Developing the elements of a disaster risk financing strategy

CONFERENCE OUTCOMES

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OECD
ADB Institute
ADPC
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About this report
In the context of a changing climate and increasing exposure to disaster risks throughout Asia, the Asia Disaster Preparedness Center (ADPC), Asian Development Bank Institute (ADBI) and the Organisation for Economic Cooperation and Development (OECD) agreed to collaborate on the organisation of a workshop and the development of this follow-up report on developing the elements of a disaster risk financing strategy. The workshop, which was held in Bangkok, Thailand on 8-9 May 2018, brought together government officials responsible for disaster risk management, public finances and insurance regulation from 13 countries from across the region, representatives from a number of international organisations and government agencies from outside the region as well as selected private sector representatives with specific knowledge or expertise to share with workshop participants. This report provides an overview of those discussions, enhanced by responses received from participating countries to a questionnaire that was circulated in advance of the workshop. The OECD’s contribution to this project was funded by the Government of Japan.

Organisation for Economic Cooperation and Development (OECD)
The OECD plays a leadership role in supporting the development of strategies for the financial management of natural and man-made disaster risks and has provided guidance and analysis on these issues for the G20 and APEC Finance Ministers. This work is undertaken under the guidance of the High-Level Advisory Board on the Financial Management of Large-scale Catastrophes and the Insurance and Private Pensions Committee. The OECD provides a unique forum for governments to compare policy experiences, seek answers to common problems, identify good practice and work to co-ordinate domestic and international policies.

Asian Disaster Preparedness Center (ADPC)
The ADPC is an independent regional non-profit organization that works to build the resilience of people and institutions to disasters and climate change impacts in Asia and the Pacific. Established in 1986 as a technical capacity building center, ADPC has grown and diversified its expertise across social and physical sciences to support sustainable solutions for risk reduction and risk management across a broad range of specialist areas. ADPC develops and implements cross-sectoral programs and projects on the strategic themes of risk governance, urban resilience, climate resilience, health risk management, preparedness for response and resilient recovery. Our strategic themes are complemented and underpinned by the cross cutting themes of gender and diversity, regional and transboundary cooperation as well as poverty and livelihoods.

Asian Development Bank Institute (ADBI)
The ADBI provides intellectual input for policy makers in ADB’s developing member countries (DMCs). It does so by conducting research with a focus on medium- to long-term development issues of strategic importance that affects the region and through capacity building and training (CBT) activities that contribute to ADB’s overarching objective of poverty reduction. The objectives of ADBI are to identify effective development strategies and improve the capacity for sound development of the agencies and organizations engaged in development work in ADB’s DMCs. ADBI focuses its activities on areas where it has a strategic advantage, such as the analysis of emerging policy issues from regional as well as medium- to long-term perspectives, and the facilitation of policy dialogue among senior DMC policy makers. ADBI also seeks to enhance its visibility, impact, and accessibility through high-quality knowledge products and services. It strives to be a trusted source of insight, knowledge, and information to which policy makers, academics, and others interested in Asia’s development issues turn for guidance.
2017 provided a stark reminder of the need to develop a plan for managing the financial impacts of natural catastrophes – as hurricanes in the United States, earthquakes in Mexico and other catastrophes around the world led to the second largest-ever annual level of economic losses from natural disasters and the largest in terms of insured losses. This is equally true in the Asia-Pacific region which faced a volcanic eruption in Indonesia, tropical cyclones in India and a devastating earthquake in Papua New Guinea. The Asia-Pacific region has accounted for more than 40% of all major natural disasters since 2005 and close to 50% of reported economic losses. Economies in Asia and Oceania have faced 6 of the 10 costliest earthquakes since 1980 and 5 of the 10 costliest floods. For some Asian economies, average annual losses from disasters in recent years have accounted for more than 1% of GDP.

As the world’s population continues to grow – and assets accumulate in disaster-prone areas – the financial impact of natural disasters is sure to increase. Climate change is likely to exacerbate these challenges as the frequency and intensity of many types of extreme events are expected to increase. Disaster and climate risks constitute one of the most significant threats to socio-economic development, undermining hard-won development gains. Disasters often affect the poorest segments of the population disproportionately - destroying the homes and livelihoods of those that do not possess the savings or financial assets necessary to recover.

This risk is clearly recognised in the Sustainable Development Goals and promoting financial resilience against disasters has become an important policy priority. Finance ministers have recognised the need to improve the financial management of disaster risks. For example, in 2012, under Mexico’s presidency of the G20, G20 Finance Ministers and Central Bank Governors invited the OECD to develop a voluntary framework to facilitate the assessment of disaster risk and the development of financial strategies. Building financial resilience against disaster risks has also been a key priority for APEC Finance Ministers - maintained on the agenda through the presidencies of China, the Philippines, Peru, Viet Nam and Papua New Guinea and included in a set of ambitious proposals for further cooperation among APEC economies as part of the Cebu Action Plan.

Building financial resilience to disaster and climate risk requires an integrated strategy that leverages the mandates, tools, strengths and expertise of different government agencies (national and sub-national) as well as the private sector and civil society. This workshop was aimed at making a contribution to these efforts – with a particular focus on implementing three important components of a disaster risk financing strategy:

- **Risk analysis and the collection of disaster loss data:** An accurate assessment of current and future (including in the context of climate change) risk is a necessary input for effective decision making on land-use and development planning, risk reduction investment needs and re/insurance pricing.

- **Leveraging the contribution of international reinsurance markets:** International reinsurance markets can play an important role in absorbing losses from major disaster events and supporting the availability and...
affordability of insurance coverage for disaster risks. Reinsurance companies can also provide underwriting expertise that may not be readily available in the country.

- **Managing disaster-related contingent liabilities within public finance frameworks:** The recovery and reconstruction expenditures governments face as well as the potential for declining revenues as a result of economic disruption in the aftermath can create significant budget volatility, and depending on their management, negative economic impacts that persist some time beyond the disaster event. The effective and active management of these contingent liabilities can reduce the ultimate cost to governments (and economies) of disaster events and build confidence in the soundness of public finances and the government’s ability to respond to disasters.
**SESSION 1**

**Damage and loss data collection and exposure quantification**

The quantification of exposure to disaster risks is a critical prerequisite for disaster risk management. A clear understanding of exposure to disaster risks is necessary for making informed decisions on risk reduction investments, transferring risk to (re)insurance markets and ensuring sufficient public funds are available for responding to disaster events.

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**OECD guidance on disaster loss data collection and exposure quantification**

**Excerpt from OECD Recommendation on Disaster Risk Financing Strategies**

III. RECOMMENDS that Adherents promote comprehensive risk assessment processes that allow for the estimation of exposures and the identification of financial vulnerabilities by:

i) Promoting the development of technologies and expertise in monitoring and assessing disaster risks by government, the private sector and non-governmental organisations, including the scientific and academic communities and, where beneficial, by taking advantage of private sector capability and expertise in the development of risk assessment and exposure models.

ii) Ensuring that data on assets, structural vulnerabilities, hazards and past losses necessary for the quantification of potential exposures is produced, collected, shared and made publicly available, subject to applicable confidentiality and privacy requirements. Efforts to harmonise the collection and reporting of data nationally, regionally and internationally should be made. Post-disaster loss assessments should be completed for significant events, undertaken based on a consistent methodology and co-ordinated with the private sector, in order to support the availability of data necessary for evaluating exposures to disaster risk going forward.

iii) Taking into account both direct and indirect impacts, evaluating both normal and extreme scenarios, anticipating any significant changes in the nature of risk (e.g., as a result of climate change), and accounting for the level of uncertainty inherent in such estimates as well as sectoral, regional and international interdependencies.

**Excerpts from the OECD Recommendation on the Governance of Critical Risks**

III. RECOMMENDS that Members build preparedness through foresight analysis, risk assessments and financing frameworks, to better anticipate complex and wide-ranging impacts. To this effect, Members should:

1. Develop risk anticipation capacity linked directly to decision making through:

   i) the development of capacity for horizon scanning, risk assessment and early warning with a view to ensuring that the results feed directly into timely decision making;

   ii) the identification of critical hazards and threats so as to assess them using the best available evidence, investing in new research and tools where required, setting aside the necessary resources. Risks should be understood in terms of their potential likelihood, plausibility and impacts;

   iii) the adoption of all-hazards approaches to national risk assessment to help prioritise disaster risk reduction, emergency management capabilities and the design of financial protection strategies;

   iv) the revision of their national risk assessment periodically in the light of recent events, shifting priorities, and new information. This process should include the investigation and the assessment of damages and losses derived from disasters as soon as possible after they occur. The national risk assessment should help analyse the drivers behind exposures and the vulnerability of populations, assets and activities that can give rise to critical risks;

   v) the development of location-based inventories of exposed populations and assets, as well as infrastructures that reduce exposure and vulnerability. The assessment process should also consider identifying inter-linkages between different types of critical risks and the possible sequencing of hazardous events and cascading effects, which require cross-sectoral and even international cooperation.
Data on damages and losses from past disaster events can serve as a basis for understanding potential disaster exposure - while acknowledging that future disaster losses may deviate substantially from what has occurred in the past. However, a recent OECD report found that data on damages and losses were only available for 30%-40% of disaster events. The data that is collected is often not comparable across countries due to differences in reporting thresholds and different approaches to disaggregating damages between private and public assets and direct and indirect damages and losses. There are also significant gaps as some countries only collect insured losses while very few consider the indirect impacts of critical infrastructure disruptions. UNISDR and other UN agencies have been encouraging (and supporting) the use of DesInventar as a framework for collecting loss data. DesInventar provides a methodology for collecting homogenous data on occurrence and effects at relatively high level of geographic disaggregation. The framework has been used in approximately 90 countries although not all countries have been able to sustain collect data into recent years. The UNDP has also supported the establishment of the Global Centre for Disaster Statistics at Tohoku University with the aim of improving the availability and quality of disaster loss and damage data.

In some countries, data on insured losses may be more readily available and can potentially provide a basis for estimating overall damages and losses by using information on insurance penetration levels in the affected region.

In many countries, insurance claims data is aggregated by independent companies for the purposes of developing industry-wide loss estimates that are often used in risk transfer arrangements (e.g. industry-loss warranties).

In countries where insurance covers a significant share of losses, this aggregated data could play a role in improving risk understanding.
# Loss data collection practices

**Bhutan:** The Ministry of Home and Cultural Affairs regularly collects data on the number of damaged or destroyed dwellings, businesses, public buildings and infrastructure assets and also collects data on the cost of repairing or reconstructing most of these types of assets (with the exception of businesses). The necessary processes have been implemented to undertake post-event rapid assessments of disaster damages and sectoral impacts.

**Cambodia:** The National Committee for Disaster Management developed the Cambodia Disaster Loss and Damage Information System to collect, store and analyse disaster loss and damage data using the DesInventar methodology. The database includes damage and loss data for roads, dams and dikes, health centres and schools from a number of natural disaster events that have occurred since 1996.

**India:** The Ministry of Home Affairs collects data on the number of dwellings, businesses, public buildings and public infrastructure assets damaged or destroyed by disasters as well as the cost of repairing or reconstructing these assets.

**Lao PDR:** The government of Lao PDR has developed a disaster management information system to collect data on the number of dwellings, public buildings and infrastructure assets damaged or destroyed in the aftermath of disaster events as well as information on impacts in other important sectors, such as agriculture. A coordinating mechanism has been established to allow for data and information to flow between the village, district, provincial and national levels based on standardised reporting forms aimed at ensuring comparable data.

**Maldives:** The National Disaster Management Office is in the process of re-establishing a primary disaster management database based on the DesInventar-Disaster Loss Database. The database will be populated using data collected by local authorities on the number of dwellings, public buildings and public infrastructure assets damaged or destroyed in the aftermath of disasters as well as the cost of repairing or reconstructing dwellings and verified at the national level with the aim of ensuring quality and accuracy.

**Myanmar:** The Ministry of Social Welfare, Relief and Resettlement collects data on the number of damaged or destroyed dwellings, businesses, public buildings and infrastructure assets as well as the cost of repairing or reconstructing those assets. The Myanmar Disaster Damage & Loss Database has recently been established, based on the DesInventar methodology, and is being extended to cover all regions. A common data collection template has been developed with implementation supported by user manuals and training workshops - with plans to develop a mobile reporting platform.

**Pakistan:** The National Disaster Management Authority has developed a disaster management information system (similar to DesInventar) and collects data on damaged or destroyed dwellings, public buildings and infrastructure assets as well as the cost of repairing or reconstructing those assets.

**Viet Nam:** In Viet Nam, there is a legal responsibility for every individual and organisation to report correct damage and loss data to the relevant commune committee for disaster prevention and control and for the central committee on disaster prevention and control (MARD) to collect and assess loss and damage data. A database is being established to store and make use of this data.
Countries in the Asia-Pacific region face a number of challenges in terms of developing and maintaining disaster loss data collection systems. The quality of the data collected at the national level depends on the accuracy and completeness of data reported at the local level. In many countries, local governments may be relatively remote or may not have access to the needed technology for reporting. In some countries, data is not available at the level of individual communes/villages. The national government may exacerbate these challenges where different departments have different reporting forms, use different methodologies or do not share information across government.

One of the primary uses of disaster loss data is to generate (or confirm the accuracy of) hazard and risk maps and catastrophe models. Hazard maps provide information on geographical areas at risk of being affected by a given hazard, normally for a given measure of probability/return period. Risk maps provide information on the potential impact of a hazard, such as potential casualties and damages, normally for a given measure of probability/return period. Catastrophe models make use of hazard and risk maps as well as information on buildings and infrastructure (including structural characteristics) to generate estimates of potential losses (such as average annual losses or probable maximum losses).

Most countries in the region have developed hazard and/or risk maps for key perils and many are also covered in catastrophe models generated by commercial firms. Some governments (e.g. Pakistan) have also developed catastrophe models for their own use.

Catastrophe models provide a number of advantages relative to traditional methods of assessing risk – most notably by providing an assessment that goes beyond what is available through historical records to include events that are possible but have not yet occurred. The level of granularity of the data available is critical to improving the accuracy of model outputs.

To develop catastrophe models, information on building use, construction type, height and age (to understand applicable building code) are considered to be the necessary primary building characteristics, while information on roof, wall and door type are also valuable inputs. Without information on these parameters, loss estimates can vary by up to 20%, according to one estimate.
Hazard is indicative of damage scenario whereas buildings behavior during an earthquake is dependent upon their own vulnerability too.

RMS defines building vulnerability as combination of 4 building characteristics – construction type, occupancy, height and year of construction.

The same applies in terms of the level of resolution where lower resolution data (state/province-level vs. geo-coordinate level) generated loss amounts that differed by one-third. Without a correct measurement of potential damages, it is difficult to know the best to way mitigate the risk.

The availability of sufficient data to develop catastrophe models – particularly in terms of information on buildings and their characteristics – is a critical gap. Many countries (including Bhutan, Mongolia, Philippines) have data on residential dwellings, public and commercial buildings and infrastructure assets that could be used for the development of risk maps and catastrophe models although others only have data on some types of structures (public buildings, infrastructure and some commercial structures in India; residential dwellings in Thailand). Some countries

Increasing use of mobile technology is likely to support the capture of increasing amounts of crowdsourced data (e.g. geo-coded building photos) that will support the development of catastrophe models where comprehensive building databases are not available. The increased availability of publicly-available hazard and building data will also support the continued development of open-source catastrophe models and improve the overall accessibility of these models for resource-constrained organisations. The Oasis Loss Modelling Framework is leveraging the availability of...
this data and the expertise that resides in the insurance and scientific communities to provide increasing access to catastrophe models (i.e. beyond the (re)insurance sector) based on an open-source framework that also facilitates user input into model development and implementation. With the support of donors, it is also planning to build specific peril models in the Philippines (flood) and Bangladesh (cyclone). The Global Earthquake Model (GEM) Foundation is working with governments and industry partners around the world to increase access to earthquake modelling tools and has achieved a high-level of coverage across Asia. Similar to Oasis, GEM makes use of an open-source framework that makes use of basic hazard data (past seismicity, active fault data, seismic recording) and data on exposed structures to provide estimates of potential losses. In some countries, GEM has also extended this analysis to provide estimates of broader social and economic costs from earthquake events.

Ultimately, the contribution of information on past losses and potential exposure to reducing disaster risks will depend on how that information is used. In Japan, the necessary procedures have been put in place to collect data on water-related damages and to make use of that data for assessing the potential benefits of risk reduction investments. The Ministry of Land, Infrastructure, Transport and Tourism’s Manual for Economic Evaluation of Flood Control Investment provides guidance on how information on past damages can be used to estimate potential direct damages to residential, commercial and publicly-owned buildings and infrastructure as well as indirect losses related to business interruption and emergency management costs – and how that information should be used to evaluate the benefit of the investment in terms of expected annual average loss reduction. In Spain, the claims data of the public extraordinary risks insurer (Consorcio de compensacion de seguros or CCS) has been used to support land-use planning and emergency response and also to assess the relative resilience of buildings with different characteristics. Following the Lorca earthquake in May 2011, CCS used its claims data to evaluate the behaviour of different building types in response to seismic impacts and made recommendations to support building-back better. CCS has also made use of its historical flood claims data to develop recommendations on reducing the vulnerability of buildings to flood risk and provide estimates of the actual risk reduction benefit of different measures.

In many of the countries in the region where catastrophe models are being developed, the models are being used to support risk management. In India, catastrophe models are used to support land-use planning decisions. In Mongolia, the National Emergency Management Agency used catastrophe model loss estimates in cost-benefit analyses of potential risk reduction investments. In Pakistan and the Philippines, catastrophe models are being used for both purposes. The Viet Nam Natural Disaster Management Agency uses past damage and loss data for emergency response planning and risk mitigation decisions. UNDP has been encouraging the use of a data ecosystem that aims to incorporate long-term climate trends, historical damage and loss estimates and available evidence on changes in the frequency or severity of climate risks into a decision-support tool for investment in climate change adaptation and disaster risk reduction. The UNDP-supported Global Centre for Disaster Statistics is supporting the capacity of local and national governments to integrate scientific analysis and data on past damages and losses into risk management decisions.
Access to international reinsurance markets

Insurance markets play an essential role in mitigating risks in the economy by encouraging proper risk management and providing a source of financing to respond to the damages and losses incurred by households, businesses and governments as a result of insured events. The pooling of risks faced by many insureds allows for the diversification of those risks across populations, regions, risks, and time, leading to a reduction in the aggregate cost of protection and providing individuals and businesses with the financial protection necessary for making longer-term planning and resource allocation decisions. The pooling of risks by reinsurers allows for (further) diversification, providing an additional layer of risk absorption capacity at a lower cost than can be achieved (in aggregate) by insurance companies individually. The global nature of international reinsurance markets also allows for some portion of the losses from an event to be absorbed by international markets (and investors), thereby diversifying the burden away from the domestic financial system.

A number of studies have shown the positive impact that insurance can have in reducing the economic disruption that normally follows disaster events – by providing a relatively quick source of funding for recovery and reconstruction and reducing the amount of losses that would otherwise need to be absorbed by households, businesses and government. International reinsurance and capital markets can also play a role in reducing economic disruption from disaster events by: (i) contributing to the availability (and affordability) of insurance coverage for these risks; and (ii) reducing the share of losses that must be absorbed domestically.

However, (over-) dependence on international reinsurance and capital markets could have implications for policyholders where reinsurers are unable to meet their obligations to domestic insurers in the aftermath of a significant event or losses from a significant event lead to reinsurer or investor exit from the market and/or significant (upward) pricing adjustments.

OECD guidance on supporting appropriate financial protection arrangements

Excerpt from OECD Recommendation on Disaster Risk Financing Strategies

RECOMMENDS that Adherents support the effective management of the financial impacts of disasters by all segments of the population and economy and encourage the development of risk transfer markets for disaster risks, by:

(...)

ii) Implementing a financial sector regulatory and supervisory framework that:

a) Ensures a sound, open and efficient financial sector with sufficient financial capacity to absorb disaster risks, including by enabling the use of risk transfer to national and international (re)insurance and capital markets.

b) Enables pricing, contractual terms and conditions (e.g. premiums, deductibles, coverage limits, co-share, excess of loss) that facilitate risk transfer while encouraging risk reduction.

c) Requires the use of contractual terms on the scope of financial protection and any exclusions or limitations that are understandable to non-experts. d) Ensures that the necessary plans, processes and operational capacity are in place to provide timely and fair payment of claims resulting from insured disaster damages and losses, including, where relevant, time limits for making advance payments on claims incurred.

(...)

v) Ensuring that disaster insurance and compensation arrangements encourage public and private risk reduction and recognise the benefits of utilising the capacity of national and international (re)insurance and capital markets to absorb disaster losses.
The reinsurance market comprises traditional reinsurers that provide indemnity-based insurance coverage to primary insurers (cedants) in exchange for a premium as well as alternative reinsurers that provide similar protection through the issuance of capital market instruments to cover specific risks (e.g. catastrophe bonds, industry-loss warranties) or that raise capital from investors to provide insurance coverage on a fully collateralised basis (e.g. collateralised reinsurance, sidecars).

According to some estimates, reinsurance markets absorb approximately 60% of insured losses from natural catastrophe events worldwide, of which approximately 15% is retroceded (i.e. further reinsured) among traditional reinsurance companies and via the transfer of reinsurance risk to capital markets. This additional risk absorption capacity allows primary insurers to write more coverage for households, businesses and governments with the confidence that some portion of that risk will be absorbed by third parties.

The reinsurance market is a global market that assumes risk from all parts of the world. In 2016, approximately 32% of property and casualty reinsurance premiums collected were for risks in Asia and Oceania making this region the second largest property and casualty reinsurance market in the world.

Source: Patrick Andreatta (Swiss Re)
The global nature of this market allows reinsurers to establish diversified portfolios of uncorrelated risks which reduces the amount of capital that is required to protect against those risks. For example, Swiss Re estimates that USD 40-45 billion in capital would be required to protect against the risks in its portfolio if those risks were (re)insured locally, relative to the USD 35.7 billion in capital that Swiss Re holds to protect against its risks. It also means that perils for which more limited reinsurance coverage has been provided – such as natural catastrophe risk in Southeast Asia – should attract greater interest (and competition) among reinsurers to offer coverage given the diversification benefits that would be derived – and should lead to lower premiums for that coverage.

The development of alternative reinsurance coverage through capital markets has led to an increase in the aggregate level of reinsurance coverage available. Similar to traditional reinsurance, alternative reinsurance pricing has declined in recent years. Insurance-Linked Securities, such as catastrophe bonds, provide a means for capital market investors to gain exposure to catastrophe risk – which is normally uncorrelated to other market risks.

Some Asian catastrophe risk has been transferred to capital market (approximately 7% of alternative market exposure is for Japanese earthquake and storm risk, according to some estimates, while China and Chinese Taipei earthquake risk have also been transferred to capital markets) although this remains limited. Efforts to establish a regional hub for capital market risk transfer in some countries (e.g. Singapore) could have a positive impact on the use of capital markets for absorbing catastrophe risk. Improvements in the quality of risk data and models would also increase investor confidence in taking on exposure to Asian catastrophe risks although risk transfer based on parametric triggers could reduce modelling needs. Innovations that reduce minimum issue size (i.e. reduce the size of risk transfer needed to achieve efficiency) could also contribute to increasing the attractiveness of Asia catastrophe risk to capital market investors (alternatively, countries or cedants could examine multi-country issuance, as implemented by Pacific Alliance countries in South America).

For insurance regulators and supervisors, a key priority should be to ensure that the use of reinsurance by primary insurance companies is appropriately managed and does not create risks for policyholders. The IAIS Insurance Core Principles, which provide guidance for insurance supervisors on supervising insurance company risks, includes a specific principle on reinsurance risk (ICP 13 – Reinsurance and Other Forms of Risk Transfer). The focus of ICP 13 is on ensuring effective management of reinsurance risk by cedants through appropriate governance arrangements, the integration of reinsurance into cedants’ risk and capital management strategy and the establishment of relevant controls on the reinsurance programme. ICP 13 was recently revised to refine the guidance on the relationship between the insurer’s strategy and its reinsurance
programme, provide increased focus on systems and controls and encourage the application of proportionality principles and recognition of supervision of reinsurers in other jurisdictions. The revised Principle also reflects developments in the capital markets and encourages supervisors to recognise the micro- and macro-prudential risks that could result from restrictions on cross-border risk transfer.

Many Asian insurance supervisors and regulators have established requirements to ensure that primary insurers are appropriately managing their reinsurance risk. In Viet Nam, insurance companies are required to report their reinsurance coverage for flood and earthquake risk to the regulator. Their reinsurance programmes must be consistent with their stated risk appetite and be approved at the enterprise-level (a draft regulation, once implemented, will impose similar requirements in Georgia). Insurers cannot transfer their obligation to indemnify policyholder claims to reinsurers and cannot transfer more than 90% of their insured liability. In China, a registration system has been established for reinsurers that want to assume Chinese risk. Supervisors in Viet Nam, Georgia and Sri Lanka have all established requirements related to the credit rating of reinsurers. In some other countries, such as Lao PDR, Myanmar, Mongolia, primary insurance coverage for many risks is not widely available, reducing the need for reinsurance coverage (although domestic and foreign reinsurance companies have been established).

### Minimum reinsurer rating requirements in Georgia and Sri Lanka

In Georgia, the Insurance State Supervision Service has been working with the World Bank to improve the regulatory and supervisory framework for reinsurance. As part of this effort, minimum credit quality requirements for participating reinsurers will be established based on credit ratings or, for unrated reinsurers, based on solvency ratios (Solvency II or equivalent). Reinsurers wishing to participate in assuming Georgian risk must present audited financial statements to demonstrate that they meet the minimum criteria.

#### Credit Quality Score Mapping

<table>
<thead>
<tr>
<th>Credit Quality Step (Score)</th>
<th>Credit Assessment by S&amp;P</th>
<th>Credit Assessment by AM Best</th>
<th>Credit Assessment by Fitch</th>
<th>Credit Assessment by Moody’s</th>
<th>Unrated Reinsurers Subject to EU SII Equivalent Regimes Assessed Based on Solvency Ratio</th>
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<tr>
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<td>A</td>
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<td>122% and &lt;175%</td>
</tr>
<tr>
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</tr>
<tr>
<td>4</td>
<td>BB</td>
<td>BB</td>
<td>BB</td>
<td>BA</td>
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Source: Natia Kvachakhia (LEPL, Georgia)

### Reinsurer’s Security/ Rating

- The minimum signed share should be 15/100 of the said Reinsurance Programme.
- The following reinsurer’s rating must be S&P “BBB”, AM Best “bb”, Moody’s “Baa”, Fitch “BBB” or above.
- From the total programme, minimum 45% would be filled by “A” rated Reinsurers. (A- ratings will be considered)
- The reinsurers who have no previous experience in the Asian region will be accepted subject to maximum of 10% of the total programme.
- If a Reinsurer is submitting a direct bid, it must cover 100% of the said programme.

Source: Damayanthi Fernando (IRCSL, Sri Lanka)

In Sri Lanka, minimum credit quality requirements have been established taking into account the participating reinsurer’s share of the overall programme (i.e. the lead reinsurer must have a specific minimum rating while the other participating reinsurers must achieve a lower rating threshold). In addition, a minimum share of the overall reinsurance programme must be assumed by reinsurers with a minimum credit rating.
A number of Asian countries are also integrating reinsurance use into the management of catastrophe risks. In Sri Lanka, where primary insurers make heavy use of reinsurance, the National Insurance Trust Fund (NITF) has been given responsibility for reinsuring 30% of mandatory insurance coverage provided by primary insurers and for providing primary property insurance coverage against natural perils (except drought) for uninsured households and small businesses (through the National Natural Disaster Insurance Scheme (NNDIS)) – which has led to exceptionally high levels of insurance penetration for catastrophe risks. The NITF transfers a portion of the risk it reinsurers as well as the risk it takes on through NNDIS to reinsurance markets although challenges related to the complexity of the procurement procedure and high pricing has meant that reinsurance placement was delayed in 2017/2018. In China, the (re)insurance market is struggling to meet all the needs for catastrophe risk coverage (at least at a premium within policyholders’ willingness-to-pay), leading to the establishment of a number of insurance schemes to provide coverage. A number of local governments have experimented with centralised public purchase of catastrophe insurance with positive results. Insurance schemes have also been established to support coverage for rural households and agricultural production. More recently, a residential earthquake insurance pool has been established involving 41 primary insurance companies and 5 reinsurance companies with coverage extended to almost 2.5 million households.

Some countries, particularly in Asia, have imposed barriers to the cross-border transfer of risk to international reinsurance markets. These include measures aimed at requiring a local presence or assets or requiring that a share of risk be retained or ceded only (or preferentially) to domestic reinsurance companies (or a state-owned reinsurer). These types of measures may play a role in managing counterparty risk and maintaining reinsurance supply and price stability – although come at the cost of concentrating risk domestically and reducing the options available to primary insurers for managing their risks. The OECD is undertaking work to examine the contribution of reinsurance to disaster risk management and the impact of measures that restrict or discourage cross-border risk transfer to reinsurance markets. The findings of this project will be used to support countries’ in the region in developing a framework for leveraging the opportunities and managing the risks presented by international reinsurance markets.
Managing disaster related contingent liabilities within public finance frameworks

The recovery and reconstruction expenditures governments face in the aftermath of disaster events as well as the potential for declining revenues as a result of economic disruption can create significant budget volatility and negative economic impacts that can persist for some time beyond the event. Governments are normally faced with a variety of expenses including the cost of relief and recovery operations, rehabilitating or rebuilding public buildings and infrastructure and providing compensation and financial assistance to affected households, businesses and sub-national levels of governments. In countries where there are low levels of insurance coverage for private and public assets, a significant portion of post-disaster recovery and reconstruction costs may need to be absorbed by governments budget allocations (along with any international assistance that may be available).

In support of the Cebu Action Plan objective to build financial resilience across APEC economies, the OECD has developed a framework for managing disaster-related contingent liabilities within public finance frameworks and is examining the approaches taken in a number of countries (Australia, Canada, Colombia, Costa Rica, France, Japan, Mexico, New Zealand and Peru). The framework provides guidance on the main elements of a strategy for managing the impacts of disasters on public finances, including the need to identify and quantify disaster-related contingent liabilities, integrate those estimates into fiscal risk assessments and forecasting, implement measures to mitigate those liabilities and plans for managing residual risk and disclose the estimates of disaster-related contingent liabilities and plans for managing those liabilities.

There are significant differences across countries in terms of the level and scope of disaster-related contingent liabilities and approaches across countries to managing these fiscal risks. For example, some countries (e.g. Japan) have made a number of explicit commitments to support recovery and reconstruction of public and private assets while others (e.g. Peru) have made very few explicit commitments (although have historically been faced with a number of implicit obligations in the aftermath of significant events. A few countries (e.g. New Zealand, Philippines) have incorporated estimates of disaster-related contingent liabilities into their fiscal risk assessments and forecasting.
liabilities into fiscal forecasting. Some countries (e.g. Mexico) have implemented sophisticated arrangements for funding public asset rehabilitation involving incentives for sub-national governments to invest in risk reduction and risk transfer arrangements to provide a source of funding for reconstruction.

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### OECD guidance on managing disaster-related contingent liabilities

<table>
<thead>
<tr>
<th>Excerpt from OECD Recommendation on Disaster Risk Financing Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>V. RECOMMENDS that Adherents effectively manage the financial impacts of disasters on public finances by:</td>
</tr>
<tr>
<td>i) Evaluating the potential financial exposures of government to disaster risks, taking into account, where applicable:</td>
</tr>
<tr>
<td>a) The expected costs of relief and recovery as well as reconstruction of public infrastructure;</td>
</tr>
<tr>
<td>b) Exposures to losses as a result of public (re)insurance arrangements or guarantees;</td>
</tr>
<tr>
<td>c) Estimated payments under public compensation and financial assistance arrangements to segments of society and the economy that are vulnerable to disaster risks and/or subnational levels of government facing fiscal constraints, including the possibility of unanticipated financial assistance; and</td>
</tr>
<tr>
<td>d) The potential impact of a deterioration in macro-economic conditions, such as a decline in economic activity, government revenues or a deterioration in the balance of payments.</td>
</tr>
<tr>
<td>ii) Developing an ex ante plan or plans for managing the financial impacts of disasters on public finances, considering the potential contribution of budget reallocations, temporary taxation, debt financing, reserves, insurance, and capital market instruments, taking into account financial capacity, desired risk retention and transfer levels, as well as the cost, timing and availability of the various financing options.</td>
</tr>
<tr>
<td>iii) Publicly disclosing, where permissible, that plan or plans (or portions thereof) with the aim of building confidence in the government's capacity to manage the financial impacts of disasters.</td>
</tr>
<tr>
<td>iv) Assessing the benefit of risk retention or risk transfer relative to ex ante investments in risk prevention, taking into account appropriate discount rates.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Excerpts from the OECD Recommendation on the Governance of Critical Risks</th>
</tr>
</thead>
<tbody>
<tr>
<td>III. RECOMMENDS that Members build preparedness through foresight analysis, risk assessments and financing frameworks, to better anticipate complex and wide-ranging impacts.</td>
</tr>
<tr>
<td>To this effect, Members should:</td>
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<td>(...)</td>
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<tr>
<td>4. Plan for contingent liabilities within clear public finance frameworks by enhancing efforts to minimise the impact that critical risks may have on public finances and the fiscal position of a country in order to support greater resilience. This could be done by:</td>
</tr>
<tr>
<td>i) developing rules for compensating losses that are clearly spelled out at all levels in advance of emergencies to the extent that this is feasible to achieve cost effective compensation mechanisms;</td>
</tr>
<tr>
<td>ii) taking into account the distribution of potential losses among households, businesses and insurers, and encourage policies whereby all actors take responsibility within the context of their resources. In countries or areas that are known to be highly exposed or vulnerable to extreme events, cost-effective compensation should consider a mix of pre-funding mechanisms and clear and agreed public finance rules before a crisis occurs. The mix of mechanisms should include market-based mechanisms that enable households and businesses to transfer financial risks to insurance and capital markets;</td>
</tr>
<tr>
<td>iii) establishing mechanisms for estimating, accounting and disclosing contingent liabilities associated with losses to critical sectors in the context of national budgets;</td>
</tr>
<tr>
<td>iv) adopting broad frameworks for assessing risk-related expenditures. These frameworks should record, to the extent that this is feasible, the expenses at national and local level.</td>
</tr>
</tbody>
</table>
The scope of disaster-related contingent liabilities also varies substantially across the region. Countries will normally incur costs related to emergency relief and the rehabilitation and reconstruction of public buildings and infrastructure. Many countries (Bhutan, Georgia, India, Lao PDR, Myanmar, Pakistan, Philippines) also provide financial support to affected sub-national levels of government and some (Georgia, India, Lao PDR, Maldives, Pakistan) also provide compensation to affected households. In almost all countries, these costs are incurred as a result of explicit commitments for the national government to provide financial support although most have also incurred costs in the aftermath of disaster events that were not related to an explicit obligation. A few countries (Bhutan, India, Lao PDR, Myanmar, Pakistan, Philippines, Viet Nam) incorporate estimates of disaster-related contingent liabilities into fiscal risk assessments and/or forecasting, usually based on past expenditures although some countries undertake forward-looking sensitivity analyses. In Viet Nam, for example, annual expected losses and potential 1-in-100 year losses due to damage to public infrastructure have been estimated.

Most Asian countries have established reserve funds, usually earmarked for disaster-related costs, to fund their explicit commitments to fund relief and reconstruction costs. In Myanmar, 20 billion MMK is allocated annually to a Disaster Management Fund with an additional allocation of 20 billion MMK available as a contingency fund. The diversion of funds allocated to other budget needs, international borrowing and international assistance are also commonly used to fund disaster-related expenditures. In Viet Nam, a 2017 law on public asset management requires national and sub-national governments to take responsibility for protecting public assets against disaster risks and making arrangements to prepare for recovering from disaster damages. The law allows for the purchase of insurance by public asset owners where insurance is determined to be cost-efficient based on a cost-benefit analysis of the different options available. This has led to the acquisition of insurance coverage for some high-value assets.

A political agreement on the establishment of the Southeast Asia Disaster Risk Insurance Facility (SEADRIF) was reached at a meeting of the ASEAN+3 Finance Ministers and Central Bank Governors in Manila in May 2018. SEADRIF will provide a source of funding to support recovery in the event of a disaster (particularly a flood) of a given magnitude affecting Lao PDR or Myanmar – and therefore provide an alternative to the use of budget funds for emergency needs. SEADRIF’s exposures will be reinsured in the reinsurance market through a traditional or alternative reinsurance coverage arrangement. Cambodia may also become a member of the facility depending on the findings of a feasibility study.

Source: Etsuro Ninomiya (MOF, Japan)
SEADRIF is the most recent among a number of initiatives aimed at providing financial protection to governments faced with early funding needs to support recovery in the aftermath of a disaster. In the Caribbean (recently extended to Central America), CCRIF has made 42 payouts to governments totalling USD 131 million to support immediate recovery in the aftermath of earthquakes, hurricanes and extreme rainfall. The Pacific Catastrophe Risk Insurance Programme covering a number of Pacific island countries was recently formalised after a number of years of pilot testing. In Africa, Africa Risk Capacity provides governments with an immediate source of funding for emergency needs in the event of drought, contingent on the governments having a plan in place to meet emergency needs. The regional facilities provide countries with the funding capacity necessary to respond quickly to address recovery needs, which has been demonstrated to be more cost-efficient than a later response (for example, as people are not forced to take detrimental actions such as asset sales to meet immediate needs). It also allows countries to access the reinsurance market a more diversified risk profile than if the countries approached the market individually - which should reduce the cost of insurance.

Insurance payments based on parametric triggers (i.e. triggers based on meteorological or seismological parameters that are correlated with losses) or modelled loss triggers (i.e. triggers based on loss estimates generated by models using the specific event parameters) can provide a quick assessment of whether a payout should be made. The increasing availability of relevant data from weather stations and satellites (with longer time series) will expand the range of options available for structuring risk transfer solutions for public sector exposures. For example, a global vegetation index with 17 years of data can now be constructed using satellite imagery data from NASA, while the US National Oceanic and Atmospheric Agency now captures and publishes hurricane data every 6 hours. This data can also be used to allow the development of forecast-based insurance which could provide individuals with payouts to finance protective measures in advance of being affected by a disaster event.

Insurance coverage based on parametric or modelled loss triggers are most suitable for addressing short-term recovery needs. Traditional (re)insurance is often more appropriate for managing longer-term reconstruction needs as it provides payout based on the losses incurred, reducing the potential for payouts to differ significantly from actual losses. Increasing attention is being invested in developing insurance solutions for longer-term needs, including insurance to cover the costs of public assets reconstruction. There are also important needs in the agriculture, fisheries and forestry sector where livelihoods can be severely affected by disaster events although only limited data is available on how individuals in these sectors are actually affected. For example, an innovative insurance scheme in Mongolia triggers payouts to herders based on a livestock mortality index.

Source: Ernst Rauch (Munich Re)
A lack of recognition by governments of their disaster-related contingent liabilities, limited awareness of the risk transfer options available and their purpose as well as institutional and regulatory impediments limit the use of risk transfer tools by public sector agencies. That said, an increasing number of public entities at all levels of government have overcome these challenges and have included risk transfer tools as part of their approach to financial management. There is significant appetite among (re)insurance companies for exposure outside of developed countries which – when combined with the increase in data availability and modelling capacity – should lead to the development of innovative insurance tools to meet the financial protection needs of governments at all levels.

**Source:** Thomas Haller (Swiss Re)
SESSION 4

Developing a disaster risk financing strategy

Asian countries face significant challenges in addressing the financial impacts of disaster risks. Across ADB developing member countries, disasters have caused USD 487 billion in direct physical damages (approximately USD 133 million in losses per day) since 2007 (and the loss over 320 000 lives). These countries face an ongoing exposure in terms of average annual losses of USD 78 million based on the estimates available from catastrophe models – equivalent to 1.4% of government expenditures. Low levels of insurance coverage, combined with levels of international assistance that cover only a small share of disaster losses (and usually only for major events) result in a significant level of burden on governments to fund recovery and reconstruction. This usually requires major budget re-allocations which hampers the ability of governments to plan and implement longer-term development objectives. In the Pacific, disasters reduced trend levels of growth from 3.3% to 2.6% between 1980 and 2014, according to estimates from the IMF. To mitigate these impacts, countries should put in place disaster risk financing strategies that estimate the amount of funding that is likely to be needed to address disaster needs and identify the most cost-effective way to meet those funding requirements, taking into account the timeliness of funding disbursement relative to when the funds are needed. This strategy should also take into account operational considerations related to how the funding will be delivered to those in need as well as the incentives for risk reduction created through different approaches to funding disaster recovery and reconstruction needs.

OECD guidance on the establishment of a disaster risk financing strategy

Excerpt from OECD Recommendation on Disaster Risk Financing Strategies

II. RECOMMENDS that Members and non-Members having adhered to the Recommendation (hereafter “the Adherents”) establish a strategy, under the leadership of Ministers of Finance or other relevant national authority, for managing the financial impacts of disasters, appropriately respecting differences in the level of national responsibility for disaster risks in different countries, that:

i) Fosters, by implementing the elements of this Recommendation, an integrated approach to the financial management of disaster risks across all levels of government, built on a sound foundation of risk management, which includes a comprehensive, multi-hazard risk assessment, aimed at maximising the overall cost-effectiveness of public and private investment.

ii) Provides the resources necessary to ensure sufficient institutional capacity and expertise for the assessment of disaster risks and the relative costs and benefits of different approaches to managing those risks.

iii) Ensures co-operation and co-ordination across organisations in the public and private sectors, including different levels of government, with responsibilities for, and expertise in, managing the financial impacts of disaster risks and, where relevant, leverages opportunities for international co-operation and information sharing, recognising the potential cross-border drivers and impacts of disaster risks.

iv) Assesses the appropriate levels of risk retention and risk transfer, taking into account the responsibilities and accountabilities for the financial impacts of disaster risks across the public and private sectors, including different levels of government, and their capacity to manage those financial impacts; and identifies any financial vulnerabilities as a result of exposure to disaster risks.
The development and implementation of a disaster risk financing strategy requires strong leadership, especially by ministries of finance as well as active collaboration across relevant ministries, including ministries of finance, disaster risk management offices, insurance regulators and ministries responsible for public infrastructure and investment. In the APEC region, Finance Ministers have recognised this need through their support of the financial resilience objectives of the Cebu Action Plan which includes objectives to: (i) establish and promoting private disaster insurance schemes; (ii) deepen insurance penetration and developing regional risk sharing measures; and (iii) develop a roadmap and network of experts for expanding the coverage of micro-insurance and disaster risk finance in member economies. A Disaster Risk Solutions Working Group that includes representatives from APEC member economies, international organisations and the Asia Pacific Financial Forum (APFF) has been established to move forward on this agenda. APFF work on improving access to micro-insurance is also proceeding under the leadership of GIZ’s RFPI Asia Program with a focus on 11 APEC economies that have prioritised micro-insurance as a mechanisms for improving financial resilience against disaster risks.

### APEC FMP's Disaster Risk Solutions Working Group

<table>
<thead>
<tr>
<th>Activity</th>
<th>Timeline</th>
<th>Responsible</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. WG Meeting</td>
<td>19 October 2017, BFOM</td>
<td>Chair, Co-chair</td>
</tr>
<tr>
<td>2. Workshop on an effective public asset database for effective catastrophic risk financing and insurance framework</td>
<td>Q2 2018 (scheduled for 21-22 June, Tokyo)</td>
<td>WB</td>
</tr>
<tr>
<td>3. Study on best practices on implementation arrangements of Disaster Risk Insurance Facilities</td>
<td>Q3 2018</td>
<td>WB</td>
</tr>
<tr>
<td>4. WG Meeting</td>
<td>Feb 2018, Deputies Mtg</td>
<td>Chair, Co-chair</td>
</tr>
<tr>
<td>5. Study exploring funding mechanisms for effective integrated disaster response through social protection systems</td>
<td>Q3 2018 (8-9 May, Bangkok)</td>
<td>WB, OECD</td>
</tr>
<tr>
<td>6. Series of study courses (a couple of days in volunteered economies) to learn about E/I, El Nino, and flood insurance schemes for property and agricultural assets</td>
<td>2019</td>
<td>Philippines, Japan, Peru, New Zealand, AGB</td>
</tr>
<tr>
<td>7. Workshop series to support APEC economies develop a roadmap for expanding the coverage of non-subsidized microinsurance</td>
<td>Q1/Q2 2018 (9 May, Bangkok)</td>
<td>ABAC/APFF</td>
</tr>
</tbody>
</table>

APFF has already confirmed its contribution to activities 2, 5 & 7.

*Source: Masaaki Nagamura (Tokio Marine)*

From left to right: Gawa Zangpo (MOF, Bhutan), Leigh Wolfrem (OECD), Ila Patnaik (NIPFP, India)
Countries in the region are working on these issues (and a few, including Pakistan and the Philippines, have developed specific financing strategies). In some countries, such as Bhutan, Maldives and Georgia, recent disaster events have led to an increased focus on disaster risk management. In Bhutan, a number of recent catastrophe events, including Cyclone Aylia in 2009 and earthquakes in 2009 and 2011, led to the development of disaster management legislation in 2013 and related rules and regulations in 2014. Upcoming discussions on possible revisions to the legislation may provide an opportunity to institutionalise the need for a financial strategy. In Georgia, 2015 floods have led to the work on many of the elements of a disaster financing strategy, including data collection and the establishment of financial mechanisms for supporting victims. In Maldives, discussions with international organisations have been initiated to examine financial instruments that would address the island country’s particular needs, including a need to provide protection for the tourism industry.

Lao PDR and Myanmar are developing disaster risk financing strategies, linked to the implementation of SEADRIF and other technical assistance projects. In Lao PDR, the focus is on examining the mix of financial instruments that will provide a source of funding when needed to ensure efficient recovery and reconstruction. In India, budget allocations have been established for responding to disasters although there is a significant gap between what states have budgeted for and what they actually spent. There is also a gap between what states expect to receive in funding from the national government and what they actually receive. The 15th Finance Commission has been mandated to examine disaster funding arrangements which may provide an opportunity to address some of these issues.

State expenditure for relief on account of natural calamities, 2015-16 (USD million)³

Expenditure (Actual vs. Budgeted)

Source: Ila Patnaik (NIPFP, India)
# WORKSHOP PROGRAMME

**8 May 2018**

## 09:30-10:00  Opening Session: The benefits of an integrated approach

**Speakers**
- **Mamiko Yokoi-Arai**, Principal Administrator, Directorate for Financial and Enterprise Affairs, OECD
- **Hans Guttmann**, Executive Director, Asian Disaster Preparedness Center
- **Chul Ju Kim**, Deputy Dean, Asian Development Bank Institute

## 10:00-13:15  Session 1: Damage and loss data collection and exposure quantification

**Topics**
An accurate assessment of current and future (including in the context of climate change) risk is a necessary input for effective decision making on land-use and development planning, risk reduction investment needs and re/insurance pricing. Data on the impacts of past events, both direct and indirect, is often a primary input into the development of risk maps and models, although in many countries the collection of this data is rarely undertaken in a systematic way based on a common methodology. Countries also rarely make use of the information that might be available from the insurance sector, including any maps and models used for underwriting insurance coverage. This session will provide an overview of exposure quantification and loss data collection efforts in selected Asian economies as well as the findings from an analysis on OECD country practices. This will be followed by a discussion of practices and solutions that could help overcome some of the challenges to better understanding risk and to providing the data and analytics necessary to inform risk management and risk transfer decisions.

**Moderator**
- **Aslam Perwaiz**, Deputy Executive Director, Asian Disaster Preparedness Center

**Speakers**
- **Teresa Deubelli**, Policy Analyst, Public Governance Directorate, OECD
- **Animesh Kumar**, Deputy Chief, UNISDR Regional Office for Asia and the Pacific
- **Ahmed Rasheed**, Senior Policy Executive, National Disaster Management Centre, Maldives
- **Safwan Ullah Khan**, Director (Finance), National Disaster Management Authority, Pakistan
- **Phonesavanh Saysompheng**, Deputy Head of Disaster Management Division, Ministry of Labour and Social Welfare, Lao

## 11:05-11:20  Coffee break

## 11:20-11:45  Tour de table

Agencies responsible for disaster risk management will be asked to make a short intervention on loss data collection arrangements and modelling in their country.
Discussants

- Daniel Raizman, Senior Risk Consultant, Global Resilience, AIR Worldwide
- John Schneider, Secretary General, Global Earthquake Model Foundation
- Dickie Whitaker, Chief Executive, Oasis Loss Modelling Framework
- Thomas Johansmeyer, Assistant Vice President, PCS Strategy and Development, ISO Claims Analytics
- Tomoyuki Okada, Director for International Coordination of River Engineering, Ministry of Land, Infrastructure, Transport and Tourism, Japan
- Francisco S. Espejo Gil, Area Manager (Studies and International Relations), Consorcio de Compensación de Seguros, Spain
- Vikas Wadhera, Director, Catastrophe Modeling and Analytics, RMS
- Sanny Ramos Jegillos, Senior Advisor/Team Leader, Climate/Disaster Resilience and Recovery, Bangkok Regional Hub, United Nations Development Programme

13:15-14:45 Lunch break

14:45-18:00 Session 2: Access to international reinsurance markets

Topics

International reinsurance markets can play an important role in absorbing losses from major disaster events and supporting the availability and affordability of insurance for disaster risks. Reinsurance companies can also provide underwriting expertise that may not be readily available in the country. The importance of reinsurance markets in absorbing losses and supporting the affordability and availability of primary insurance has led regulators and supervisors in many countries to implement measures to ensure that reinsurers are sufficiently solvent although overly burdensome restrictions on risk transfer to reinsurance markets can reduce the diversification benefits that international reinsurance markets provide. This session will provide an overview of the role and oversight of reinsurance in selected Asian economies as well as the findings from an OECD analysis on the contribution of reinsurance to risk management. This will be followed by a discussion of practices and solutions that could help countries implement a regulatory framework that appropriately balances the risks and opportunities provided by access to international reinsurance markets.

Moderator

- Mamiko Yokoi-Arai, Principal Administrator, Directorate for Financial and Enterprise Affairs, OECD

Speakers

- Leigh Wolf from, Policy Analyst, Directorate for Financial and Enterprise Affairs, OECD
- Damayanthi Fernando, Director General, Insurance Regulatory Commission of Sri Lanka
- Wang He, Deputy Secretary General, Insurance Society of China
- Sandar Linn, Assistant General Manager, Myanmar Insurance
- Natia Kvachakhia, Senior Specialist, Insurance Regulations and International Relations Division, Insurance State Supervision Service of Georgia
- Vu Minh Hue, Official, Non Life Insurance Division, Insurance Supervisory Authority, Ministry of Finance, Viet Nam
### 9 May 2018

**9:30-12:40**  
**Session 3: Managing disaster related contingent liabilities within public finance frameworks**

**Topics**  
The recovery and reconstruction expenditures governments face as well as the potential for declining revenues as a result of economic disruption in the aftermath of a disaster can create significant budget volatility, and depending on their management, negative economic impacts that persist some time beyond the event. The effective and active management of these contingent liabilities can reduce the cost to governments (and economies) of disaster events and build confidence in the soundness of public finances and the government’s ability to respond to disasters. This session will provide an overview of efforts in selected Asian economies to manage public sector contingent liabilities related to disaster risks as well as the findings from an OECD/World Bank analysis on practices in APEC economies. This will be followed by a discussion of practices and solutions that could help overcome some of the challenges to better managing these contingent liabilities, including through the use of risk transfer solutions.

**Moderator**  
Wawan Juswanto, Senior Economist, Capacity Building and Training Department, Asian Development Bank Institute

**Speakers**  
Teresa Deubelli, Policy Analyst, Public Governance Directorate, OECD

Etsuro Ninomiya, Director for Asian Financial Cooperation, Regional Financial Cooperation Division, International Bureau, Ministry of Finance, Japan

Kay Zin Latt, Assistant Director, Treasury Department, Ministry of Finance and Planning, Myanmar

Trinh Thu Hien, Deputy Head of Division, Department of Public Assets Management, Ministry of Finance, Viet Nam

**10:30-10:45**  
**Coffee break**

**Discussants**  
David Simmons, Managing Director, Capital, Science and Policy Practice, Willis Towers Watson

Ernst Rauch, Head of Public Sector Business Development, Munich Re

Karina Whalley, Marketing and Business Development Manager, AXA Global Parametrics

Vikas Wadhera, Director, Catastrophe Modeling and Analytics, RMS
Thomas Haller, Head South East Asia & East Asia and Director, Global Partnerships, Swiss Re

Hang Thi Thanh Pham, Senior Resilience Officer, Food and Agriculture Organisation

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>12:40-14:00</td>
<td>Lunch break</td>
</tr>
<tr>
<td>14:00-16:30</td>
<td><strong>Session 4: Developing a disaster risk financing strategy</strong></td>
</tr>
<tr>
<td>Topics</td>
<td>The development of a disaster risk financing strategy requires coordination across government that considers the best use of public resources and takes into account the costs and benefits of different approaches (including the incentives created by different interventions). This session will discuss how to integrate the various elements of a disaster risk financing strategy described in previous sessions.</td>
</tr>
<tr>
<td>Moderator</td>
<td>Leigh Wolfrom, Policy Analyst, Directorate for Financial and Enterprise Affairs, OECD</td>
</tr>
<tr>
<td>Tour de table</td>
<td>Government representatives will be asked to make a short intervention on how the discussions could contribute to the development of a strategy for managing the financial impacts of disaster impacts in their countries.</td>
</tr>
<tr>
<td>15:00-15:15</td>
<td>Coffee break</td>
</tr>
<tr>
<td>Discussants</td>
<td>Charlotte Benson, Principal Disaster Risk Management Specialist, Sustainable Development and Climate Change Department, Asian Development Bank</td>
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<td></td>
<td>Hideaki Hamada, Senior Financial Sector Specialist, World Bank</td>
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<td>Masaaki Nagamura, Division Head, Corporate Social Responsibility, Tokio-Marine and Lead (Disaster Risk Financing and Insurance), Asia Pacific Financial Forum</td>
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<td></td>
<td>Antonis Malagardis, Program Director, GIZ Regulatory Framework Promotion of Pro-poor Insurance Markets in Asia (RFPI Asia)</td>
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<tr>
<td>16:30-16:45</td>
<td><strong>Closing session</strong></td>
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<tr>
<td>Speakers</td>
<td>Mamiko Yokoi-Arai, Principal Administrator, Directorate for Financial and Enterprise Affairs, OECD</td>
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<td></td>
<td>Chul Ju Kim, Deputy Dean, Asian Development Bank Institute</td>
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</tbody>
</table>
**FURTHER READING**


Asian Development Bank Institute (year), [title with hyper link], Asian Development Bank Institute.


Cambodia National Committee for Disaster Management (n.d.), *CamDi (database)*, Government of Cambodia.


International Association of Insurance Supervisors (2017), *ICP 13 – Reinsurance and Other Forms of Risk Transfer*, International Association of Insurance Supervisors.

Food and Agriculture Organisation (2017), *The impact of disasters and crises on agriculture and food security*, Food and Agriculture Organisation.


GEM Foundation (2018), *Global Earthquake Model (brochure)*, GEM Foundation.


MEFIN Network and GIZ RFPI Asia (2016), *Diagnostic toolkit for insurance against Natural Catastrophes for MSMEs in the agricultural and mining sectors*, GIZ.

Myanmar Department of Disaster Management (n.d.), *Myanmar Disaster Loss and Damage Database*, Government of Myanmar.


