Towards a Comprehensive Approach to Building Economic Resilience to Extreme Events and Climate Change

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\ Trends in disaster losses and how disasters impact governments, people, businesses and economic sectors

\ Global Movement for building economic resilience to disasters

\ How can market-based insurance help with building economic resilience?

\ National regulatory barriers that are hindering access to the global insurance and reinsurance markets
Trends in disaster losses and how disaster impact governments, people, businesses and economic sectors

A look at Overall and Insured Losses Associated with natural catastrophes

Overall and insured losses
1980–2017

- Overall losses in 2017 were US$ 330bn, far greater than those in the extreme years of 2005 and 2008.
- 2011 was the record year for recorded losses at US$ 350bn, due mainly to the Tohoku earthquake and floods in Thailand.
- Insured losses in 2017 were US$ 135bn, the highest figure in the period from 1980 to 2017.

Source: Munich Re NatCatSERVICE
Weather-related loss events worldwide 1980 – 2017

Uninsured and insured losses with 5-year moving average

US$ bn

Uninsured losses (in 2017 values)
Insured losses (in 2017 values)
5-year moving average uninsured losses (in 2017 values)
5-year moving average insured losses (in 2017 values)

Inflation adjusted via country-specific consumer price index and consideration of exchange rate fluctuations between local currency and US$.

Source: Munich Re
Increasing exposure and vulnerabilities such as:

- Fast urbanization and higher concentrations of people and property in cities in exposed coastal regions,
- Poor development planning, construction practices, etc.
- Complex inter-dependent supply chains and trade patterns,
- Cascading failure effects of critical infrastructure,
- Cascading impacts of natural and man-made catastrophes

Increasing incidence and severity of hazards

- Extreme weather-related events due to climate change.
How disasters impact governments

Direct impact

✓ emergency relief and response expenditures,
✓ relocation of affected and/or at-risk citizens,
✓ reconstruction or improvements of non-insured or partially-insured public infrastructure and family dwellings,
✓ costs of social and economic programmes for rehabilitation and recovery,
✓ contingent liabilities for state-owned and other enterprises that are critical to economic recovery.

Indirect impacts:

✓ decreased tax revenues associated with business interruption and decline in GDP growth,
✓ opportunity cost of diverting funds from intended development plans to reconstruction and recovery programmes,
✓ additional expenditures related to effectiveness of social recovery programmes,
✓ increased borrowing costs and potential negative impacts on the sovereign credit rating; and,
✓ migration of population due to loss of livelihoods.
**Direct impact**
- cost of reconstruction of uninsured or partially-insured assets,
- cost of replacement or repairs of uninsured or partially-insured assets,
- health care,
- loss of sources of income,
- decline in property value due to destruction of surrounding infrastructure.

**Indirect impacts:**
- loss of income due to business interruption, unemployment, death or economic decline,
- increased borrowing costs;
- additional costs such as relocation and alternative housing and long-term disability.
At a sectoral level, the economic consequences of some disaster risks could be felt:

- Across an entire supply chain effecting economic
  e.g., disrupt country’s exports, market accessibility or have global impacts that result from supply chain disruptions

In countries with limited economic diversity, a single catastrophe can lead to profound economic impacts.

For low-income nations, these types of economic shocks

- Can deepen poverty levels
- Lead to complex emergencies, requiring significant humanitarian and relief interventions.
The global movement over the last decade and a half and the related public-private partnerships (PPPs) to reduce socio-economic risks of extreme events and climate change
### Un-led global movement to build resilience to extreme events and climate risks

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
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<tbody>
<tr>
<td>1950</td>
<td>Following a sequence of major disasters, several governments requested the UN to coordinate post disaster relief and response support.</td>
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<tr>
<td>1970</td>
<td>Two decades of UN-coordinated relief and response operations. UN General Assembly, stresses prevention and preventive measures and establishes UNISDR.</td>
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<tr>
<td>1990</td>
<td>Paradigm shift from a humanitarian to a development issue: ex ante prevention and preparedness to reduce risks; risk financing &amp; transfer: multi-sectoral</td>
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<td>2005</td>
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<tr>
<td>2015</td>
<td>SENDAI FRAMEWORK FOR DRR</td>
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### Disaster Risk

1. A humanitarian issue engaging civil protection agencies
2. WMO, UNEP, UNESCO and ICSU established international scientific processes and programmes that enabled globally coordinated data collection, scientific research supporting IPCC assessments to underpin UNFCCC COP discussions (Zillman 2009).

### Climate Change

1. The anthropogenic climate change dialogue deeply rooted in the science and environmental communities.
2. Negotiations focus on mitigation.
3. Negotiations also include adaptation; Loss and Damage Program.

### Sustainable Development

1. UN highlights linkages: development, population growth, environmental degradation, ozone depletion, health, clean water and energy.
2. A variety of initiatives between 1992 and 2012: UNEP-FI; UNDG, UN Global Impact; UNEP-FI (PRI); UNEP-FI (PSI); WBCSD, etc.
3. UN brings sustainable development for poverty alleviation to the forefront of international policy dialogue. Focuses funding from international donors, NGOs and philanthropic foundations.

### Management of Extreme Events

- **SDG consultations engages climate change and disaster risk reduction issues.**

### Sources

The COMPLEX global stakeholder landscape supporting the governments

1. GOVERNMENTS
- National to local levels, various ministries and public-sector institutions

2. UNITED NATIONS
- GA, ECOSOC, UNSG Office, CEB
- Specialized agencies
- Other programs and offices
- UN interagency coordination platforms

3. INTERNATIONAL DEVELOPMENT COMMUNITY
- International and regional development banks
- International donors
- Others

4. SOCIO-ECONOMIC GROUPINGS
- (sub)regional
- Others e.g., G7, G20, V20, etc.

5. INSURANCE INDUSTRY AND ITS AFFILIATES
- Primary insurers, reinsurers, brokers
- Multi-lateral industry platforms
- Think tanks and associations

6. NGOs, CIVIL SOCIETIES, NON-PROFITS
- Community Resilience
- Environmental
- Knowledge-based policy and strategy think tanks
- Business linked

7. SCIENTIFIC COMMUNITY, ACADEMIA AND CENTRES OF EXCELLENCE
- Inter-governmental UN Linked
- Non-governmental
- Academia, private and government labs, engineering associations, etc.

8. OTHERS
- Catastrophe risk modelling
- Media
- Regulatory bodies, e.g., Financial Stability Board, etc.

Increasing evidence of a paradigm shift in governments’ approaches, from “post-disaster response” towards a more proactive approach.

Some trends:

- Increasing risk awareness about the underpinning causes of risk
- Shift from fragmented silo line-ministry towards a more integrated approach (within and across government layers)
- Disaster risk management is being integrated in national development plans/budgets
- Involvement of ministers of finance is “slowly” coming into focus.
- Traditional post-disaster government hand-outs proving ineffective and insufficient
- Role of market-based insurance and ART is being recognized by governments.
- Interconnectivity and vulnerability of supply chains

Source: https://www.genevaassociation.org/research-topics/extreme-events-and-climate-risk/integrated-approach-managing-extreme-events-and
How can market-based insurance help with building economic resilience?
Insurance plays an important role in mitigating the macroeconomic costs arising from major Cats.

Impact on GDP growth rate if fully insured

Cumulative effect on GDP level if fully insured

The strongest growth-enhancing effects from insured losses appear in the three years following the Cat, in line with the average timing of insurance payouts.

Inconsequential – or even slightly positive – in terms of economic impact.

It is mostly the uninsured part of catastrophe-related losses that drives the subsequent macroeconomic costs.

A wide range of risk transfer solutions have been developed to support middle- and low-income nations in transferring these risks.

Since 2005, a burst of initiatives supported by the private sector.
The insurance industry is already taking action through its underwriting and specialized services…

\[ \textbf{Offering risk transfer products} \] to:
- Build financial resilience to Nat cat
- Protection of government budgets, e.g., regional pools
- Business interruption, contingent business interruption, supply chain failure

\[ \textbf{Insurers are underwriting and investing in critical infrastructure} \]

\[ \textbf{Setting up Innovation unites, incubators} \] for analytics and adaptation research

\[ \textbf{Offering customers} \] (and increasingly governments) with risk knowledge, preventive solutions with incentives

\[ \textbf{More efficient assessment and pay out} \] systems compared to post disaster aid

Eight primary factors hindering the expansion of market-based insurance…

1. Limited access to risk information and risk pricing difficulties
2. Public policy, legislative and regulatory issues related to, e.g.,:
   - Risk reduction and risk transfer;
   - Enabling the insurance industry to operate
3. General lack of awareness about economic benefits of insurance
4. Need for stakeholder-relevant products
5. Weakness of domestic insurance market in rural and low-income countries
6. Limited take-up linked to post disaster aid and complexity of products
7. \textbf{Regulatory barriers to access global reinsurance (in some countries)}
8. Scalability and sustainability
Need to address national regulatory barriers that are hindering access to the global insurance and reinsurance markets.
The Geneva Association is working with the leading global insurance and reinsurance companies and governments to pave the way to open up access to the global insurance and reinsurance markets.

Through the Global Reinsurance Forum of the Geneva Association, regulatory impediments to accessing the global insurance and reinsurance markets have been identified.

For details please see the Global Reinsurance Forum’s documents at www.GRF.org.

We look forward to working together to help all nations with their efforts to build financial and economic resilience to disasters.
Thank you

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For more information about The Geneva Association: www.genevaassociation.org
References

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   Authors: Maryam Golnaraghi with contributions from: David Bresch, Peter Höppe, KarstenLöffler, Masaaki Nagamura, Ernst Rauch
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   Authors: Maryam Golnaraghi, SwenjaSurminski, and Kai-Uwe Schanz

3) Geneva Association (2017): The “Global” Stakeholder Landscape in Extreme Events and Climate Risk Management
   Authors: Maryam Golnaraghi and Patrick Khalil

   Authors: Maryam Golnaraghi, Mr. Ian Branagan, Mr. Stuart Fraser, Mr. Jonathon Gascoigne, Ms. Anne Marie Gordon

5) Geneva Association (2018a): Climate Change and the Insurance Industry: Taking Action as Risk managers and Investors – Perspectives from insurance industry’s C-level executives
   Author: Maryam Golnaraghi

Building socio-economic resilience to natural disasters requires strong public-private partnerships.

Managing extreme event risks requires clear risk governance and leveraging partnerships with the private sector.

<table>
<thead>
<tr>
<th>Role of government</th>
<th>Role of insurance industry</th>
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<tbody>
<tr>
<td><strong>Provide enabling environments</strong>&lt;br&gt;sound policies and regulations</td>
<td><strong>Share risk knowledge, modeling expertise and risk and pricing expertise</strong></td>
</tr>
<tr>
<td><strong>Layout institutional foundations, policies, regulatory frameworks and institutional mechanisms for coordinated planning and budgeting</strong></td>
<td><strong>Share research and knowledge in preventative measures</strong></td>
</tr>
<tr>
<td><strong>Understand the underpinning causes of risk and facilitate systemic collection of reliable hazard and socio-economic data</strong>&lt;br&gt;e.g., critical infrastructure</td>
<td><strong>Innovate and avail risk transfer products (insurance and ART)</strong>&lt;br&gt;For governments, businesses, communities, individuals (incentives to change behaviour)</td>
</tr>
<tr>
<td><strong>Realize opportunities and enforce risk reduction (preventative and preparedness measures), risk transfer programs (PPPs)</strong></td>
<td><strong>Faster and more efficient claims settlements</strong>&lt;br&gt;Management and payouts</td>
</tr>
<tr>
<td><strong>Invest in educating and raising awareness and incentivize risk ownership</strong></td>
<td><strong>Support development of sound risk transfer programmes with the governments</strong></td>
</tr>
</tbody>
</table>

Source: https://www.genevaassociation.org/research-topics/extreme-events-and-climate-risk/integrated-approach-managing-extreme-events-and
Insurance industry’s value chain – How does insurance work?

- Insurers as risk managers: Insurers assess, price, assume and transfer risk on behalf of their policy-holders, through three methods: pooling of risks, retrocession and securitisation.

- Insurers as investors, the strategy is liability-driven, constrained by regulations and driven by a number of internal and external factors (Asset-Liability Management, ALM).

Stakeholder segments in climate adaptation and disaster risk reduction

- Governments all levels and Policy making bodies
  - OECD
  - United Nations and related organisation s and processes
  - International and regional development banks
  - International donors
  - Insurance Industry and Affiliations
  - Non-governmental organisation
  - Scientific and technical community

- OECD
- Non-governmental organisation
- Governmental organisations
- Other

- United Nations and related organisations and processes
  - OECD
  - International Federation of Red Cross and Red Crescent Societies (IFRC)
  - The Rockefeller Foundation
  - Oxfam
  - The Nature Conservancy
  - Environmental Defence Fund
  - World Wildlife Fund

- Other
  - International and regional development banks
  - International donors
  - Insurance Industry and Affiliations
  - Non-governmental organisation
  - Governments all levels and Policy making bodies

- Non-governmental organisation

- Scientific and technical community

- United Nations and related organisations and processes
  - UN Secretary General's Office
  - General Assembly, the UN Economic and Social Council (ECOSOC)
  - The Chief Executives Board (CEB)
  - UNISDR, UNFCCC
  - UN Specialised agencies and Programmes
  - Inter-agency coordination platforms (UNDG, IASC, etc.) and UN country offices
  - WTO (latest development)

- Other
  - Traditional and social media
  - Catastrophe Risk Modelling Community
  - World Economic Forum (WEF)
  - World Business Council for Sustainable development (WBCSD)
  - Infrastructure-related associations

- International and regional development banks
  - World Bank Group (incl. its GFDRR, GIF, Climate Team, DRFI)
  - Asian Development Bank
  - African Development Bank
  - Caribbean Development Bank
  - European Development Bank

- International donors
  - The G7
  - G20
  - EU
  - Asia-Pacific Economic Cooperation (APEC)
  - Association of Southeast Asian National (ASEAN); South Asian Association for Regional Cooperation (SAARC)
  - Caribbean Community (CARICOM)

- Insurance Industry and Affiliations
  - Primary (direct)insurers, reinsurers, brokers/agents
  - Multilateral industry platforms, international think tanks and industry associations
  - Insurance regulatory bodies, e.g. the International Association of insurance supervisors (IAIS)
  - Sustainable Insurance Forum (SIF)

- Geneva Association (2018a)
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