



# FINANCING OF NATURAL CATASTROPHES IN ASIA

“The Role of Private Sectors, Governments and Regulators in Natural Catastrophe Management”

FIFTH INTERNATIONAL SYMPOSIUM ON CATASTROPHE RISK MANAGEMENT

24-25 April 2014

Nanyang Technological University, Singapore

Academic Partners:



Centre for  
**Risk Studies**



School of Civil and Environmental Engineering

Acknowledgements:



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# ICRM Symposium 2014

## Financing of Natural Catastrophes in Asia

"The Role of Private Sectors, Governments and Regulators in Natural Catastrophe Management"

### Welcome Messages



#### Prof Haresh Shah

Founding Chairman, Advisory Board, ICRM, NTU;  
Member, Board of Trustees, NTU;  
Emeritus Professor, Stanford University;  
Founder & Senior Advisor, RMS Inc., USA

We are delighted to welcome you to our Fifth International Symposium on Catastrophe Risk Management. Particular welcome goes to our Guest of Honour Ms Jacqueline Loh, Deputy Managing Director, Monetary Authority of Singapore. The Institute of Catastrophe Risk Management (ICRM) has made impressive progress in developing its research agenda, support for research from the government, industry and NTU, and in establishing collaborative programmes with academic and industrial institutions. This year, our Symposium theme is on Financing of Natural Catastrophes in Asia, a theme that is very relevant to this part of the world. Recent losses incurred by governments and insurance/reinsurance organizations due to extreme events in Asia-Pacific have placed this topic as an important discussion topic for ICRM. We are certain that with your participation, the Symposium would help everyone gain a better understanding of the pressing issues and develop mitigation strategies through the concerted efforts of the government, private and public sectors, and the society at large. Lastly to our overseas guests, I also wish you a most wonderful and pleasant time in Singapore.



#### Prof Tso-Chien Pan

Executive Director  
ICRM, NTU

On behalf of NTU's Institute of Catastrophe Risk Management (ICRM), I am most happy to extend our warmest greetings to our Guest of Honour Ms Jacqueline Loh, Deputy Managing Director, Monetary Authority of Singapore; Professor Bertil Andersson, President, NTU; Professor Su Guanng, President Emeritus, NTU; and Speakers and Delegates to the Fifth ICRM Symposium.

Established in 2010, ICRM has been undertaking multidisciplinary research work to understand and manage catastrophe risk arising from natural hazards and man-made disasters. A part of this is the annual symposium that we have been organizing. This 5th Symposium has its theme on Financing of Natural Catastrophes in Asia. We believe that this is particularly relevant due to the rapid economic growth of the Asia-Pacific region, thus creating regions of high vulnerability with population, infrastructure and societies exposed to extreme events. In addition, such risks are likely compounded by climatic change effects. We hope, via the Symposium, to have a rigorous discussion on how to understand and perhaps finance such natural catastrophe risks, propose effective mitigation strategies and regulatory framework, and thus help societies understand and deal with such risks.

We at ICRM are thankful for the continuous support that we have received from the government, our university, and the private sector. We are also thankful for your presentations and discussions over these days. I am sure your participation will make our Symposium rewarding and guide our coming work. Have a good time and to our overseas guests, a most wonderful time in Singapore as well.

### Symposium Synopsis

The Institute of Catastrophe Risk Management (ICRM) at the Nanyang Technological University (NTU), Singapore, is proud to announce the Fifth International Symposium on Catastrophe Risk Management 2014. The theme of this year Annual Symposium is "**Financing of Natural Catastrophes in Asia - The Role of Private Sectors, Governments and Regulators in Natural Catastrophe Management**". The 2-day Symposium will be held from 24 to 25 April 2014 in Singapore.

The past four ICRM symposia addressed important issues related to catastrophe risks facing Asia in light of its impressive economic growth, its middle class growth, and improvements in the lives of people as evidenced by the exponential growth of the infrastructure and assets at risk. Major catastrophes over last 5 to 6 years have demonstrated the vulnerability of major urban centers in Asia, as well as elevated the concerns related to food security and the impacts of climate change on agriculture, farmers' livelihoods, and food security in Asia. The main themes of the past four symposia were:

1. The 2010 Inaugural Symposium introduced ICRM and its agenda for research and education.
2. The 2011 Symposium was dedicated to food and water security and the impact of climate change on these risks.
3. The 2012 Symposium was focused on "Black Swan" type of events, i.e. major catastrophes that were not on the radar screens of planners, policy makers, risk analysts or researchers.
4. The 2013 Symposium emphasized the evolving risks due to extreme events in the Asia Pacific region and whether societies, governments, insurance/reinsurance and financial industries were prepared for such events.

The theme of the 2014 Symposium builds on the themes of the past four symposia. Catastrophe risk in Asia is a confluence of traditional and emerging risks affecting its populations, corporations, and whole societies. It exceeds the individual capacity for risk financing of the affected populations, businesses and societies. It demands holistic and coordinated management and efficient use of insurance and other risk financing instruments aimed to protect the populations, the assets at risks, and support the growth of Asian economies. The main theme of the 2014 Symposium - "Financing of Natural Catastrophes in Asia - The Role of Private Sectors, Governments and Regulators in Natural Catastrophe Management" has been selected to support the important dialogue of the stake holders and help chart the actions leading to sustained reduction of the catastrophe risk in Asia. The 2014 Symposium is structured around the following sub-themes:

- The Current State of Play in Asia – Catastrophe Risks and Their Financing in Asia
- Current Regulatory Environment in Asia
- Public Sector Risk Financing - Regulatory Environment, Solutions and Role of the Private Sector
- Post-Disaster Impact Analysis
- Risk Financing and Transfer

# Program

## Day 1 - Thu, 24 April 2014

### Session 1 – Opening Session

0800	<b>Registration and Arrival</b>
0900	<b>Welcome Greeting</b> <b>Prof Tso-Chien Pan</b> Executive Director Institute of Catastrophe Risk Management, NTU, Singapore
0910	<b>Welcome Address</b> <b>Prof Bertil Andersson</b> President Nanyang Technological University, Singapore
0920	<b>Opening Address</b> Guest-of-Honor: <b>Ms Jacqueline Loh</b> Deputy Managing Director (Monetary Policy & Investment / Development & International) Monetary Authority of Singapore
0930	<b>Presentation 1</b> <b>Financing of Natural Catastrophes in Asia</b> <b>Prof Haresh Shah</b> Founding Chairman, ICRM Advisory Board, NTU; Member, Board of Trustees, NTU; Emeritus Professor, Stanford University; Founder & Senior Advisor, RMS Inc., USA
0950	<b>Presentation 2</b> <b>A Broker's Perspective on Challenges Encountered in Financing Catastrophe Risks</b> <b>Mr Malcolm Steingold</b> Chief Executive Officer, Asia Pacific Aon Benfield, Singapore ICRM Advisory Board, NTU
1010	<b>Presentation 3</b> <b>Challenges in Financing Catastrophe Risks – Reinsurer's Perspective</b> <b>Mr Bernd Kohn</b> Chief Executive Officer & Principal Officer Munich Re Singapore Branch ICRM Advisory Board, NTU
1030	Morning Refreshment

### Session 2 – The Current State of Play in Asia - Catastrophe Risks and Their Financing in Asia

1100	<b>Presentation 4</b> <b>Catastrophe Risks Financing from Indonesian Perspectives</b> <b>Dr Frans Sahusilawane</b> President & CEO, PT Asuransi Maipark, Indonesia
1120	<b>Presentation 5</b> <b>Catastrophe Risks – Financing and Regulatory Landscape in India</b> <b>Mr Yogesh Lohiya</b> Chairman and Managing Director IFFCO-Tokio Marine, India
1140	<b>Panel Discussion 1</b> Session Chair: <b>Prof Su Guanng</b> President Emeritus NTU, Singapore

#### Panelists:

1. **Prof Haresh Shah**, Founding Chairman, ICRM Advisory Board, NTU; Member, Board of Trustees, NTU; Emeritus Professor, Stanford University; Founder & Senior Advisor, RMS Inc., USA
2. **Mr Malcolm Steingold**, Chief Executive Officer, Asia Pacific, Aon Benfield, Singapore; ICRM Advisory Board, NTU
3. **Mr Bernd Kohn**, Chief Executive Officer & Principal Officer, Munich Re Singapore Branch; ICRM Advisory Board, NTU
4. **Dr Frans Sahusilawane**, President & CEO, PT Asuransi Maipark, Indonesia
5. **Mr Yogesh Lohiya**, Chairman and Managing Director, IFFCO-Tokio Marine, India

1225 Lunch

### Session 3 – Current Regulatory Environment in Asia

1330	<b>Presentation 6</b> <b>Regulatory Environment on Catastrophe Risks in Asia – Towards Resilient and Sustainable Societies</b> <b>Mr Katsuo Matsushita</b> Special Advisor and Liaison Officer for Japan and East Asia The Geneva Association, Geneva
1350	<b>Presentation 7</b> <b>Risk-Based Capital in the Philippines – Are Cats the Elephant in the Room?</b> <b>Mr Matthew Maguire</b> Partner NMG Consulting, Singapore
1410	<b>Presentation 8</b> <b>TREIF's Role in Managing Catastrophe Risks in Taiwan</b> <b>Mr Warren Chang</b> President Taiwan Residential Earthquake Insurance Fund (TREIF), Taiwan
	<b>Panel Discussion 2</b> Session Chair: <b>Ms Lee Wai Yi</b> Director, Head of Supervisory Analytics Division, Insurance Department Monetary Authority of Singapore
1430	Panelists: 1. <b>Mr Katsuo Matsushita</b> , Special Advisor and Liaison Officer for Japan and East Asia, The Geneva Association, Geneva 2. <b>Mr Matthew Maguire</b> , Partner, NMG Consulting, Singapore 3. <b>Mr Warren Chang</b> , President, Taiwan Residential Earthquake Insurance Fund, Taiwan 4. <b>Dr Suzanne Corona</b> , Head, Natural Perils, Asia Capital Reinsurance Group Pte Ltd, Singapore
1515	Afternoon Refreshment

### Session 4 – Public Sector Risk Financing - Regulatory Environment, Solutions and Role of the Private Sector

1545	<b>Presentation 9</b> <b>The Importance of Robust Regulation for Effective Catastrophe Risk Management</b> <b>Mr Neil Mathison</b> Executive Chairman, Treaty Aon Benfield Asia Pte Ltd, Singapore
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1605 **Presentation 10**  
**Risk Financing and Transfer – Solutions for the Public Sector**

**Mr Ivo Menzinger**

Head Asia-Pacific, Global Partnerships  
Swiss Re, Singapore

1625 **Presentation 11**  
**The Pivotal Role of Private Sector in Disaster Risk Financing in Emerging Economies**

**Mr Anup Jindal**

CEO and Joint Managing Director  
RMSI, India

1645 **Panel Discussion 3**

Session Chair: **Prof Ravi Kumar**  
Dean, Nanyang Business School, NTU, Singapore

Panelists:

1. **Mr Neil Mathison**, Executive Chairman, Treaty, Aon Benfield Asia Pte Ltd, Singapore
2. **Mr Ivo Menzinger**, Head Asia-Pacific, Global Partnerships, Swiss Re, Singapore
3. **Mr Anup Jindal**, CEO and Joint Managing Director, RMSI, India

1730 **End of Day 1 Symposium**

1800 **Cocktail (Auditorium Foyer)**

1830 **Symposium Dinner (Function Hall 1, Level 3, NEC)**

## Day 2 - Friday, 25 April 2014

### Session 5 – Post Disaster Impact Analysis

0900 **Registration and Morning Refreshment**

0930 **Presentation 12**  
**Application of Lloyd's Realistic Disaster Scenarios in Asia**  
**Mr Hetul Patel**

Chief Actuary, Asia Pacific  
Catlin Singapore Pte Ltd, Singapore

0950 **Presentation 13**  
**Floods, Losses and Controversy: Winter 2013/2014 in the UK**

**Dr Jessica Turner**

Senior Manager, Model Product Management  
RMS, London, UK

1010 **Presentation 14**  
**Post Event Impact Analysis and Implementation of Findings into Underwriting**

**Mr Rajeev Ramaswamy**

Senior Property Product Manager, Asia-Pacific  
Swiss Re, Singapore

1030 **Presentation 15**  
**Disaster Impact Analysis: Before, During and After a Catastrophe Event**

**Mr Brad Weir**

Analytics, Head of Catastrophe Management – APAC  
Aon Benfield, Singapore

**Panel Discussion 4**

Session Chair: **Mr Scott Ryrie**

Principal  
Ryrie Consulting, Singapore  
ICRM Advisory Board, NTU

Panelists:

1. **Mr Hetul Patel**, Chief Actuary, Asia Pacific, Catlin Singapore Pte.Ltd, Singapore
2. **Dr Jessica Turner**, Senior Manager, Model Product Management, RMS, London, UK
3. **Mr Rajeev Ramaswamy**, Senior Property Product Manager, Asia-Pacific, Swiss Re, Singapore

4. **Mr Brad Weir**, Analytics, Head of Catastrophe Management – APAC, Aon Benfield, Singapore

1135 Lunch

### Session 6 – Risk Financing and Transfer

1235 **Presentation 16**  
**Insuring Resilience: Encoding Disaster Resilience and Sustainable Growth through Public, Private & Mutual Mechanisms**

**Mr Rowan Douglas**

CEO Capital, Science & Policy Practice, Willis Group, UK;  
Chairman, Willis Research Network, UK

1255 **Presentation 17**  
**Alternative Risk Transfer Considerations**

**Dr Reto Brosi**

Chief Executive  
Asia Capital Reinsurance Group Pte Ltd, Singapore

1315 **Presentation 18**  
**Catastrophe Risk Financing using Tax-Deductible Reserves**

**Dr Andreas Milidonis**

Senior Research Fellow  
Insurance Risk & Finance Research Centre  
Nanyang Business School, NTU, Singapore

1335 **Presentation 19**  
**Catastrophe Bonds in Asia?**

**Mr Peter Nakada**

Senior Vice President, RMS Inc., USA

**Dr Weiming Dong**

Adj Prof, ICRM, NTU, Singapore

1355 **Panel Discussion 5**  
Session Chair: **Prof Daniel Ralph**  
Academic Director, Centre for Risk Studies,  
Judge Business School, University of Cambridge, UK

Panelists:

1. **Mr Rowan Douglas**, CEO, Capital, Science & Policy Practice, Willis Group, UK; Chairman, Willis Research Network, UK
2. **Dr Reto Brosi**, Chief Executive, Asia Capital Reinsurance Group Pte Ltd, Singapore
3. **Dr Andreas Milidonis**, Senior Research Fellow, Insurance Risk & Finance Research Centre, Nanyang Business School, NTU, Singapore
4. **Mr Peter Nakada**, Senior Vice President, RMS Inc., USA
5. **Dr Weimin Dong**, Adj Prof, ICRM, NTU, Singapore

1440 **Close of Symposium**

**Prof Tso-Chien Pan**

Executive Director  
Institute of Catastrophe Risk Management, NTU, Singapore

1450 **End of Symposium**

### Post-Symposium ICRM Industry Seminar

1500 Seminar Registration and Afternoon Refreshment

1530 **Progress of ICRM Projects on the Development of:**  
**1. Singapore Earthquake Model**

**Prof Tso-Chien Pan** and **Assoc Prof Bing Li;**

Institute of Catastrophe Risk Management, NTU, Singapore

**2. Jakarta Flood Model**

**Prof Charng Ning Chen** and **Assoc Prof Edmond Lo;**

Institute of Catastrophe Risk Management,  
NTU, Singapore

1700 **End of Post-Symposium ICRM Industry Seminar**