale events – ability to handle and complete large volumes of multiple claims
Shock responsive systems:
Combine Financial and Operational Preparedness

**National Financial Protection Strategy**
- Systems view of sectors and interactions, linked to fiscal risk management

**National Infrastructure Policies**

**Financial Preparedness**
- Pre-arrange Financing
  - Cost-efficient combination of risk retention and risk transfer for the mechanism

**Operational Preparedness**
- Funding Mechanism
  - Efficient procedures to request, approve, and disburse funding. E.g. Maintenance Fund

**Emergency preparedness and Management capacity**

**Data and Analytics**

**Budget, IFIs, Financial Markets**

**Critical Infrastructure Service Continuity**
New Zealand Case Study: Choosing between different options

**Option: Do nothing**
Continue current practice of agencies managing their individual arrangements.

**Option: Partial self-insurance**
Consolidate agency risk financing arrangements into an AoG solution, involving:
- Agencies paying a risk based contribution into a managed fund to cover expected losses;
- Crown self-insuring a layer of calculated risk within Crown’s financial risk tolerance; and
- Ceding risk above Crown tolerance to the insurer market.

**Option: Full self-insurance**
Consolidate agency risk financing arrangements into an AoG solution involving:
- Agencies paying a risk based contribution into a managed fund to cover expected losses; and
- Crown self-insuring the risk of exceptional losses (i.e. those losses exceeding the financial tolerance of the managed fund at a given point in time) without ceding risk to the insurer market.
Disaster reserve funds
What are disaster reserve funds?

Disaster Reserve Funds:

- **Form**: funds set aside as reserve within the budget with specific rules for use or established as a dedicated institution;

- **Financial management**: fulfil key policy objectives to strengthen financial resilience and to improve the financial management of disasters;

- **Disaster response**: provide the government with readily available resources to be used for post disaster expenditure to enable emergency relief and response after a disaster, and long term recovery including rehabilitation and reconstruction;

- **Coordination**: alignment to key processes and systems that enable the flow of funds to ensure they get to the point of need for effective recovery

- **Knowledge and capacity building**: serve as a centre of knowledge and capacity building on disaster risk financing within Government
How are they set up?

Legal basis: Needs a legal mandate

Fund design: Objective, scope, rules

Financial design: Risk appetite for risk transfer, accumulation levels, investment strategy

Regulatory design: How the fund will be operationalized and monitored

Ongoing review and fine tuning: Design adjustments to meet objectives
Indonesia: Pooling Fund within the DRF strategy

The PFB will be a dedicated fiscal mechanism to (i) ensure effective access to sufficient resources for disaster response; and (ii) streamline execution and transparency of spending.

Diagram:
- **Residual Risk**
  - **Sovereign Catastrophe Risk Insurance**
    - To be explored by the PFB with support of this operation, payouts to flow directly into PFB disbursement channels
  - **State Asset Insurance** [Pilot Launched in 2019]
    - PFB to provide technical support and potentially serve as fund flow channel
  - **Household and Agricultural Insurance**
    - (not directly supported under this operation)

- **Contingency Loans**
  - To be explored in future with funds eventually flowing directly through the PFB

- **Pooling Fund Bencana**
  - To be supported by this operation

- **(Re) - Allocation of National and Subnational Budget**
  - (not directly supported under this operation)
How the pooling fund would work?
Indonesia: Pooling Fund operationalization

PDO: To strengthen the financial and fiscal resilience of the Borrower to natural disaster and health-related shocks.

Financing Instrument: Investment Project Financing with Performance Based Conditions

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Mexico’s Federal Budget
0.4% of the Federal Budget is allocated to FONDEN every year

Technical Committee

MoF Budget Unit
MoF Risk Unit
Ministry of Interior

Risk Transfer
Insurance & Cat Bonds

FONDEN
Trust Fund

1. Prevention
2. Emergency
3. Reconstruction
Disaster reserve funds
What are disaster reserve funds?

When does it make sense to have disaster reserve funds:

- To strengthen financial management for disasters by having finance available quickly for disaster response
- To streamline multiple existing process, systems, and sources of financing for more streamlined and better targeted financial response
- To enable immediate relief but also be able to finance longer term recovery and rehabilitation
- To link finance to clear delivery mechanism for disaster response so funds go where they’re supposed to go

What can disaster reserve funds look like?

- Funds set aside as reserve within the budget with specific rules for use
- Separate institution/public service agencies to coordinate and strengthen financial management of disaster response
How are they set up?

Legal basis: Needs a legal mandate

Institutional design: How it will be established and governed

Fund design: Objective, scope, rules

Financial design: Risk appetite for risk transfer, accumulation levels, investment strategy

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- FONDEN Trust Fund

B
- Risk Transfer
  - Insurance & Cat Bonds

Steps:
1. Prevention
2. Emergency
3. Reconstruction