Enhancing Societal Resilience and the Role of Insurance

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Talking Points

1. Geological risks and insurance
2. Hydrometeorological risks and insurance
3. Risk research on climate risks
4. Risk research on earthquake-induced tsunami risks
5. Disaster risk awareness raising
6. Ecosystem-based disaster risk reduction
7. COP21 and the Paris Agreement
8. Promoting disaster risk financing and insurance
Geological risks and insurance

Kumamoto Earthquakes

- Date of occurrence: 14-16 April, 2016
- Significance: M7.3 (tentative)
- Maximum seismic intensity: 7

- Fatalities: 69
- Injuries: over 1,700
- Total collapse: over 7,800 structures
- Half/partial structural loss: over 138,000 structures

➢ Injuries and structural losses data: Kumamoto Prefecture, as of 22 June, 2016

- Reported claims: 239,749 cases
- Settled claims: 222,981 cases (93% of reported cases)
- Settled amount: \317 billion (US$3.0 billion)

➢ Insurance loss data: General Insurance Association of Japan, as of 20 June, 2016
Hydrometeorological risks and insurance

Typhoon Goni (No.15, 2015)

- Date of occurrence: 13-30 August, 2015
- Maximum wind gust speed: 71.0 m/s (Ishigaki Island)
- Rain: Excess of 80 mm/h (Mie Prefecture)
- Fatality: 1, Injuries: 134
- Total collapse: 10 residential structures
- Half/partial structural loss: over 2,300 structures

- Insured losses: \164 billion (US$ 1.6 billion)

(Typhoon simulation images, The Hydrospheric Atmospheric Research Center at Nagoya University)
### Risk research on climate risks

#### Forecasting future changes in typhoons using climate model data

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<tr>
<th>①</th>
<th>1950 ~ 2004</th>
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<td>Genesis</td>
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<td>2005 ~ 2020</td>
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<td>2021 ~ 2035</td>
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- **Central atmospheric pressure will decrease.** (become stronger)
- **Genesis and tracks will shift eastward.**

Estimates based on the typhoon probability model jointly developed with the University of Tokyo.

*(Tokio Marine Research Institute)*
Risk research on earthquake-induced tsunami risks

Probabilistic Tsunami Hazard Analysis (PTHA)

Underestimation of the inundation area

Consideration of all possible earthquake magnitudes, return periods, large slip areas and other uncertainties

Observed waveform of the 2011 tsunami at Kamaishi GPS station

(Tohoku University IRIDeS)
Disaster risk awareness raising

Disaster Education Classes
Since: 2012
• Number of schools visited: 210
  Number of attendees: 16,300
  (cumulative up to March 2016)
• Focus on local natural hazards, such as earthquake, tsunami, flood, landslide

Disaster Education Website
Since: 2013
✓ Basic knowledge on earthquake, tsunami, typhoon, tornado, torrential rain
✓ Disaster preparedness
✓ Tips to reduce disaster impacts

http://www.tokiomarine-nichido.co.jp/world/egao/
Ecosystem-based disaster risk reduction

Evaluation of the Effectiveness of Ecosystem-based DRR

Indian Ocean Tsunami, December 2004

Land protected by mangroves

Unprotected neighboring village
COP21 and the Paris Agreement

Direct reference to insurance

... areas of cooperation and facilitation to enhance understanding, action and support may include;
(f) Risk insurance facilities, climate risk pooling and other insurance solutions;

(Paris Agreement Article 8-4)

... the Warsaw International Mechanism to establish a clearinghouse for risk transfer that serves as a repository for information on insurance and risk transfer, in order to facilitate the efforts of Parties to develop and implement comprehensive risk management strategies:

(COP Decisions para. 49)
Promoting disaster risk financing and insurance

APEC Finance Ministers Process and the Cebu Action Plan (CAP)

**CAP Deliverables**

- Establish and promote **private disaster insurance schemes**
- Deepen insurance penetration within their economies and develop **regional risk sharing measures**
- Develop a roadmap and network of experts through the support of APFF* for expanding the coverage of micro-insurance and disaster risk finance in member economies

**APEC disaster risk database**

**ADB & OECD report on ‘public finance frameworks’**

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**APFF’s Activities in 2016**

- **Formalize APFF’s DRFI Sub-stream expert group**
- **Setting up opportunities for dialogue with APEC finance ministry officials** (DRFI Workshop in Lima, 13-14 Feb. 2016)
- **Identify economies and risks of priority**
- **Create a framework for disaster risk database**
- **Work with relevant international organizations to promote studies and reports**

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*APFF (Asia-Pacific Financial Forum): A platform for public-private collaboration to develop robust and integrated financial markets in the APEC region.*