

Asia's insurance industry urged to leverage climate data and risk management to close protection gaps



L-R: Mr Derek Heng, Mr Ricky Natapradja, Ms Paige Roepers and Mr Michael Fung

The 21st Asia Nat CAT and climate change summit called for urgent action as Asia faces mounting threats from super typhoons, floods and rising sea levels. It showcased AI-driven risk modelling, parametric insurance, public-private partnerships and ESG-aligned underwriting, while emphasising regional risk pools and workforce upskilling to strengthen resilience and collaboration.

By Reva Ganesan



At the 21st Asia Nat CAT and Climate Change Conference, speakers confronted one of the most pressing challenges of our time: building a catastrophe-ready Asia in the face of escalating climate risks.

Speakers also placed emphasis on the importance of disaster preparedness and risk management in addressing the uncertainties and challenges posed by these threats.

In his opening remarks, Asian Capital Advisors managing director John Spence said Asia bears a heavy burden, with over 40% of the world's natural disasters striking the region- disrupting lives, shattering communities and straining economies.



Mr John Spence

He said insurers and reinsurers are no longer just financial risk

managers – they are the “architects of resilience”.

“You stabilise economies, protect vulnerable populations and enable recovery when disaster strikes. From financing rebuilding efforts to modelling emerging risks and shaping climate-adaptive policies, your role extends far beyond claims. You are system-enablers, forging safety nets that allow governments, industries, and individuals to bounce back stronger,” Mr Spence said.

WMO: Climate science key to adaptive insurance

In his global keynote speech, World Meteorological Organization (WMO) director at regional office for Asia and the South-West Pacific Ben Churchill shared his insights on how the integration of accurate climate science, early warning systems and risk-informed planning can empower insurers, regulators and policymakers to develop more adaptive and forward-looking insurance frameworks, drawing on global insights and data-driven strategies.

NOTEBOOK



Mr Ben Churchill

"Billions of data points are collected daily – from space, sea, air, and land – feeding into numerical models that produce forecasts and warnings. The WMO envisions a world by 2030 in which all nations, especially the most vulnerable, are more resilient to the socioeconomic impacts of extreme weather, climate, water, and other environmental events," Mr Churchill said.

For insurers, he said different timescales of climate intelligence matter: nowcasting for immediate hazards, historical climate analysis for trend evaluation and forecasts for months, years, or decades ahead.

"Increasingly, the largest and hardest-to-predict risks are emerging with shorter lead times, while historical trends are becoming less reliable due to climate change," he said.

"Last year was the hottest on record globally, and in Asia, temperatures averaged just over 1°C above pre-industrial levels. Key hazards include tropical cyclones, significant flooding, heatwaves and droughts- all events that directly affect insurance claims, portfolio risk, and financial stability," Mr Churchill added.

ILO warns of heat risks at work

International Labour Organization senior specialist in occupational safety and health Dr Yuka Ujita focussed her speech on the impact of climate change- especially extreme heat on workers' health, workplaces and businesses.



Dr Yuka Ujita

"Many might assume that workplace deaths are mostly due to accidents in construction, transportation, or mining. However, less than 12% of workplace deaths are caused by accidents. The vast

majority – over 85% – result from work-related diseases," she said.

"The health impacts of extreme heat go beyond heat stroke and exhaustion. Workers are also at increased risk of cardiovascular disease, kidney disease, and other chronic illnesses. Heat exposure is often accompanied by ultraviolet radiation, which can raise skin cancer risks in some regions, and by vector-borne diseases, as mosquito and insect habitats shift with changing temperatures.

From an insurance perspective, this is highly relevant, Dr Yuka said.

"Understanding these risks is critical for designing effective occupational health coverage, risk management strategies, and insurance products for workers," she said.

Panel 1

During a panel discussion, Ocean Ledger chief executive officer Paige Roepers was asked to identify the most pressing climate hazards facing Asia's megacities, especially coastal ones like Bangkok, Ho Chi Minh City, Shanghai, and Tokyo.

"From a coastal perspective – which is where I have the most insight – Asia really is ground zero, both in terms of risk and opportunity. Coastal cities are seeing massive investment and development, particularly in tourism and commercial industries, but that also creates a high concentration of risks," Ms Roepers said.

"Across the region, we're dealing with big risks that manifest as highly localised threats – especially when you factor in poverty levels. Over just five to ten years, coastlines can change naturally through reclamation or construction, and when you add climate-driven threats on top, the risks compound. The challenge is understanding where along these coastlines these different trends intersect, and forecasting them properly," she said.

From a reinsurance brokers' perspective, PT JBBoda Viva Indonesia Reinsurance Brokers president director Ricky Natapradja focussed on Indonesia in which the main hazards would be floods, typhoons and droughts.

"Of these, floods are the most disruptive, especially given recent

losses. They can be triggered by heavy rainfall, cyclones, or typhoons, and when combined with poor planning and weak infrastructure, the impacts are magnified. For example, just a one-hour storm in Jakarta can cause flooding across six major suburbs," Mr Natapradja said.

"Jakarta sits on a plateau and is the lowest-lying city in the country – and with land subsidence adding to rising water levels, the risks are worsening. For underwriters, this poses a major challenge. How do you model treaties or price annual risk when you're relying on historical data but also trying to project the next five to ten years?" he asked.

"We're now seeing many direct insurers in Indonesia start to limit their flood exposure. Instead, they're focusing more on less frequent perils like earthquakes. While earthquakes can be severe, they don't occur as often as floods. Those that still offer flood cover are loading premiums heavily, which makes property and risk coverage increasingly expensive. Standard fire policies often exclude floods, so if you want flood, storm, or water damage protection, it comes at an additional cost," he said.

Going forward, the challenge for underwriters will be to keep risk data accurate and updated in real time, Mr Natapradja said.

Taiiping Reinsurance general manager of analytics centre Michael Fung said, "When it comes to data, I think we need to look at it in two parts. First, the availability of data: many companies and reinsurers are working with tertiary institutions to better measure capacity, so more data is becoming available. The second part – and this is a challenge – is how we combine scientific data with exposure data to assess and underwrite risk".

"However, in many Asian markets, IT systems may not fully support locational data. We work with clients to ensure coverage and products are fair and make sense, but challenges remain. Ultimately, balancing pricing with client expectations is critical, certainty in coverage and insurance is essential for the broader economy to function," Mr Fung said.

Ms Roepers also said the insurance industry is one of the biggest uptakes of geospatial data, in

terms of satellite perspective but at the same time, she said there is a lot of apprehension about what this data can do, and some awe regarding how trustworthy it is and how quickly the information can be obtained.

“From an early warning perspective, we’re not there yet. We don’t have rapid before-and-after metrics in place. For instance, you can task satellites to get data – some companies in the insurance sector provide updates within about two days – but even that isn’t fast enough for real early warning or parametric solutions,” she said.

“However, over the next two to ten years, there’s expected to be significant growth in this space. As costs decrease and computational capabilities improve, along with the introduction of new types of sensors, we’ll have more opportunities for anticipatory action – something that could be extremely valuable for insurance purposes,” she said.

Modelling capabilities and data granularity

In his leadership address on day two, PT Reasuransi MAIPARK Indonesia president director Kocu Andre Hutagalung said, key aspect insurers need to address together is enabling an efficient and effective response to catastrophes.



“Two critical elements emerged from our discussions: first, modelling capabilities and second, data granularity,” he said.

“Data granularity is especially important because decisions around how much risk to retain or transfer – and the associated economic impacts – are increasingly critical for governments in developing countries, where many activities are government-driven. By translating abstract ideas of economic impact into tangible figures through modelling, we can boost government confidence and drive action,” Mr Hutagalung said.

“I believe this is a breakthrough approach. Usually, we are advised to work with global vendors on modelling. But as an underwriter for many years, whenever we received reports from international brokers, we always saw the outputs without understanding how the numbers were derived. Most of the time, we simply had to trust them,” he said.

Closing protection gaps

Speaking on protection gaps, Global Asia Insurance Partnership (GAIP) director Dickson Wong said Asia faces one of the world’s largest insurance protection gaps, with low coverage for natural disasters and health risks threatening both economic stability and livelihoods.



“Globally, the protection gap for natural catastrophes is around \$400bn, but the health protection gap is even larger at nearly \$1tn,” he said.

Mr Wong noted that Asia accounts for a disproportionate share due to low insurance penetration, cultural

perceptions of insurance, limited financial literacy, rapid urbanisation and high exposure to natural hazards like earthquakes and cyclones.

“Risk reduction lowers insurance costs, insurance incentivises preventive behaviour, and higher coverage reduces the fiscal burden on governments. AI-driven flood models serve as complementary tools for developing countries with limited historical data, helping insurers better predict and price risks,” he said.

“A more important issue is insurance literacy- or rather, the lack of it- in society. Some of my friends even feel insurance is a scam. Education is a key challenge, especially in many developing countries in Southeast Asia,” he said.

“There’s also a lack of public safety nets, which places more burden on the private sector. Rapid development and urbanisation mean that insurance and risk assessment are often afterthoughts. Additionally, Asia’s geographic location exacerbates the protection gap: nine out of ten earthquakes occur along the Ring of Fire, and one in three cyclones hit this region,” Mr Wong added.

The full value chain

Overall, the conference saw discussions that emphasised the full value chain- from technology and data to risk modelling, assessment, and preparation – underscoring insurance as a key tool in resilience

Mr Spence said it was a strong call to action for the industry.

The 21st Asia Nat CAT and Climate Change Summit organised by *Asia Insurance Review* and sponsored by Ocean Ledger ran from 25 to 26 August 2025 in Bangkok, Thailand. ■

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