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Workshop Report on Risk-smart Business for SMEs in the Post COVID-19

Virtual, China | 21-22 November 2022

APEC Emergency Preparedness Working Group

July 2023

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Produced by

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Content

I. BACKGROUND

OBJECTIVES

The workshop seeks to bring together representatives from government authorities, private sector, technical agencies, local communities and the academia and universities to join three rounds of panel discussions respectively on Risk-informed Decision-making Towards Resilience, Risk-smart Business Towards Resilience – SMEs in the Post COVID-19, and Risk Monitoring and Assessment Tools or Methodology Towards Risk-informed Preparedness.

Project Objectives

The project seeks to address the following capacity building issues:

First, improved understanding of the adverse impacts of the COVID on SMEs.

Second, possible and applicable suggestions for SMEs to not only build back better from such risks as the COVID, but also achieve sustainability against future major disasters and public health contingency.

Third, raising awareness of policy makers, practitioners, SME leaders and staff about risk-informed decision making, emergency preparedness and risk-smart business.

Workshop Objectives

The workshop is a two-day event held under China's APEC-funded project "Resilience and Recovery: Risk-smart Business for SMEs in the Post COVID-19" and led by experts that will facilitate active panel discussion and deliver concrete outcomes from the discussion on promoting risk-smart smart business for SMEs in the post COVID-19.

As the backbone of APEC economy, the business community, especially small and medium enterprises (SMEs), contributed enormously to the COVID-19 prevention and control but also suffered from the continued adverse impacts of the pandemic. For SMEs to build resilience against the impacts of such risks as natural hazards and public health contingency, and achieve sustainability in the post pandemic era, government departments, technical support agencies and SMEs themselves should all make due efforts. That said, China proposes this project and hosts this event, aiming to raise awareness of policy makers, practitioners, SME leaders and staff about risk-informed decision making, emergency preparedness and risk-smart business, and discuss possible and applicable suggestions for government departments, technical agencies and SMEs to not only build back better from such risks as the COVID, but also achieve sustainability against future major disasters and public health contingency.

The Workshop mainly holds discussion on:

First, risk-informed decision making towards resilience. Making risk-informed decisions are actually an investment in risk reduction, resilience-building and sustainable development,

especially for high-value decisions with the greatest impact. Risk-informed decision makers integrate the disaster risk management process into their decision-making process and by doing so, the risk-informed decision making at government level can support SMEs and the wider community to build resilience against future risks and promote their sustainability in the post-pandemic era.

Second, risk-informed preparedness towards anticipatory action. Risk identification, monitoring and assessment tools or methodology can provide evidence-based emergency preparedness recommendations for the society and the industry, including SMEs, so that they can take early action and make risk-informed preparedness. APEC economies are different in their development stages and basic conditions. Hence it is challenging and not at all easy to develop a commonly-used and standardized risk monitoring and assessment models or tools to support their emergency preparedness. However, under this project event, the organizer hopes to integrate such a risk-informed mindset and paradigm into the whole process of investment, planning, preparedness, response, relief and recovery.

Third, risk-smart and sustainable business models towards resilience. For enterprises, especially SMEs, understanding both the risk itself and the constraints of themselves is the prerequisite for resilient and sustainable development. We hope panelists can discuss from the strategic level, the operational level, and the enabling environment level and make recommendations on how the government and technical agencies can provide more effective help to SMEs in the post-COVID-19 era and during future risks.

II. EVENT DATE

09:00-11:00 (BJT), 21 November 2022
09:00-12:00 (BJT), 22 November 2022

III. EXECUTIVE SUMMARY

The virtual Workshop on Risk-smart Business for SMEs in the Post COVID-19 held on 21 and 22 November has forged a friendly virtual platform for policy makers, practitioners, SME leaders and staff from a few APEC member economies and international/ regional development agencies to share with and learn from each other.

A total of 36 participants and speakers from EPWG member economies, international/ regional development agencies registered for the Workshop (18 (50 %) female and 18 (50%) male). The workshop has created a virtual platform for participants to share and discuss on disaster preparedness, risk-informed decision making, resilience building centering on SMEs, paving the way for future programming and intervention re-modelling among APEC economies.

The workshop, as planned, has facilitated relevant and useful panel discussions on risk-informed decision making at government level to support SMEs build resilience against future risks and promote their sustainability in the post-pandemic era; risk identification, monitoring and assessment tools, and/or methodology at technical agency level to provide evidence-

based emergency preparedness recommendations for the society and the industry, including SMEs; and resilience capacity building at SME level to strengthen supply chain, improve risk management, and raise awareness for risk-smart business.

The workshop has made solid contribution to addressing capacity building issues for SMEs. It has contributed to improved common understanding of the adverse impacts of the COVID 19 on SMEs, progresses made on soliciting evidence-supported applicable suggestions for SMEs to build back better from such risks as the COVID 19, and contributed to sustainability against future major disasters and public health contingency. The workshop has successfully raised awareness of the attended policy makers, practitioners, SME leaders and staff about risk-informed decision making, emergency preparedness and risk-smart business.

The workshop panelists have also presented and discussed recommendations (see more details in Recommendation session), following are a list of selected **key recommendations**:

• Understanding of risk-informed decision making towards resilience initiative, particularly key international policy and technical dossiers, should be strengthened. Decision is a starting point to address the problem you have in hand in the right direction but implementation will make the difference on the ground. Then you have an enabling environment and those will guide the whole process.
• Risk assessments need to take gender considerations into account. Risk assessments and decision-making processes need to include the needs which are unique to women and girls, the elderly people, people living with disabilities and other vulnerable groups. The risk assessment really needs to be inclusive, in order that action plans and programming are responsive and effective.
• Inclusive stakeholder representation is key to foster an enabling environment. Good practices from the region show that consultations that include representation of a wide range of stakeholders, from domestic to local and from general to specific, are more likely to produce outcomes that meet the actual needs of the population in all their diversity. Wide stakeholder representation will foster an enabling environment for public policy, legislation, and accountability. It is essential to always involve women-led organizations, youth-led organizations and organizations of persons with disabilities in any consultation on risks and needs.
• Continued advocacy of the transformational change to move from disaster risk reduction concept to focus on integrating the risk of disasters into overall development and inclusive and sustainable planning.
• Improved coherence both in terms of delivery and reporting between the Sendai Framework implementation and the implementation for Sustainable Development Goals (SDGs), the Paris Agreement on Climate Change, and other underlying development agenda.
• Different stakeholders should cooperate and work to promote the utilization of tangible tools, the risk-informed decision making such as business continuity planning, and the policy mindset shift from post-disaster relief to pre-disaster prevention, which has been mentioned throughout this forum. This would be a role of APEC and other partners who are involved in this workshop can play.
• There needs to be more public-private partnerships and international corporation in the field through the leading practice sharing, technology application guidance and also global

and regional supply chain eco-system construction. All governments and non-government organizations (NGOs) and enterprises need to work together to support SMEs to achieve a risk-smart business model.

• To facilitate a risk-smart business model, small-and-medium-sized enterprises (SMEs) could make improvements in the following four areas: 1) Management of workforce, which is reflected in the risk management organization and responsibility, as well as the risk management training for employees, relevant performance evaluation and incentive mechanism. 2) Applying risk as a factor into decision making, set up risk prevention model, carry out risk scenario analysis and make decision based on the analysis result. 3) Capturing new opportunity under the change of business environment and meet the new needs through innovation. 4) Digital technology application will enhance the visibility of supply chain and enable data analysis at the same time. Risk management should be implemented based on a quantitative analysis result.

• Support business continuity plans, which offers a relatively low-cost way of implementing risk prevention measures. Engage in awareness-raising and training for their employees and customers; Engage in and support research and innovation, as well as technological development for disaster risk management; Share and disseminate knowledge, practices and data on economic losses and disaster statistics.

• Solutions to fill the gap of SMEs' low risk awareness, low access, and financing would have to be carried out in a systemic way, technology, financing, public private partnerships (PPP), and more importantly, that all of the human agency, and all of the people in the communities being involved in the process in a meaningful way.

• Building towards risk-informed general preparedness needs to utilize models and tools to collect, analyse and apply risk information in the whole process of land planning, urban layout, building construction, infrastructure maintenance, emergency rescue and post-disaster recovery.

• Reinforce cooperation on disaster risk monitoring and early warning.

• A possible way for developing a commonly-used, widely-applied and user-friendly risk assessment tool/ methodology may be APEC organizing a technical committee to make a priority list of tools and develop a set of databases and software related to risk information and then apply them when necessary and favourable. But it still needs to take into consideration basic conditions and needs of APEC member economies and requires further discussion and exploration on the feasibility.

IV. WORKSHOP PROCEEDINGS

i. Welcoming and Opening Remarks

(i) Welcoming remarks by Ms. Guan Yan, APEC EPWG Co-Chair; Director, International Cooperation Department, National Disaster Reduction Center, Ministry of Emergency Management of China

Ms. Guan said, Last Saturday, at the just concluded APEC Economic Leaders' Meeting, APEC Leaders reaffirmed collaboration to improve opportunities for MSMEs to be competitive, specialized and innovative. Hence the theme and panel of this Workshop - Risk-informed decision making, Risk-Smart Business for SMEs in the Post COVID-19, and Risk-informed

Preparedness towards resilience - could not just highlight the priority work of EPWG but also respond to APEC commitment and they are highly relevant.

So what is a risk-informed decision? What is a risk-smart business model? What is climate-resilient development mindset and paradigm? And what risk identification and assessment tools can be used or developed to support this? How the decision-making level and technical level support SMEs resilience building and how the whole of industry can understand, prepare for, be informed of potential future risk? Ms. Guan concluded that, inspired by these questions, the Workshop is looking forward to see an inspiring discussion from multi-dimensional perspectives as it has representatives from both the public sector and the private sector.

(ii) Opening remarks by Mr. Li Shengli, Deputy Director General, International Cooperation and Rescue Department, Ministry of Emergency Management of China

Over the past years, more frequent natural hazards in the Asia-Pacific, compounded by the repeated resurgence of the COVID-19, have presented mounting risk of disasters to this region. Improving the awareness and capacity of disaster risk prevention and governance has become instrumental to protecting people's life and property, and should be the shared responsibility of every APEC economy. This year, in the just concluded 29th APEC Economic Leaders' Meeting, APEC leaders demonstrated their commitment to joint efforts towards resilient post-pandemic recovery in all respects.

As one of the most disaster-prone economies in the Asia-Pacific, in recent years, to enhance practical cooperation, closer communication and mutual learning, China has been actively implementing self-funded and APEC-funded capacity building projects. Today's Workshop is hosted under China's ongoing APEC-funded Project - Resilience and Recovery: Risk-smart Business in the Post COVID-19, through which we hope to inspire stakeholders to expedite resilient business and economic recovery from a multi-dimensional perspective.

In it's modernization drive of emergency management system and capacity, China has been pursuing "prevention first, with integrated development of prevention, relief and rescue". It is now shifting policy mindset from post-disaster relief to pre-disaster prevention, from single hazard to comprehensive risk management, and from reducing losses to mitigating risks. That said, on one hand, we attach great importance to better risk monitoring, early warning and assessment, improved integrated monitoring of multi-hazards and disaster chains, as well as enhanced capacity of risk identification and early warning. On the other hand, it extends global, regional and sub-regional partnership networks, join or build multilateral and bilateral cooperation mechanisms on emergency management, and make positive contribution to global sustainable development agenda.

Under the framework of APEC, China is ready to share its experience in emergency management and willing to work together with APEC member economies to protect people's lives and improve their livelihood.

(iii) Opening remarks by Mr. Zhang Xiaoning, Project Overseer; Director General of National Disaster Reduction Center, Ministry of Emergency Management of China

This two-day Workshop is held under China's APEC-funded project "Resilience and Recovery: Risk-smart Business for SMEs in the Post COVID-19". As the backbone of APEC economy, the business community, especially small and medium enterprises (SMEs), contributed enormously to the COVID-19 prevention and control and economic development of the region, but also suffered from the continued adverse impacts of the pandemic. For SMEs to build resilience against the impacts of such risks as natural hazards and public health contingency, and achieve sustainability in the post pandemic era, government departments, technical support agencies and SMEs themselves should all make due efforts. That said, China proposes this project and hosts this event, aiming to raise awareness of policy makers, practitioners, SME leaders and staff about risk-informed decision making, emergency preparedness and risk-smart business, and discuss possible and applicable suggestions for government departments, technical agencies and SMEs to not only build back better from such risks as the COVID, but also achieve sustainability against future major disasters and public health contingency.

As Project Overseer, he shares consideration behind the three panel discussions of this event.

First, risk-informed decision making towards resilience. Making risk-informed decisions are actually an investment in risk reduction, resilience-building and sustainable development, especially for high-value decisions with the greatest impact. Risk-informed decision makers integrate the disaster risk management process into their decision-making process and by doing so, the risk-informed decision making at government level can support SMEs and the wider community to build resilience against future risks and promote their sustainability in the post-pandemic era.

Second, risk-informed preparedness towards anticipatory action. Risk identification, monitoring and assessment tools or methodology can provide evidence-based emergency preparedness recommendations for the society and the industry, including SMEs, so that they can take early action and make risk-informed preparedness. APEC economies are different in their development stages and basic conditions. Hence it is challenging and not at all easy to develop a commonly-used and standardized risk monitoring and assessment models or tools to support their emergency preparedness. However, under this project, the event hopes to integrate such a risk-informed mindset and paradigm into the whole process of investment, planning, preparedness, response, relief and recovery.

Third, risk-smart and sustainable business models towards resilience. For enterprises, especially SMEs, understanding both the risk itself and the constraints of themselves is the prerequisite for resilient and sustainable development. The event hopes so see panelists discussing from the strategic level, the operational level, and the enabling environment level and making recommendations on how the government and technical agencies can provide more effective help to SMEs in the post-COVID-19 era and during future risks.

He also said that mounting systemic risk has become a new normal in the Asia-Pacific region, but more multi-dimensional and more concerted efforts made by the region are also forming a better normal. Through in-depth discussion on the above-mentioned points, this two-day Workshop seeks to refer to much pioneering work done by APEC economies and relevant

international and regional organizations, enhance dialogue between the academia and the private sector, and together contribute to the resilient recovery of our region.

ii. Panel Discussion 1: Risk-informed Decision-making Towards Resilience

Questions for panelists

1. How is disaster risk-information considered in the decisions related to development projects in your organization?
2. What are the major successes, challenges and limitations in your risk-informed decision-making, especially in its implementation?
3. What are your recommendations in order to further promote risk-informed decision-making practice for resilience in socio-economic development?

Moderator:

- *Dr. Kan Fengmin*, Senior Consultant; Former Regional Chief, Asia-Pacific Regional Office, United Nations Office for Disaster Risk Reduction (UNDRR)

Panelists (4):

- *Dr. Justine Coulson*, Representative to China/ Country Director to Mongolia, United Nations Population Fund (UNFPA)
- *Mr. Han Qunli*, Executive Director, International Program Office (IPO) of Integrated Research on Disaster Reduction (IRDR)
- *Mr. Kilian Murphy*, Program Lead – Thematic Innovations, Asian Disaster Preparedness Center (ADPC)
- *Ms. Ana Thorland*, Governance and Public Administration Expert, United Nations Project Office on Governance (UNPOG)

Time and date: 09:15-11:00 (BJT), 21 November 2022 (105 minutes)

- 20 minutes for keynote speech by Dr. Kan Fengmin
- 85 minutes for panel discussion – around 15 -20 minutes for each panelist

(i) Keynote Speech: Risk-informed Decision Making Towards Resilience

Dr. Kan shared that risk-informed decision-making is not really a new topic: if we take a moment to think about it, it is not difficult for us to find out that the concept has been applied in different areas from our daily lives to high-end strategic facilities.

We drive to work during the rush hour in the morning; We constantly gather and assess the traffic information around us to choose the right speed and right moment to change lanes; Sometimes we slowdown and even gave a gentle honk to get attention from the nearby drivers to avoid car accident and to reach the office safely. Similarly, disaster risk management process has been an integrated part of high-end, high-value and highly sensitive development projects, such as large-scale dam and building and operations. The list can be a much longer.

However, such rather successful risk-informed practice to safety and resilience to disasters has not yet become the mainstream in our socio-economic development planning and practice. Disaster risk management continues to be optional in the development in most

economies even right now. With this context, Dr. Kan touches upon four questions: Why do we need risk-informed decision-making for resilience? What are the steps that we need to follow in decision-making and risk management processes? How can decision makers make their decisions risk-informed, resulting in a level of resilience? And how can we create an enabling environment for promoting risk-informed decision-making towards resilience?

First, why do we need risk-informed decision-making for resilience? Dr. Kan summarized as four factors: frequency and magnitude of disasters, especially those related to climate change and extreme weathers; action inadequate to curb the growing trend of exposure and vulnerabilities to natural hazards; disaster management and disaster risk reduction are different issues; decision makers can be important agents for change from risk towards resilience, in both the private and public sectors.

Dr. Kan said we need to do more to integrate disaster risk management into development process. According to the international and regional reports on disaster and risk issues, the frequency, magnitude and impact of disasters are still on the rise, especially those related to climate change, such as floods, drought, cyclones, forest fires and even heat waves.

Why is that after several decades of collective efforts? The reason may be our actions, both in the past and ongoing, are too insignificant to curb the stubborn growing trend of disaster risks in our development process. Meanwhile, due to historical reasons and the limit of our understanding on disasters and risks, disaster was considered as natural and that's why our focus was mainly on the response part. Dr. Kan shared that disaster management is more emergency management in nature. It belongs to humanitarian assistance. Disaster risk reduction, in contrast, belongs to sustainable development domain. Disaster risk, is an undesired by-product in development process. Reducing and managing risks also requires development solutions. While we continue to advocate the need to make disaster risk reduction a responsibility of development agencies, we also need to acknowledge that decision makers can also be important agents for change, and make their decisions risk-informed towards resilience.

Second, what are the steps that we need to follow in decision-making and risk management processes? Dr. Kan believes risk-informed decision making is a decision that will be made based on comprehensive understanding of disaster risks and their potential impacts associated with the decision. It requires decision makers to integrate risk management process into their decision-making processes step by step. Disaster risks should be systematically identified, assessed, analyzed and considered, together with other competing factors for the decision that he/she is going to make, in an integrated manner.

There could be five steps that we need to follow in risk-informed decision making towards resilience. The first step is identifying the problem, the objective or the need to make sure we know exactly what the problem is before we try to find a solution. According to the certain international data, 40 percent of people regret the decisions that they made because they didn't think through thoroughly and the decisions did not result in the positive change as they expected. Therefore for the first step, decision makers should be crystal clear about what needs to be done. The second step is collecting relevant information as much as possible.

Decision makers should gather as much reference as they can to understand the potential impact of the decision on people, on asset, on environment even on other decisions related to theirs. Once they have enough information and reference gathered, they focus on analysis of the information and alternatives available, which is the third step, in order to select at least two best final options, a plan A and a plan B for the decision. Just in case at the last moment one of them does not somehow work as expected so they do not have to start the process all over again, they should have a backup plan. Before decision, as the fourth step, decision makers still need to evaluate the evidence comprehensively and thoroughly to make sure the evidence is all there and will support the decision that they are going to make. So once they go through this process, the final decision could be made.

Dr. Kan concluded that the easiest steps simplified for decision making processes include 1) Identifying problem (objective and needs); 2) Collecting relevant information; 3) Analyzing alternatives available; 4) Evaluating evidence; and 5) Making a decision.
When decision making is put into disaster risk management context, it should be made on the basis of the understanding of the major steps of disaster risk management. They include 1) Establishment of risk context; 2) Risk identification; 3) Risk assessment and analysis; 4) Risk evaluation; 5) Risk treatment; 6) Risk communication; 7) Risk monitoring.

Based on these simplified processes, how decision can be made risk-informed? She further suggested five steps 1) Identifying the problem and establishing risk context; 2) Collecting relevant information and identifying risks; 3) Analyzing alternatives available and assessing and analyzing risks identified; 4) Evaluating evidence and evaluating risks identified; 5) Making a risk-informed decision.

Third, how can risk-informed decisions result in resilience? Dr. Kan proposed such three major elements as implementation of risk-informed decision, risk-informed monitoring and evaluation, and documentation of the implementation process for future reference. She said that when a risk informed decision is made and put in place, implementation of a risk decision will become the center of attention. Implementation will determine if the decision results in the level of resilience decided upon. To ensure the implementation is risk informed as well, risk communication and risk monitoring and evaluation are the key to the successful result. Risk monitoring and evaluation are the key to successful results. Risk communication is to make sure all the people involved in the project implementation understand risks, impacts, mitigation measures. And their good understanding and contribution will then make a difference between risk and resilience on the ground. Risk monitoring and evaluation are to assess, analyze the implementation of risk-informed decision making against a set or risk informed indicators for the project. As risk-informed decision has not yet become the mainstream, documentation will allow us to provide more detailed information on success and lessons learned for future reference or for further promotion of the topic.

Fourth, how to create an enabling environment? She believes it should at least include the following seven elements: public understanding, government policy, legislation, disaster risk governance, accountability, community participation, and stakeholders' engagement. First of all, we need to increase public understanding. Most of the time we talk among ourselves (disaster management community) and the message has not really reached out. According to

Dr. Kan's past experience, a large majority of people are still thinking that disaster risk reduction is the responsibility of the agency or ministry who are responsible for disasters. It has not yet become the mainstream and we need to let our message out to increase the public understanding of both the public government officials and the general public, because their understanding determines the success of a risk-informed decision making towards resilience. For other enablers, for example, public policy is a powerful enabler as it represents political and executive power to guide the development in the given economy. Community participation is also instrumental to risk reduction resilience because disaster risk reduction, in essence, is really on the ground. Without successful engagement of communities, reaching resilience and maintaining that way becomes a challenge. As for stakeholders, basically we try to gather all the possible financial, human resources and capacities to meet challenges like natural hazards, climate change and environmental challenges. In the end, Dr. Kan concluded that decision is a starting point to address the problem in the right direction but implementation will make the difference on the ground.

(ii) Panel Discussion Points

a. Dr. Justine Coulson, Representative to China/ Director to Mongolia, United Nations Population Fund (UNFPA)

Disaster risk related information is considered in the decisions related to development projects in UNFPA:

- The impacts of hazards and disasters disproportionately affect women and girls. Women's unique needs do not stop when a crisis occurs – women will continue to menstruate, be pregnant, to give birth and to need access to contraceptives during every stage of a crisis - before, during and after.
- Risk-informed planning is the foundation that leads to programming which is relevant and accountable to the needs of people in all their diversity. Inclusive risk monitoring and information have to underpin contingency planning, programme development and decisions on implementation modalities.
- Risk monitoring needs to include the potential impact on sectors that provide specific services to women and girls and the potential impact on their unique sexual and reproductive health and protection needs.
- It is only when interventions and programming are determined following inclusive needs assessments, that we can truly reduce risks and prevent unnecessary suffering.

Over the years, good practices from UNFPA's work in disaster risk reduction outline the following five critical success factors - which applies equally to any discussion on SMEs.

- Undertaking risk monitoring, including assessing risks that are unique to women and girls.
- Developing contingency plans that ensure preparedness to meet women and girls' unique sexual and reproductive health and protection needs. This includes looking at preparedness in terms of expertise; coordination among actors; infrastructure including health infrastructure; supplies needed to provide essential services such as maternal health and family planning; and funding to initiate and sustain work.

• Developing disaster risk reduction/disaster management/climate change policies, frameworks, strategies and plans that take into account gender considerations and which are supported by an earmarked budget for implementation.
• Building capacity of the health workforce and legal workforce to meet women and girls' sexual and reproductive health and protection needs.
• Leveraging data to inform disaster risk reduction programming.

Ms. Coulson shared her recommendations on promoting risk-informed decision-making practice for resilience in socio-economic development.

First, risk assessment needs to take gender considerations into account.
• Risk assessments and decision-making processes need to include the needs which are unique to women and girls, older persons, people living with disabilities and other vulnerable groups and need to take into account the unique needs these groups have in regards to their sexual and reproductive health and protection.
Second, inclusive stakeholder representation is key to fostering an enabling environment.

• Good practices from the region show that consultations that include representation of a wide range of stakeholders, from strategic level to local and from general to specific, are more likely to produce outcomes that meet the actual needs of the population in all their diversity. Wide stakeholder representation will foster an enabling environment for public policy, legislation, and accountability. It is essential to always involve women-led organizations, youth-led organizations and organizations of persons with disabilities in any consultation on risks and needs.

Third, building resilient health systems requires understanding of and support to entities that are providing critical services to women and girls. Support to the health infrastructure must include support to entities that provide critical products, staff and services that are needed to provide sexual and reproductive health services.

• Investments in resilient health systems must be based on a holistic assessment of the needs on the ground, including women's unique sexual and reproductive health and protection needs. Capacity building, financial support and other targeted interventions must acknowledge the importance of these actors and include these in support schemes.
• When we fully understand the importance of various types of entities providing services to various population groups in all their diversity, we are more likely to include these in our risk assessments of external factors which may impact on their functioning. With that understanding, governments and partners can directly support and financing where it is the most needed. With that understanding and inclusion of these particular entities in government technical and financial support schemes, these entities are more likely to be able to build resilience against future risk.

b. Mr. Han Qunli, Executive Director, International Program Office (IPO) of Integrated Research on Disaster Reduction (IRDR)

Mr. Han said risk-informed decision-making is a subject that concerns all of us and is really at the core of the Sendai Framework. But after all these years of efforts, the risk-informed decision making in disaster risk reduction and resilience still remains a big challenge.

Mr. Han first introduced IRDR and how the programme is promoting risk-informed work. Since the Indian Ocean Tsunami, Wenchuan earthquake and the later major hazards in the Asia-Pacific region, what has happened has sent a very strong message to the scientific communities who is working on research related to different aspects of disasters, that it was time to move from a stage of responding to emergencies and managing disasters to coherent efforts on disaster risk reduction. It was on that background, the IRDR was launched.

The IRDR, from the beginning, has the consensus that we need to bring together the scientific, engineering, technology and the knowledge to better understand disaster risk, including hazards, vulnerability and exposure that lead to the disaster risk. Disaster risk management/reduction is quite a complex exercise, not only because hazards themselves have different types, but also the interactions with decision making processes are complicated, and the engagement with societal sectors are quite complicated. At the same time, we are also seeing the emergence of a new type of risk, which is related to many other aspects of development. In 2010, IRDR set up its mission to understand the parameters of risk, hazards, exposure and vulnerability in order to get a comprehensive understanding of disaster risk. And then, particularly, through improvement of decision-making process, IRDR community has worked with UNDRR and governments from different economies, trying to sharpen the priorities setting and targets of the Sendai Framework, including understanding risks, improvement of governance, investing in disaster risk reduction and building better back.

Mr. Han said decision making on disaster risk reduction has now encountered a lot of challenges and one of the research efforts is to look into the fact that when there is a lot of available scientific findings or knowledge or even technical solutions, why they are not put to use. This year, in Bali, IRDR worked with international science council and many experts from developing economies to look into the problem of “last mile” – why the information and knowledge are not available to local communities. And it found that the information chain or decision-making processes in disaster risk reduction have not really been complete.

Mr. Han said when we are building up new achievements with development, at the same time we are making new form of vulnerabilities and problems. These are the things that come with socio-economic development process and need to be resolved when we are talking about a risk-informed sustainable development. For example, how to support the supply of local communities during infectious diseases line the COVID-19? How to ensure urban and rural areas are both more resilient in the new context of systemic risk? How to deal with social concerns brought by the digital economy especially in terms of privacy issue? Hence he suggested to broaden the definition of “risk-informed” to more than just decision making as development itself must be risk-informed. He presented an example that when we look into the Sustainable Development Goals (SDGs), we could find those related to poverty, shelters and water, food supply, energy supply and safety, climate change and even biodiversity are actually part of development. Unless we code them, find the solution and making good

progress, we could not say we have achieved what the SDGs required us to do. If people do not have full access to food, clean water and sanitation, we cannot say we have achieved the SDGs. So this is an issue of coherence between goals and processes. So Mr. Han concluded that the issue of how we can make a risk-informed decision can be broadened into an issue of how to make decision-making processes more risk-informed.

c. Ms. Ana Thorland, Governance and Public Administration Expert, United Nations Project Office on Governance (UNPOG)

Many disasters can be avoided or prevented if there are disaster risk reduction strategies in place to manage and reduce existing levels of risk and to avoid the creation of new risk. What that amounts to is "*good disaster risk governance*." The private sector, SMEs have a key role to play in reducing economic losses and damage to critical infrastructure but must be more pro-active and engaged in disaster risk management and prevention.

Ms. Ana introduced that the United Nations Project Office on Governance (UNPOG), which is part of UN Department of Economic and Social Affairs (UN DESA), works towards promoting risk-informed governance as a pre-condition if we want to achieve the goals set in the 2030 Agenda for Sustainable Development, the Sendai Framework and the Paris Agreement. It supports central and local authorities to build their capacity and better understand their role in disaster risk reduction to build effective, accountable and inclusive public institutions. She shared a toolkit and a policy brief developed by UNPOG this year.[1]

Ms. Ana first elaborated on why SMEs and the private sector has been considered in UNPOG's future development. A key reason is because small and medium enterprises (SMEs), including MSMEs, are the bedrock of global, domestic, and local markets. SMEs support 50% of global GDP and are highly vulnerable to disasters bearing around 75% of the losses experienced by businesses after disaster strikes. SME losses often spill over into the economy, leading to unemployment, and greater poverty for vulnerable groups. Two in every three people works in an SMEs (OECD 2019). Disasters directly affect business performance and undermine longer-term competitiveness and sustainability – but many small and medium-sized enterprises do not have business continuity plans in place. She believes that a lot of work needs to be done in persuading many that investing in disaster risk reduction is as important as investing in new staff training, tools or new goods and machinery. A survey of 208 New Orleans-based SMEs, the majority located below sea-level, found that fewer than half of respondents had an emergency plan in place 11 years after Hurricane Katrina.

Man-made disasters, earthquakes and extreme weather events resulted in estimated global insured losses of USD 112 billion, last year in 2021, exceeding the previous ten-year average and confirming the trend of an annual 5% to 6% increase. According to the Asia-Pacific Disaster

[1] Toolkit on Risk-informed Governance, Innovation, Frontier Technologies Disaster Risk Reduction, Resilience: https://unpan.un.org/node/588

UN DESA Policy Brief 139 on Strengthening Disaster Risk Reduction and Resilience for Climate Action through Risk-Informed Governance. https://www.un.org/development/desa/dpad/publication/un-desa-policy-brief-no-139-strengthening-disaster-risk-reduction-and-resilience-for-climate-action-through-risk-informed-governance/

Report (ESCAP, 2019), annual economic losses due to disasters are expected to reach up to USD $675 billion in the next years. This trend should motivate significant investment in business continuity plans and strengthening critical infrastructure to mitigate the impact of extreme weather events.

In the UN, several entities support risk information in development projects with the private sector. For example, UN Office for Disaster Risk Reduction (UNDRR) www.undrr.org offers support to companies in identifying threats and risks for their operations, their supply chains and the communities where they operate. In addition, examples of how to improve coordination and decision-making with partners to invest in practices aimed at disaster risk reduction are recognized, through the ARISE, which is a network of private companies brought together by UNDRR to increase SME uptake of disaster risk reduction.

She also referred to the Sendai Framework and said that the Sendai Framework has seven targets on reducing disaster losses, including two which refer to economic losses and critical infrastructure. It recognizes the private sector as an important stakeholder in the work of disaster risk reduction and that addressing underlying disaster risk factors through disaster risk informed private investments is more cost-effective than primary reliance on post-disaster response and recovery.

Second, Ms. Ana elaborated on the challenge side. Pulling together evidence from case studies, stakeholder interviews, a workshop and some bespoke modelling, a recent report – Focus on Prevention issued by the UNDRR- found four main reasons of SMEs hesitation to invest in DRR. She quoted them as follows: Lack of access to finance, e.g. SMEs have limited access to finance for disaster risk reduction that is affordable and suited to their needs; Lack of resilient business models, e.g. lack of infrastructure to support digitization through technologies such as cloud computing; Inefficient business contracts, e.g. informal contracts that are common across the agri-food sector offer insufficient security for SMEs to invest in disaster risk reduction; Lack of prevention-focused business continuity planning, which outlines how a business will operate during an unplanned disruption in service (one estimate is that only 20-30% of SMEs have a written business continuity plan in place and those that do fail to focus on strategic foresight and disaster scenario analysis.)

She also quoted some report recommendations as follows:

• Kick-starting the market for financing DRR by increasing public and concessional finance, removing regulatory barriers to private finance, and enhancing the capacity of local financial institutions to appraise DRR investments.
•Encouraging the adoption of resilient business models by providing supporting infrastructure such as telecommunications, enhancing SME capacity and awareness, and supporting SMEs to diversify geographically.
• Promoting more efficient contracting models by addressing power balances, for instance through low-cost dispute resolution, and improving SME's capacity to understand contracts and bargain collectively.
•Supporting business continuity plans, which offers a relatively low-cost way of implementing risk prevention measures.

She also shared some exceptions in which SMEs take innovative approaches and have successfully leveraged their business continuity planning process to integrate DRR measures and reduce risk. Cleone Foods, a food and beverage SME in the UK, has leveraged elements of business continuity planning (risk assessment and prioritization) for preventative planning against frequent flooding, and diversified its supply chain, significantly reducing losses. In Kenya and Senegal, female-led SMEs have devised innovative approaches to pool capacities for preventive planning. Specifically, the SMEs formed women support groups which enabled knowledge-sharing, supported pooling of climate resilient technologies, facilitated market linkages and ultimately increased their market power.

The Sendai Framework spells out the role of the private sector/business as "to integrate disaster risk management including business continuity into business models and practices through disaster-risk informed investments." Ana said a few years back, she delivered a talk at the DRI business meeting and at the end, a private company approached here and said, "we are building a Mall in Malaysia, we have beautiful architectural plans, but we didn't consider disaster risk reduction or risk can be created due to our project." So based her own past experience, her recommendations on promoting risk-informed decision making in SMEs are: Engage in awareness-raising and training for their employees and customers; Engage in and support research and innovation, as well as technological development for disaster risk management; Share and disseminate knowledge, practices and data on economic losses and disaster statistics; Actively participate in the development of normative frameworks and technical standards that incorporate disaster risk management including active participation in the development of economy-wide domestic and local strategies for disaster risk reduction.

d. Mr. Kilian Murphy, Program Lead – Thematic Innovations, Asian Disaster Preparedness Center (ADPC)

Kilian first introduced ADPC's Vision is for "Safer communities and sustainable development through disaster risk reduction". ADPC is an international 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, it provides comprehensive technical services in the region across social and physical sciences to support sustainable solutions for risk reduction and climate resilience. ADPC works in Asia and the Pacific in building disaster risk reduction systems, institutional mechanisms and capacities to enhance resilience to numerous hazards, such as floods, landslides, earthquake, cyclones, droughts, etc. Engaging in the Private Sector and SMEs iPrepare Business Facility, ADPC dedicated facility to address, coordinate, and support ADPC private sector engagement. Its focus on SMEs include capacity development support to businesses, technical assistance to governments & business associations, knowledge management, networking and partnership.

Kilian believes the role of key stakeholders are essential in resilience building. Key stakeholders need to collaborate and complement each other's efforts for addressing risks and building resilience against unprecedented disasters, including large-scale emergencies. For example, governments as regulators and facilitators to enhance the enabling environment for businesses to establish risk informed operations; business associations as catalysts in

advocating for risk-informed decisions and practices among their members as well as acting as a mediator between the private sector and government; enterprises themselves are the key “agents for change” and must revisit their business strategies and transform their business models in order to ensure the wellbeing of employees, ensure their business operations are robust, and strengthen the overall resilience of societies.

When talking about documentation, Kilian said ADPC could be a facilitator organization in this kind of work as it has had a lot of documentation available. On enabling environment, he highlighted one challenge that is bridging the priorities between different stakeholders. Often the end goal of enhancing the resilience of communities and SMEs is common to some of the stakeholders, but the priorities and ways in which this will be achieved can be different in many cases. Kilian finally presented a few relevant ADPC + stakeholders projects.

(iii) Recommendations from Panel Discussion 1

• Improved coherence both in terms of delivery and reporting between Sendai Framework implementation and the implementation of SDGS, Paris agreement and the new urban agenda.

• Inclusive risk assessment and stakeholder representation for better critical outcomes, in order that action plans and programming are responsive and effective. The importance of being gender response cannot be overstated. Highlighting the need of women, girls, the elderly, people with disabilities and other vulnerable groups is a must in disaster risk reduction and development processes. If we do not really, truly respect the experiences of all sectors and vulnerable communities within our risk assessment, then our responses to risk are responsive to the fact that we are not be truly inclusive. Building back better and leaving no one behind cannot be achieved without an inclusive, risk-informed decision making.

• Moving from disaster risk reduction concept to the risk of disasters in overall sustainable development. We need to see the decision making of disaster risk reduction be transformed and translated into a specific term of risk governance and the responsibility of different levels. For local and central government, the overall accountability and responsibility of disaster risk reduction must be in the main agenda of the sustainable development, not as a marginal issue or ad hoc issue, but is a development objective.

• Governments act as regulators and facilitators to enhance enabling environments for businesses to establish informed operations; business associations act as catalysts and advocate risk-informed decisions and practices among their members, as well as acting as a mediator between the private sector and the government and other stakeholders; business enterprises themselves, since they would be the key agents for change, must revisit their business strategies and transform their business models.

• For SMEs employees and customers: engaging in awareness raising and training, research and innovation, as well as technological development for disaster management; sharing and disseminating knowledge practices and data on economic losses and disaster statistics; participating in the development of normative framework and technical standards that incorporate disaster risk management, including active participation in the development of government and local strategies for disaster risk reduction. The Sendai Framework spells out the role of the private sector businesses are to integrate disaster risk management, including business community into business models and practices through the risk informed investments.

• Creating or fully utilizing platforms or fora which bring together different stakeholders to promote the utilization of tangible tools and the risk-informed decision making such as business continuity planning. This would be a role such as APEC, ADPC and other partners who are involved in this Workshop can play.

iii. Panel Discussion 2: Risk-smart Business Towards Resilience – SMEs in the Post COVID-19

Questions for panelists

1. Challenges and difficulties: How did the combined forces of natural hazards and the pandemic affect the business community, especially SMEs? What are the challenges for SMEs you can cite in the context of mounting systemic risk and post-COVID landscape? What are your suggestions for tackling these challenges?

2. Opportunities and guidance
• What is risk-smart business and how it can be achieved? What are the priority areas and interventions for your organization/ enterprise to support SMEs to build resilience? How to promote a broad, increased, active and sufficient participation of the business community in resilient APEC recovery?
• Suggestions to formulate business continuity plan adaptive to the post COVID-19 landscape;
• Suggestions to implement risk-informed and climate-resilient business models and practices;
• Suggestions to apply science, technology and innovation (STI) to promote resilient and risk-smart business recovery;
• Suggestions to use economic incentives, disaster risk financing and risk transfer tools to help SMEs prevent, prepare for, respond to and recover from risks;
• Suggestions to promote public-private partnership for DRR and resilience building, in particular complementarity and co-financing.

Moderator:

- *Mr. Sanny Jegillos*, Senior Adviser/ Team Leader, Disaster Risk Reduction and Recovery for Building Resilience, Bangkok Regional Hub, United Nations Development Programme (UNDP)

Panelists (4):

- *Mr. BAI Ken*, Vice President, Lenovo Data Intelligence Business Group; General Manager, Lenovo Management Consulting and Innovation Service
- *Mr. Wang Junbo*, Director, Head Solutions China, Swiss Re-insurance Group
- *Ms. Yin Lefang*, Secretary General, Beijing Emergency Technology Innovation Alliance
- *Ms. Zhang Chunchun*, Corporate Social Responsibility (CSR) Manager, Zhongfang'anhu Emergency Education & Technology (Beijing) Co., LTD

Time and date: 09:00-10:30 (BJT), 22 November 2022 (90 minutes)

- 20 minutes for keynote speech by Mr. BAI Ken
- 70 minutes for panel discussion - around 15 minutes for each panelist

(i) Keynote Speech: Risk-smart Business Towards Resilience: SMEs in the Post COVID-19

The first key word of Ken's keynote speech is "promising & important". SMEs account for 70+% of Jobs, 50-60% of GDP and 90% of all enterprises in the Asia-Pacific Region. SMEs in the Asia-Pacific Region have not only created strong social value but also been the backbone of post-COVID-19 economic recovery. The second keyword is however "fragile & constrained". The Asia-Pacific region suffers frequent natural hazards which have caused huge economic losses. The COVID-19 has had a widespread and lingering impact on SMEs: 76% of SMEs reported a decline, 25% small enterprises closed, 11% medium sized enterprises closed.

Ken said challenges and difficulties facing SMEs in the post COVID-19 could be, first, changes in consumer demand; second, interruption of business model; third, constraints on logistics and supply chain. Ken further elaborated the three challenges as follows:

• Long-term decline in demand: Due to the adverse impact of the COVID-19 and mounting systemic risk including more complex natural hazards, the confidence and expectation of consumers declined. Common understanding is that it will take a long time for the market decline, maybe a few months or years.
• Reduced corporate income: Weak consumption will also affect the revenues of enterprise.
• Online/offline model shift: The pandemic and prevention actions have increased social distance and reduced the offline consumption. Traditional business model required a rapid shift to e-commerce.
• Globalization vs. Glocalization: One of the major challenges for SMEs is how to adapt the changing global market in the post COVID-19 era, when large enterprises tend to localize their supplies, not globalize.
• Fallen capacity utilization: In terms of logistic and supply chain, most SMEs is in the Asia-Pacific region are labour intensive. During the COVID, most of the labour supply and competitive utilization are decreased.
• Raw materials shortage: Disaster will interrupt the supply chain of raw materials, resulting in the shortage of material and raised production costs.

Ken said risk-smart business is to upgrade the resilience of enterprises with new management mode and intelligent technology, and provide support to promote the development of enterprises. To deal with the challenges SMEs are now facing and integrating a risk-smart business philosophy into SMEs risk management process, a resilience building framework could be introduced. Based on his past experience in both SMEs and large enterprises, Ken shared that this kind of framework could be set up in three dimensions: strategy, operation and enablers. At strategic level, risk management and business continuity plan should be put in place in advance. At operational level, innovation and digital technologies could be utilized in line with the condition of a certain SME. And at enablers level, resilience ecosystem needs to be established and all-round support from stakeholders are needed.

The achievement of risk-smart business also needs to make efforts from the above-mentioned three aspects: The first step is to enhance the risk management and business continuity and the second one is to utilize the innovation idea and digital technology to adapt the new

business model. The third one is to build a resilience supply chain eco- system and strengthen all-around support through public private partnership.

Ken introduced that to cope with challenges brought by global supply chain in the post COVID-19, Lenovo has established supply chain intelligent control system which integrates the public data of climate, economic, epidemic and the information about plants, suppliers and logistic enterprises. Through the integrated model process of risk warning model, it can anticipate the potential supply chain risk in advance based on the big data analysis and then respond quickly by effective material allocation to minimize financial losses.

To achieve risk-smart business, SMEs should combine risk management into their enterprise development strategy, change risk management behavior from reactive to proactive and at the same time engage in digital transformation to improve intelligent capacity of their supply chain. In the post COVID 19, businesses are facing huge challenges on both demand and supply side. Ken presented an example of a famous hot pot restaurant in China. It was forced to close most of its offline outlets during the pandemic but later it started to expand its sales channel through the online streaming to meet the needs of new business models such as online shopping, take-away delivery and also community group procurement. It also collaborated with their suppliers to develop new products and designed new packages suitable for take-away delivery. With these innovations in business model, products and packages, this restaurant survived from the impact of the COVID and achieved steady increase in revenue.

Risk-smart business has high requirements on digital technology application, financial investment and human resources management. However it is difficult for enterprises, especially the SMEs, to comprehensively improve the capability by their own. Public private partnership is then necessary. The government is responsible for the construction and maintenance of infrastructure, the building of rescue forces, the development of intelligent emergency management system and the reserve of relief supplies, all of which could provide a stable external environment for SMEs.

Ken also talked about the ecosystem of industry supply chain. He said leading enterprises in the eco-system can contribute more. In 2019, Jingdong Logistics (JDL), a well-known logistics enterprise in China, established cloud logistic model and integrated the resources of SMEs and their consumers, warehousing and logistic enterprise into this cloud system. For partners who join this platform, JD logistic provides advanced warehouse management mechanism, local logistics management system and warehouse automation equipment so that SMEs involved can all benefit.

Ken concluded that for SMEs to transform into a risk-smart business model, efforts could be made in the following four areas: First, workforce managemen and risk management training for employees, as well as relevant performance evaluation and incentive mechanism. Second, considering and integrating “risk” as a factor into decision making, setting up risk prevention model, carrying out risk scenario analysis and making decision based on the analysis result. Third, capturing new opportunities through innovation amid changing business environment. Fourth, digital technology application. Risk-smart business towards resilience is a long-term

issue. Ken said that more public private partnerships and international corporation in this field is expected.

(ii) Panel Discussion Points

a. Mr. Wang Junbo, Director, Head Solutions China, Swiss Re-insurance Group

SMEs are very important pillars for the economy in China in terms of number of enterprises and the GDP contribution. Wang looks at SMEs resilience building in the post COVID-19 more from insurance perspective. The insurance penetration of SMEs is much lower than large corporates in large economies. Based on quantitative and qualitative research and interviews of industry experts, it is due to the following reasons:

First, lack of productive risk management and awareness. Many SMEs awareness is increasing because of many factors, such as the COVID 19, supply chain disruption, natural hazards, etc. But their awareness is still lower than that of large enterprises. SMEs now have no good H&S framework and risk management in place. Second, distribution channel for sufficient access to financial and insurance products is very limited for SMEs despite government policies, financial support and banking insurance industry support. Third, access to limited safety and risk management technology.

Wang proposed some potential ways to close the gaps. First, providing modelling risk management tools to SMEs on natural hazards, safety production, or environmental protection. Second, enhancing public private partnership. Governments can coordinate insurance industries to help provide more affordable and better customized insurance products to SMEs in case of major catastrophic disasters. And SMEs can transfer part of the risks to the insurance industry to help themselves recover their production.

Wang also talked about distribution channel and access to insurance. He believes it could be the main point for SMEs and financial institutes. Taking insurance industry as an example – in the past, SMEs do not really want insurance while financial institutions also need to better assess the risks of the SMEs and the data is still rather limited. There has been some progress over the years, however, there are still ways to make progress even faster. A data-driven distribution channel could better enhance the transparency between SMEs and financial institutions. Wang suggested four main ways could be considered:

First, improved eco-system/supply chain. Large enterprises always have access to a huge number of SMEs in their eco-system. They have data on SMEs and can also provide a lot of insurance products for their SMEs. This is a possible way of more efficient distribution.

Second, safety management/risk management in SMEs. Risk awareness is overall increasing. There are rising industries who are actually professional companies who provide safety services to the clients, to the SMEs. The insurance industry or financial companies can collaborate with these kind of companies and package insurance services together with safety/risk management service.

Third, the insurance and banking industry can collaborate more to exchange data and better leverage information access to SMEs.

Fourth, technology can change the risk landscape of SMEs. Wang said a few development trends are being identified – Some SMEs are already installing Internet of Things (IoT) devices to monitor the risk of fire and floods and movement of people in their factories. The role of technologies could be much better leveraged.
Wang concluded that: first, insurance penetration in SMEs in China still needs improvement. Second, technology is improving and there is actually more efficient insurance distribution we can leverage. Third, the financial industry has tremendous potential to be leveraged to support SMEs.

Mr. Sanny Jegillos, Senior Adviser/ Team Leader, Disaster Risk Reduction and Recovery for Building Resilience, Bangkok Regional Hub, United Nations Development Programme (UNDP)

Sanny, as the moderator, commented that from the perspective of UNDP, it shares a common view/agenda on insurance. It is looking at similar issues of how insurance solutions can address the most vulnerable to disasters and the pandemic, including SMEs. He shared that UNDP's relevant studies also found SMEs facing low risk awareness and low access to insurance.

b. Ms. Zhang Chunchun, Corporate Social Responsibility (CSR) Manager, Zhongfang'anhu Emergency Education & Technology (Beijing) Co., LTD

Zhang said SMEs have been hardest hit by the COVID-19. Sectors like retailing, food services and entertainment services are suffering from customers losses, revenue declines, and even the business closure. But she believes COVID-19 could be regarded as a catalyst to review the issues for SMEs. She summarized that barriers for SMEs are to secure resources and funding for recovery. Specifically, the first challenge is from both supply and demand side. On the supply side, SMEs are experiencing reduction in labor, interruption of businesses and shortage of goods. On the demand side, a dramatic and sudden loss of demand and revenues adversely affect the ability of SMEs to normally function and thus may cause severe liquidity shortage. The second challenge is resources and opportunity gaps. Access to capital, access to skill development and access to business network are still not adequate for SMEs.

Zhang said both large and small firms could all be adversely affected by natural hazards, infectious diseases and other risks, but SMEs are always especially severely affected because of their higher level of vulnerability and low resilience due to their sizes. To tackle these challenges, resilience is obviously an important concept in crisis management. So a risk-smart business is sensitive to risks and resilient when at risk. Zhang then divided it into two parts: external and internal. For internal factors/capacity building, they may include:
First, financial ability. A constant and positive cash flow needs to be ensured and an effective cost control should also be ensured. Second, corporate governance. SMEs should pay attention to their corporate culture, mission and vision which should be very clear so that members there could be resilient, creative and sustainable. Third, connection to business eco-system. The business eco-system where SMEs are in can integrate resources from upstream,

midstream and downstream. Establishing relationships and stay connected in this ecosystem could help SMEs become more flexible and adaptable during emergencies.

For external factors, Zhang suggested they include social, policy and market environment. She encouraged SMEs to consider the development space for the industry and the feasibility of market demands. If enterprise social values can feed the social needs and address social concerns/issues, the company will have opportunity to me more resilient during risks.

Zhang then introduced how her enterprise is engaging in disaster resilience building. Zhongfang'anhu Emergency Education & Technology (Beijing) Co., LTD is a private enterprise focusing on emergency preparedness and disaster prevention through building a "1+3+N" model that integrates the government, enterprises, communities and other multiple social forces in emergency linkage mechanism. The company is now working with about 650,00 convenience stores in local communities across China to prepare for and ensure the supply of daily necessities particularly during the pandemic or other emergencies. The model is a collaborative network for community safety and protection, which contributes to the sustainable development of public welfare, corporate social responsibility and enterprise resilience. 1 means the Party, the center. 3 means the government, enterprises and local communities, who are integrated as bases. N means social forces, such as small shops in community, pharmacies, security guards, delivery man, social workers and nonprofit actors. These stakeholders give full play of their own industry and professional advantages to participate in emergency linkage mechanism, which is also called a community emergency security network. It is a good chance to involve the SMEs around communities into this network to enhance their resilience.

Zhang concluded that three strategies should be implemented to ensure business continuity. First, the core element is "team". The greatest asset in any organization is its people. The founding team serves as a key player while team members should be reliable and equipped with organizational skills and strong leadership qualities like resilience, creativity, and anti-risk ability especially under the pressure. Second, environmental factors like social, policy and market environment should be considered. Third, SMEs should be clear about their social values. They should clarify their target groups; they should think about whether they can address customer needs and create social values through the services they provide.

Mr. Sanny Jegillos, Senior Adviser/ Team Leader, Disaster Risk Reduction and Recovery for Building Resilience, Bangkok Regional Hub, United Nations Development Programme (UNDP)

Sanny, as the moderator, summarized that solutions would have to be in a more systemic way: technology, financing, public private partnership, all of human agencies and all of people in communities being involved in the process in a meaningful way could lead us to effective solutions.

c. Ms. Yin Lefang, Secretary General, Beijing Emergency Technology Innovation Alliance

Yin said that the impact of the COVID-19 on SMEs could be reflected in several aspects. First, production cannot be carried out as planned, and in many cases, business needs to be closed.

Second, business could not be carried out normally. Third, lack of market and capital flow. Facing such challenges, stakeholders including SMEs themselves can do more in several aspects. First, guiding enterprises to change their policy mindset, risk management mindset and business models. Second, supporting SMEs in exploring new business opportunities thorough innovation such as online options. Third, connecting the government and SMEs. Fourth, establishing publicity channels and providing opportunities for online/offline exhibition. Fifth, reduction in taxes, renting fees and other financial support could be provided.

Yin also introduced how Beijing Emergency Technology Innovation Alliance is supporting SMEs. The Alliance is the only social organization registered in China's emergency response system, which was jointly established by SMEs, experts and non-governmental organizations (NGOs) in 2017 and now has more than 400 members, most of which are SMEs. Since its foundation, it has been organizing its SME members to participate in emergency relief and COVID-19 prevention and control if China. In this process, the Alliance has helped create cooperation and communication platforms and channels for its SME members, and connect them with various stakeholders. Yin concluded that industry alliance can play as a bridge and platform for its SME members in their resilience building.

Mr. Sanny Jegillos, Senior Adviser/ Team Leader, Disaster Risk Reduction and Recovery for Building Resilience, Bangkok Regional Hub, United Nations Development Programme (UNDP)

Sanny, as the moderator, summarized the panel from two aspects. First, importance of evidence and data in our planning and decision making. Second, not just addressing one problem but taking a systemic thinking (systemic design) approach.

(iii) Recommendations from Panel Discussion 2

• At government level, there is a need to focus on improved inclusiveness more than just economic growth and increased total job creation.

• More public private partnerships and international corporation is needed. The government and NGOs and enterprises need to work together to support SMEs to achieve the risk smart business through leading practice sharing, technology application guidance and global and regional supply chain echo system construction.

• To develop a risk-smart business model, SMEs could make improvements in the following four areas. First, risk management/arwareness-raising training for employees, relevant performance evaluation and incentive mechanism. Second, considering risk as a factor into decision making, setting up risk prevention model, carrying out risk scenario analysis and making decision based on the analysis result. Third, capturing new opportunity in the changing business environment and meeting new market/customer demands through innovation. Fourth, digital technology application.

• Supporting business continuity plans could offer a relatively low-cost way of implementing risk prevention measures.

• The government should find effectives ways to connect financial institutions and SMEs so that before or during emergencies, SMEs can have access to financial or insurance resources and channels to resolve problems.

• SMEs could engage in the development of normative frameworks and technical standards.

• Stakeholders could guide enterprises to change their business mindset and models towards risk-informed and risk-smart ones.

iv. Panel Discussion 3: Risk Monitoring and Assessment Tools or Methodology Towards Risk-informed Preparedness

Questions for panelists

1. What are the risk monitoring and assessment tools or methodology used by your organization? Please briefly explain the major factors and steps, successful applications, challenges and limitations.
2. What is your opinion on developing standard risk monitoring and assessment tool or methodology in the Asia-Pacific region to facilitate risk-informed preparedness? Please briefly share your recommendations or challenges and way forward.
3. How to improve the user-friendliness of risk monitoring and assessment tool for the SMEs to help them make better preparation?

Moderator:

- *Prof. Chen Xiaofei*, Academician, Chinese Academy of Sciences; Chair Professor and Head, Department of Earth and Space Sciences, Southern University of Science and Technology, China (20 minutes)

Panelists (4):

- *Prof. Chen Xiaofei,* Academician, Chinese Academy of Sciences; Chair Professor and Head, Department of Earth and Space Sciences, Southern University of Science and Technology, China
- *Ms. Anna Chieng,* Vice President, Public Sector Solutions Southeast Asia, Swiss Re-insurance Group
- *Prof. Yan Jianping,* Professor, Shanghai Normal University, China
- *Mr. Fei Wei,* Assistant Researcher, Disaster Assessment Department, National Disaster Reduction Center, Ministry of Emergency Management, China

Time and date: 10:30-11:55 (BJT), 22 November 2022 (85 minutes)

- 20 minutes for keynote speech by Mr. Chen Xiaofei
- 65 minutes for panel discussion – around 15 minutes for each panelist

(i) Keynote Speech: Principles for Model and Tool Development Towards Risk-informed

• Background

Chen first introduced that the Asia-Pacific region is one of those with the densest population in the world. The region has a population of about 2.9 billion, accounting for nearly 40% of the world. The GDP and trade of the region both account for nearly half of the world. Most APEC economies are located along the Pacific Rim volcanic-seismic belt and prone to extreme weather events. Floods, storms, epidemics, earthquakes and landslides are among the most devastating and frequent hazards in APEC economies. With the intensification of climate change, further economic growth and a new round of capital concentration, the hazard risk in the Asia-Pacific region is on the rise, and this trend will not slow down in the foreseeable

future. Particularly, the hazard risk in the region may be potentially amplified by the dense industrial and supply chains, posing a global threat to sustainable development.

Chen proposed that the problem is how to cope with the constant threat from hazards and effectively reduce disaster losses in APEC economies. In recent years, the view of emergency preparedness focusing on post-disaster has been widely discussed. The emphasis on general preparedness in the whole process of risk prevention and resilience building has become an international consensus, including economies in the Asia-Pacific region. Risk-informed preparedness not only includes understanding the risk formation mechanism but more importantly, utilizing models and tools to collect, analyze and apply risk information in the whole process of land planning, urban layout, building construction, infrastructure maintenance, emergency rescue and post-disaster recovery, so as to cover as many elements as possible to minimize hazards risks and strengthen resilience building.

Chen briefly reviewed existing risk assessment models and tools in the region: The regional technical standards and guidance frameworks are still incomplete and non-unified; Developing economies are lack of relevant technical forces to fully apply the existing models/tools and adapt to future ones; The sharing, communication and cooperation of existing models/tools/database among economies can be further enhanced.

• Principles and objectives

Chen elaborated that the objective of this keynote speech is to encourage APEC economies to develop relevant models/tools towards risk-informed emergency preparedness and further map and understand risks. He suggested the following principles in promoting risk-informed emergency preparedness:
First, technical system. Dynamic risk assessment models should be developed to understand disaster risks and their trends. Models and tools development should consider the situation of certain economy and relevant technical frameworks should be improved and effectively utilized. Specialized training and demonstration projects on risk-informed disaster preparedness could be developed and promoted.

Second, whole-process preparedness. Risk information should be applied to the entire disaster preparedness process, including land planning, urban layout, building construction, infrastructure maintenance, emergency response and post-disaster recovery to minimize risks and enhance resilience building.

Third, science-based approaches and accuracy. The development of risk assessment models and tools should follow a scientific and systematic framework, comprehensively considering hazards, exposure, vulnerability and disaster preparedness capacity in certain economy.

• Key actions:

According to the four components of risk, namely hazards, vulnerability, exposure and capacity for prevention, response and recovery, Chen then proposed ten key actions towards risk-informed emergency preparedness:

$$\text{Risk} = \frac{\text{Hazard} \times \text{Vulnerability} \times \text{Exposure}}{\text{Capacity of Response and Recovery}}$$

First, compiling hazard zoning maps. (Hazard)
Second, setting codes for newly-built buildings and infrastructures. (Vulnerability)
Third, promoting safety appraisal and reinforcement measures for existing buildings and infrastructures. (Vulnerability)
Fourth, applying risk information to planning and decision making. (Exposure)
Fifth, highlighting the role of risk information in investment planning. (Exposure)
Sixth, strengthening risk monitoring and early warning at different spatial-temporal scales. (Exposure)
Seventh, enhancing capacity of emergency relief and secondary disaster prevention. (Capacity of response and recovery)
Eighth, preparing for the needs of temporary and rapid re-settlement of disaster-affected people (especially for million-level and above). (Capacity of response and recovery)
Ninth, preparing for rapid recovery of lifelines and infrastructure functions. (Capacity of response and recovery)
Tenth, developing catastrophe insurance and other risk transfer tools. (Capacity of response and recovery)

• Possible Tools List

Chen suggested a few tools/methods that can be considered/developed/implemented to support risk-informed emergency preparedness.
First, software for compiling comprehensive risk zoning maps. (Hazard)
Second, database of hazards. (Hazard)
Third, database/dynamic updating system of population, transportation and exposure. (Vulnerability)
Fourth, safety appraisal and assessment tools for existing and newly-built buildings and critical infrastructures. (Vulnerability)
Fifth, different qualitative models/tools for hazards to be used in land planning. (Exposure)
Sixth, tools for assessing socio-economic impact of natural hazards and risks. (Exposure)
Seventh, scientific and digital management system of emergency relief resources. (Capacity of response and recovery)
Eighth, dynamic monitoring and early warning system. (Capacity of response and recovery)
Ninth, intelligent decision-making system. (Capacity of response and recovery)
Tenth, contingency plans for emergency preparedness, response and relief. (policy and training)
Eleventh, knowledge hub for major disaster information and joint response. (policy and training)
Twelfth, guiding opinions/standards on establishing and managing emergency shelters. (policy and training)
Thirteenth, emergency response training for communities. (policy and training)

(ii) Panel Discussion Points

a. Ms. Anna Chieng, Vice President, Public Sector Solutions Southeast Asia, Swiss Re-insurance Group

Anna said, globally, we are in a very dynamic risk landscape today with natural hazards becoming more frequent and concurrent. When dealing with these challenges, data is helping and the terms around PPP play a very big role. Access to real-time global hazard data now has become critical for success.

She shared that Swiss Re also has robust risk assessment tools and the reason why it is developing such tools and stressing risk assessment is that:

• Enabling growth: improved risk assessment for better bottom-line results; sound product development to facilitate growth.
• Optimizing portfolios: optimizing risk assessment to support underwriting, claims analysis, risk management and more.
• Improving efficiency: increased transparency over different markets; swift processes to reduce cost.

She then presented Swiss Re's web-based nat cat risk assessment tool which can typically applied in three ways. First, it can be used in single site assessment to get the full view on hazard exposure for one location. Second, it can support location set analysis to check multi-location policies within minutes. Third, it can be used for event footprint analysis to check how an event affects your location set. She resonated around Prof. Chen's presentation that database matters which is very important, such knowing what assets you have and where the locations are. She also further elaborated on Swiss Re's system of location set analysis and event impact analysis to show that digital tools can help with risk-informed preparedness.

The moderator then raised a question on the challenging part of utilizing risk assessment tools. Anna mentioned the regulatory part and transparency.

c. Prof. Yan Jianping, Shanghai Normal University

Prof. Yan first introduced a risk assessment tool developed by an Asian Development Bank (ADB) -funded project in Mongolia as he himself also engaged in this project. The tools include:

• Geospatial database: basic data and maps; digitized hazard zoning maps (11 hazard types); geo-referenced elements at risk (10 categories).
• Risk profile databases: 140 exposure analytic tools covering 26 elements at risk in 10 categories that include such as community population, households, residential buildings, critical facilities, network infrastructure, lands, crops, livestock and important enterprises.
• Risk hotspot atlases: hazard zoning atlas, exposure hotspot atlas and vulnerability hotspot atlas
• Assessment reports: baseline assessment; exposure and vulnerability profiles and hotspots
• Technical specifications

• Training manual: disaster risk assessment training needs assessment report; disaster risk assessment training programme manual
• DocLibrary

Yan then shared processes to develop these disaster risk assessment tools:

Step 1: content analysis. Defining target hazards and elements at risk, key stakeholders, etc.
Step 2: hazard mapping and geospatial modelling of target elements at risk. identifying and characterizing major hazards and threats; building geospatial models of target elements at risk.
Step 3: exposure analysis. Mapping the exposure of elements at risk and classify the exposure level of elements at risk.
Step 4: vulnerability analysis. Building vulnerability models of elements at risk in line with the availability of data and classify the vulnerability level of elements at risk.
Step 5: capacity assessment. Visualizing risk profiles and identifying risk hotspots.
Step 6: preparing comprehensive jurisdictional risk profile.
Step 7: visualizing risk (for example, exposure and vulnerability) profiles and identifying risk hotspots.

Yan mentioned that the main challenge could be how to train people to put these risk assessment tools into use and apply them to different planning. And limitations could include data availability. As for a unified risk assessment tool in certain region, useful approaches could be unifying all the classification from different hazards and unifying the classification of the occurrence probability among different hazards.

d. Mr. Fei Wei, Assistant Researcher, Disaster Assessment Department, National Disaster Reduction Center, Ministry of Emergency Management, China

Fei suggested to reinforce disaster risk monitoring and warning cooperation and establish disaster early warning and disaster risk information sharing mechanism. Fei also said that people-to-people exchange and mutual learning is also helpful to share risk assessment tools practice.

v. Closing remarks by Ms. Guan Yan, APEC EPWG Co-Chair; Director, International Cooperation Department, National Disaster Reduction Center, Ministry of Emergency Management of China

Yan said after the inspirational discussions over the past two days, the workshop came to an end. As one of the co-chairs of APEC Emergency Preparedness Working Group (EPWG), she was delighted to be able to engage with so many leading experts in in-depth discussions about risk-informed decision making, emergency preparedness and science, technology and innovation application in early and anticipatory action. She said a big thank you to all moderators and panelists for their active participation and great contribution to this event. Their insightful remarks will be the most valuable outcomes of this event. And she also expressed gratitude to colleagues from other EPWG member economies for their support.

She said, just as we discussed over the past two days, more frequent disaster risks, compounded by the impact of the COVID-19, are presenting mounting risk of disasters to the Asia-Pacific region and calling for risk-informed decision making and preparedness efforts. Preventing risks through effective early warning and promoting sustainable development through practical policy commitments have become the common aspiration and shared responsibility of economies in this region. She said we are glad to see SMEs and the wider business community engaging more actively in regional disaster risk reduction and people at various levels and in the whole industries no longer being just the recipient of aids, but also the main contributor to resilience and recovery. All these can prove that when faced with challenges, by standing together, we see hopes.

She concluded that, going forward, EPWG member economies will work together to implement APEC Putrajaya Vision 2040, Aotearoa Plan of Action, 2022 APEC Economic Leaders' Declaration and engage more actively in the even wider international efforts to contribute to the implementation of the Sendai Framework, the UN 2030 Agenda for Sustainable Development and relevant leading initiatives. As for EPWG China, she also said it is willing to take this event as an opportunity to push forward wider and deeper mutual learning with EPWG members, international and regional organizations, the academia and the private sector and together find answers to the questions given by current challenges.

In the end, she closed the workshop by appreciating the support and collaboration of all and hoping to meet all in person in future events.

Attachment I WORKSHOP AGENDA

Workshop on Risk-smart Business for SMEs in the Post COVID-19
21-22 November 2022

Day 1: 21 November 2022 (Monday) 09:00 – 11:00 (Beijing Time)	
08:00 – 09:00	**Test run**
09:00 – 09:10	**Opening Session** Moderator: • Ms. Tamier, Program Officer, International Cooperation Department, National Disaster Reduction Center, Ministry of Emergency Management, China Speakers: • Welcoming remarks by Ms. Guan Yan, Co-Chair of APEC Emergency Preparedness Working Group (EPWG) • Opening remarks by Mr. Li Shengli, Deputy Director General, International Cooperation and Rescue Department, Ministry of Emergency Management, China • Opening remarks by Mr. Zhang Xiaoning, Project Overseer; Director General, National Disaster Reduction Center, Ministry of Emergency Management, China
09:10 – 09:15	**Group Photo**
09:15 – 11:00	**Panel Discussion 1:** **Risk-informed Decision-making Towards Resilience** Discussion points: • How is disaster risk-information considered in the decisions related to development projects in your organization? • What are the major successes, challenges and limitations in your risk-informed decision-making, especially in its implementation? • What are your recommendations in order to further promote risk-informed decision-making practice for resilience in socio-economic development? Moderator: • *Dr. Kan Fengmin*, Senior Consultant; Former Regional Chief, Asia-Pacific Regional Office, United Nations Office for Disaster Risk Reduction (UNDRR) Keynote speech: • *Dr. Kan Fengmin*, Senior Consultant; Former Regional Chief, Asia-Pacific Regional Office, United Nations Office for Disaster Risk Reduction (UNDRR) (20 minutes) Panelists: • *Dr. Justine Coulson*, Representative to China/ Country Director to Mongolia, United Nations Population Fund (UNFPA)

	• *Mr. Han Qunli*, Executive Director, International Program Office (IPO) of Integrated Research on Disaster Reduction (IRDR) • *Mr. Kilian Murphy*, Program Lead – Thematic Innovations, Asian Disaster Preparedness Center (ADPC) • *Ms. Ana Thorland*, Governance and Public Administration Expert, United Nations Project Office on Governance (UNPOG)
Day 2: 22 November 2022 (Tuesday) 09:00 – 12:00 (Beijing Time)	
08:00 – 09:00	**Test run**
09:00 – 10:30	**Panel Discussion 2:** **Risk-smart Business Towards Resilience -SMEs in the Post COVID-19** <u>Discussion points 1: Challenges and Difficulties</u> • How did the combined forces of natural hazards and the pandemic affect the business community, especially SMEs? What are the challenges for SMEs you can cite in the context of mounting systemic risk and post-COVID landscape? What are your suggestions for tackling these challenges? <u>Discussion point 2: Opportunities and Guidance</u> • What is risk-smart business and how it can be achieved? • What are the priority areas and interventions for your organization/ enterprise to support SMEs to build resilience? How to promote a broad, increased, active and sufficient participation of the business community in resilient APEC recovery? • Suggestions to formulate business continuity plan adaptive to the post COVID-19 landscape; • Suggestions to implement risk-informed and climate-resilient business models and practices; • Suggestions to apply science, technology and innovation (STI) to promote resilient and risk-smart business recovery; • Suggestions to use economic incentives, disaster risk financing and risk transfer tools to help SMEs prevent, prepare for, respond to and recover from risks. • Suggestions to promote public-private partnership for DRR and resilience building, in particular complementarity and co-financing. <u>Moderator</u>: • *Mr. Sanny Jegillos*, Senior Adviser/ Team Leader, Disaster Risk Reduction and Recovery for Building Resilience, Bangkok Regional Hub, United Nations Development Programme (UNDP) <u>Keynote speech</u>: • *Mr. Bai Ken*, Vice President, Lenovo Data Intelligence Business Group; General Manager, Lenovo Management Consulting and Innovation Service (20 minutes) <u>Panelists</u>:

	• *Mr. Bai Ken*, Vice President, Lenovo Data Intelligence Business Group; General Manager, Lenovo Management Consulting and Innovation Service • *Mr. Wang Junbo*, Director, Head Solutions China, Swiss Re-insurance Group • *Ms. Yin Lefang*, Secretary General, Beijing Emergency Technology Innovation Alliance • *Ms. Zhang Chunchun*, Corporate Social Responsibility (CSR) Manager, Zhongfang'anhu Emergency Education & Technology (Beijing) Co., LTD
10:30 – 11:55	**Panel Discussion 3: Risk Monitoring and Assessment Tools or Methodology Towards Risk-informed Preparedness** Discussion points: • What are the risk monitoring and assessment tools or methodology used by your organization? Please briefly explain the major factors and steps, successful applications, challenges and limitations. • What is your opinion on developing standard risk monitoring and assessment tool or methodology in the Asia-Pacific region to facilitate risk-informed preparedness? Please briefly share your recommendations or challenges and way forward. • How to improve the user-friendliness of risk monitoring and assessment tool for the SMEs to help them make better preparation? Moderator: • *Prof. Yang Saini*, Professor, School of National Safety and Emergency Management, Beijing Normal University, China Keynote speech: • *Prof. Chen Xiaofei*, Academician, Chinese Academy of Sciences; Chair Professor and Head, Department of Earth and Space Sciences, Southern University of Science and Technology, China (20 minutes) Panelists: • *Prof. Chen Xiaofei*, Academician, Chinese Academy of Sciences; Chair Professor and Head, Department of Earth and Space Sciences, Southern University of Science and Technology, China • *Ms. Anna Chieng*, Vice President, Public Sector Solutions Southeast Asia, Swiss Re-insurance Group • *Prof. Yan Jianping*, Professor, Shanghai Normal University, China • *Mr. Fei Wei*, Assistant Researcher, Disaster Assessment Department, National Disaster Reduction Center, Ministry of Emergency Management, China
11:55 – 12:00	**Closing Session** • Closing remarks by *Ms. Guan Yan*, Co-Chair of APEC Emergency Preparedness Working Group (EPWG)

Attachment II PRESENTER BIOGRAPHICAL NOTES

(In order of speaking in the Workshop)

Dr. Kan Fengmin, Former Regional Chief, Asia-Pacific Office, United Nations Office for Disaster Risk Reduction (UNDRR)

Dr. Fengmin Kan received her Ph.D in Social Science from Utrecht University in the Netherlands. She was the Regional Chief of UNDRR's Asia-Pacific office in Bangkok before her retirement in 2017. Prior to her last post in the United Nations, she worked as Head of UNDRR's Regional Office in Nairobi, Kenya; Head of the Advocacy and Outreach Unit in Geneva, and Senior Advisor to the Special Representative of the UN Secretary-General for Disaster Risk Reduction, also in Geneva, mainly responsible for engaging parliamentarians, regional parliaments and the inter-Parliamentary Union. Before she joined UNDRR in 2002, Dr. Kan represented the UN Office for the Coordination for Humanitarian Affairs (UNOCHA) as the first Regional Disaster Response Advisor in Asia based in Kobe, Japan, where she set up OCHA's Regional Office and advanced OCHA's partnership and networks with central governments and regional organizations in Asia. She joined the United Nations in 1993, working for the UN's peace mission in Mozambique.

Dr. Justine Coulson, Representative to China/ Director for Mongolia, United Nations Population Fund (UNFPA)

Dr. Justine Coulson is Representative to China and Director for the United Nations Population Fund (UNFPA) in Mongolia. She joined UNFPA in 2016 as the Deputy Regional Director for East and Southern Africa. Prior to this, she spent over 10 years with MSI Reproductive Choices in a number of leadership positions and finally as the Regional Director for Asia. Ms. Coulson began her career in international development as the Social Development and Gender Adviser in the Global Urban Research Unit at the University of Newcastle, UK, before moving to the Economic Policy Unit at Save the Children, UK. She has worked in Asia, Latin America and Africa across a broad portfolio of development issues, always with a focus on addressing inequality and upholding the rights of women and girls. She holds a Ph.D. in Gender and International Development from the University of Newcastle, U, and a Bachelor of Arts in Latin American Studies from the University of Liverpool, UK.

Mr. Han Qunli, Executive Director, International Programme Office (IPO), Integrated Research on Disaster Risk (IRDR)

Mr. Han started the current position in IRDR in September 2017. He is also the research professor at the International Research Center of Big Data for Sustainable Development Goals (SDGs) in Beijing, under the Chinese Academy of Sciences (CAS). He worked for UNESCO during 1990-2017 and was at different positions, including Programme Specialist on environmental sciences, Deputy Director of Asia-Pacific Science Bureau, Director of Tehran Cluster Office (Afghanistan, Iran, Pakistan and Turkmenistan), Director of Executive Office UNESCO's Natural Science Sector. His last duty in UNESCO was the Director of the Division of Ecological and Earth Sciences and the Secretary of the Man and the Biosphere (MAB) Programme (2013-2017).

Mr. Kilian Murphy, Program Lead - Thematic Innovations, Asian Disaster Preparedness Center (ADPC)

Under the Preparedness for Response and Recovery Department of ADPC, Kilian works on supporting the implementation of projects for Private Sector Engagement in Disaster Risk Reduction and helping to document best practices and lessons learned in these areas. As part of ADPC's iPrepare Business Facility, he works to raise the awareness and promote an effective enabling environment for businesses to engage in Disaster Risk Reduction. He has designed and supported on the roll-out of various training schemes and tools on small and medium sized enterprises (SMEs) resilience and business continuity management (BCM) and adapted these for various sectors and economies' contexts. He is also working to expand ADPC's portfolio to integrate innovation for disaster risk management as part of ADPC's flagship programs including the regional Asian Preparedness Partnership (APP) and Strengthening Preparedness for Emergency Response and Recovery India (PROSPER- India). Kilian holds an MSc in Disaster Management from Coventry University as well as a BA in Geography from the University of Nottingham in the UK.

Ms. Ana Cristina Thorlund, Governance and Public Administration Expert, United Nations Project Office on Governance/DPIDG, UN Department of Economic and Social Affairs (UN DESA)

Ana Cristina Thorlund joined the United Nations System in 2005. She is currently working in the United Nations Project Office on Governance of UN DESA; prior to this assignment, Ana worked in UNDRR's Office for Northeast Asia and Global Education and Training Institute in the Republic of Korea as a liaison officer for China, Korea, DPR Korea and Mongolia. She also led the Secretariat of the International Recovery Platform in Kobe, Japan and served in UNDRR for the parliamentarians and gender initiatives in Geneva. In this capacity, she has supported the engagement of members of parliament from Asia, Africa, Europe and Latin America in disaster risk reduction and climate change adaptation. She supported legislative efforts to develop the Disaster Risk Reduction and Management law in the Philippines (2010), the East African Community (EALA) and the Latin American Parliament for the Protocol on Disaster Risk Management. Ana has supported the CEDAW Committee for the Development of the General Resolution 37 on Gender, Climate Change and Disaster Risk Reduction. Her most recent publications are co-authoring the UN DESA Policy Brief on Strengthening Disaster Risk Reduction and Resilience for Climate Action through Risk-informed Governance and the Trilateral best practices: Application of technology for reducing disaster risks in China, Japan and Korea. Her academic background includes a master of sciences from the University of Geneva in Switzerland and a specialization in assessing and managing geological and climate-related risk.

Mr. Sanny Jegillos, Senior Adviser/ Team Leader, Disaster Risk Reduction and Recovery for Building Resilience, Bangkok Regional Hub, United Nations Development Programme (UNDP)

Prior to assuming the Senior Adviser and Team Leader post at the Bangkok Regional Hub in 2014, Sanny Jegillos was the Regional Disaster Reduction Adviser and Practice Coordinator for UNDP's Bureau for Crisis Prevention and Recovery in Asia-Pacific Regional Centre in Thailand

since 2012. From 2005-2011, he was the Programme Coordinator of the Regional Programme on Capacity Development for Tsunami affected economies. Mr. Jegillos has more than 30 years of progressive professional experience in risk reduction and recovery in the Asian region with advanced expertise in local and community based disaster risk management. He has developed and conducted international training courses, managed and coordinated regional projects and lead in innovation application and partnership with the private sector. He also provides technical and policy advisory services to UNDP Offices and International Non-Government Agencies in strategic and programme planning and capacity development in disaster risk management and recovery. He has extensive work experience in China, Bangladesh, Indonesia, Sri Lanka, Nepal, Philippines, Myanmar, Cambodia and Viet Nam.

Mr. Bai Ken, Vice President, Lenovo Data Intelligence Business Group; General Manager, Lenovo Management Consulting and Innovation Service

Ken is an expert in supply chain management and the project leader of China's Emergency Resource Management Platform (enterprise). He has 24 years of experience in supply chain management consulting and systems implementation. As the project director of this platform, he worked closely with the government and tried to bring the company's strengths into full play. Ken led his team to design the business process for the whole system, based on which the team built and delivered the digital emergency management platform. Subsequently, he also provided comprehensive system operation and technical support for the platform application in several major public emergencies. The project provides reliable technical and logistics support for government emergency management. He has gained rich practical experience in supply chain management for global well-known enterprises in high-tech, consumer goods and other fields.

While working for Accenture, E&Y and other internationally renowned consulting firms, Ken provided the design and implementation of strategic supply chain digital upgrading solutions for many industry leading companies. Ken also engaged the professional research of supply chain management and undertaken relevant topics for many times, integrating the production, learning, research and application.

Mr. Wang Junbo, Director, Head Solutions China, Swiss Re-insurance Group

Mr. Wang Junbo is currently the Head of P&C Solutions China of Swiss Re-insurance Group, in charge of innovative business development and solution development for P&C insurers in China. He is also a member of global P&C solution management committee. Junbo has many years of working experience in the insurance industry, and has led and participated in a number of key innovation projects, such as Guangdong Government Natural Catastrophe Insurance Pilot, Heilongjiang Government Agriculture Catastrophe Insurance Pilot, Environmental Pollution Risk Management Platform, Smart Agriculture Insurance Risk Management Platform, Dynamic Pricing Flight Delay Insurance Platform, risk solutions for commercial vehicle fleet and new energy vehicle, etc. He was the Divisional Client Executive of Client Markets, and also Senior Client Manager of the Public Sector Solutions in Swiss Re. Before joining Swiss Re, Junbo has held several positions of underwriter and client manager in (re)insurance companies such as AIG, Gen Re, etc. Junbo undertook his tertiary education at Chu Kochen Honors College, Zhejiang University and received Bachelor of Science in Industrial and Organizational Psychology.

Ms. Yin Lefang, Secretary General, Beijing Emergency Technology Innovation Alliance

Lefang YIN now assumes Secretary General of Beijing Emergency Technology Innovation Alliance. She has been engaging in emergency technology and equipment over the years and has been supporting government endeavor for risk reduction and post-disaster relief and recovery. In July 2021, during the heavy flood in China's Henan Province, Lefang took the lead in organizing alliance enterprises to donate water pumps, site lights, large disinfection and sterilization equipment to disaster-affected areas and deployed nearly 1000 sets of assault boats, rubber boats, water pumps for each rescue team to rescue.

Ms. Zhang Chunchun, Corporate Social Responsibility (CSR) Manager, Zhongfang'anhu Emergency Education & Technology (Beijing) Co., LTD

Chunchun got MSc in Social Work from Columbia University, which has helped her to develop the skills for organizational management in governmental and non-governmental agencies, as well as for the creation of new ventures that address compelling social problems. As a manager for the CSR department, she is responsible for developing and monitoring Corporate Responsibility plans and programs for the company. She works on the projects that help individuals and communities work together to improve preparedness and respond to disasters and emergencies. Meanwhile, she focuses on building a "1+3+N" model that integrates the government, enterprises, communities, and multiple social forces to give full play to participate in the emergency response mechanism. The model is a collaborative network for community safety and protection, which contributes to the sustainable development of public welfare, corporate social responsibility, and enterprise resilience.

Prof. Yang Saini, Professor, School of National Safety and Emergency Management, Academy of Disaster Reduction and Emergency Management; Director, International Cooperative Research Center for Disaster Risk Reduction, Beijing Normal University

Dr. Yang Saini is a professor at Beijing Normal University. She got her bachelor and master degree from Southeast University and PhD degree from University of Maryland. Her research interests include risk assessment and emergency management. She is the principal investigator of more than twenty research projects, funded by the Ministry of Science and Technology, the Natural Science Foundation of China, the Ministry of Education, the Ministry of Emergency Management, the Ministry of Civil Affairs and the United Nations Development Programme. She has published more than 100 papers in academic journals, including Nature Climate Change and Nature Communications. Prof. Yang serves as the deputy leader of the assessment team and technical team of the First Survey of Natural Disaster Risk in China. She

is a member of the Asia-Pacific Science and Technology Advisory Group of UNDRR. She also serves as the editorial board of several international academic journals.

Prof. Chen Xiaofei, Academician, Chinese Academy of Sciences; Chair Professor and Head, Department of Earth and Space Sciences, Southern University of Science and Technology, Southern University of Science and Technology (SUSTech)

Professor Chen received his PhD in Geophysics from University of Southern California (USC) in 1991. He was a research associate at USC between 1992 and 1996. From 1996 to 2008, he was a professor at Peking University and from 2008 to 2016 at University of Science and Technology of China. He joined SUSTech in September 2016 and was appointed as an initiatory departmental head of Earth and Space Sciences. He has authored or co-authored more than 130 technical papers in geophysics and has mentored over 50 graduate students. He has led more than 20 scientific research projects such as the Natural Science Foundation of China Distinguished Young Scholars project, the outstanding innovation group project, the key projects, the international (regional) cooperation projects, the important subject projects and "973" project of the Ministry of science. Professor Chen's research interests include: theoretical and computational geophysics, seismology, as well as their applications in Earthquake hazard mitigation and earth resources exploration.

Ms. Anna Chieng, Vice President, Public Sector Solutions, Southeast Asia, Swiss Re-insurance Group

Anna Chieng is Vice President of Public Sector Solutions of Swiss Re-insurance Group responsible for Southeast Asia. Based in Singapore, she joined Swiss Re in 2015 and assumed a number of roles as Senior Underwriter Financial Lines and Head of Business Operations for Swiss Re Corporate Solutions prior to joining the Public Sector Solutions team late 2020. Anna has more than 25 years experience in general insurance and reinsurance. Anna has worked in

several economies including Malaysia and Singapore. Anna holds a Bachelor of Social Science in Information Management and Economics.

Prof. Yan Jianping, Adjunct Professor and Senior Technical Advisor, Centre of Excellence for Risk Analysis and Management, Shanghai Normal University

Dr. Yan is a senior internationally seasoned expert with more than 25 year professional experience in climate/disaster risk assessment and management. He is the founder and principal consultant of Rodel Risk Solutions Inc. based in Toronto, Canada; adjunct professor and senior technical advisor at the Centre of Excellence for Risk Analysis and Management (CERAM Shanghai), Shanghai Normal University, China, leading research on urban risk management and resilience. From 2008 to 2016, he worked as a programme specialist and climate/disaster risk assessment specialist for the Bureau for Policy and Program Support (BPPS, formerly BCPR) of UNDP, providing technical support and advisory services to 45+ developing economies in project/program design, implementation, and evaluation in the fields of Disaster Risk Reduction, Climate Change Adaptation, and Disaster Risk Assessment and its application in development planning and disaster management. Prior to joining UNDP, Dr. Yan was an independent consultant working for the World Bank (2005-2006), Whitby municipality of Canada (2003-2004), and Focus Humanitarian Assistance USA & Tajikistan (2003-2004), respectively. He was a research scientist at the University of Tuebingen, Germany (1994-2000) and a lecturer at East China Normal University (1987-1992).

Dr. Yan specializes in Climate/Disaster Risk Modeling, Mapping, and Profiling for public policy and decision making, integrated risk management solution for development, and disaster risk information management. His research fields include theory of risk and risk management with expert knowledge of risk management standards, e.g. ISO31000, ISO22301, COSO, etc.; decision making under uncertainty and risk; economic analysis of risk management measures; resilience profiling and planning; integrated risk governance in a changing climate; and big data for risk modeling. He is the designer and developer of many knowledge frameworks, methodologies and tools, such as Systematic Inventory and Evaluation of Risk Assessments (SIERA), Disaster Risk Modeling, Mapping and Profiling for Public Decision Making (DRMMP), Risk Mapping and Analysis for Critical Infrastructure Protection (RMA4CIP), RiskINFO (Risk Information E-Library), as well as training packages on “Disaster Risk Assessment” and “Integrated Risk Governance in a Changing Climate. He holds Ph.D. from University of Tuebingen, Germany, M.Sc. degree from East China Normal University, China, and Bachelor of Engineering from Tongji University, China.

Mr. Fei Wei, assistant researcher, National Disaster Reduction Center, Ministry of Emergency Management of China

Mr. Fei Wei, assistant researcher from Risk Assessment Department of National Disaster Reduction Center of China. He mainly engages in multi-hazard damage assessment and response, and participated in many research projects which are funded by China's Ministry of science and technology and Ministry of Civil Affairs. His experience includes disaster response, risk assessment and loss assessment.