



**Asia-Pacific  
Economic Cooperation**

**Advancing** Free Trade  
for Asia-Pacific **Prosperity**

# **APEC Disaster Risk Management Strategies to Support MSMEs Business Sustainability**

**APEC Emergency Preparedness Working Group**

January 2022





**Asia-Pacific  
Economic Cooperation**

# **APEC Disaster Risk Management Strategies to Support MSMEs Business Sustainability**

**SUMMARY REPORT**

**APEC Emergency Preparedness Working Group**

**January 2022**

APEC Project: EPWG 03 2019A

Produced by  
Arpah Abu Bakar  
Choun-Sian Lim  
Diara Md Jadi  
Habibah Tolos  
Joy Pereira  
Mohd Taipor Suhadah  
Nurfashareena Muhamad  
Shamzaeffa Samsudin  
Zairol Azhar Auzzir

Contact  
Associate Professor Dr Arpah Abu Bakar  
Project Overseer EPWG 03 2019A  
Email: [arpah@uum.edu.my](mailto:arpah@uum.edu.my)  
UUM Institute of Risk Management  
Universiti Utara Malaysia

For  
Asia-Pacific Economic Cooperation Secretariat  
35 Heng Mui Keng Terrace  
Singapore 119616  
Tel: (65) 68919 600  
Fax: (65) 68919 690  
Email: [info@apec.org](mailto:info@apec.org)  
Website: [www.apec.org](http://www.apec.org)

© 2022 APEC Secretariat

APEC# 222-EM-01.1

## TABLE OF CONTENTS

---

<b>1.0</b>	<b>Introduction</b>	<b>1</b>
1.1	Research Work	2
1.2	The Virtual Workshop	3
<b>2.0</b>	<b>MSMES' Knowledge Gap</b>	<b>5</b>
2.1	MSMES' Coping Capacities	7
2.2	Challenges In Closing The Knowledge Gap	8
<b>3.0</b>	<b>DRR Strategies For Msme's Resilience</b>	<b>10</b>
3.1	Capacity Building In Disaster Preparedness And Disaster Risk Financing	11
3.2	Forum On DRM Policies And Public-Private Partnership	14
3.3	Resolutions	16
3.4	Findings From Post Workshop Survey	17
<b>4.0</b>	<b>The Risk Management Guide</b>	<b>20</b>
<b>5.0</b>	<b>Recommendations</b>	<b>23</b>
<b>6.0</b>	<b>Conclusion</b>	<b>25</b>
<b>7.0</b>	<b>References</b>	<b>26</b>
	<b>Acknowledgement</b>	<b>27</b>
	<b>Annex 1: Summary Report For Workshop</b>	<b>28</b>
	<b>Annex 2: Summary Report For Research Work</b>	<b>38</b>
	<b>Annex 3: Post Workshop Survey Response</b>	<b>49</b>

## LIST OF FIGURES

---

<b>Figure</b>		<b>Page</b>
Figure 1	Natural hazards experienced by the respondents in the last 5 years	3
Figure 2	Statistics on participants and partners	5
Figure 3	Participation in programs and knowledge on risk management by types of enterprise	6
Figure 4	Knowledge and awareness on the insurance aspects by types of enterprise	6
Figure 5	The difference in opinions by gender on capacities in risk management implementation	7
Figure 6	The mitigation measures mostly taken to protect the businesses against disasters	8
Figure 7	Three major obstacles in taking mitigation measures	8
Figure 8	Previous capacity building workshops related to risk management and business resilience	10
Figure 9	Types of insurance solutions based on the frequency and severity of disasters	13
Figure 10	Key themes on significance of this workshop to respondents' economy	18
Figure 11	Key themes on the use the skills and knowledge gained by workshop participants to build capacities in their home economies.	19
Figure 12	Key themes on the importance of the workshop	19

---

## KEY ABBREVIATIONS

---

<b>ABAC</b>	APEC Business Advisory Council
<b>ADPC</b>	Asian Disaster Preparedness Centre
<b>ADRC</b>	Asian Disaster Reduction Centre
<b>APEC</b>	Asia-Pacific Economic Cooperation
<b>ARISE</b>	Private Sector Alliance for Disaster Resilient Societies, Mexico
<b>ARiMM</b>	Academy of Risk Management Malaysia
<b>BCP</b>	Business Continuity Planning
<b>CEO</b>	Chief Executive Officer
<b>COVID-19</b>	Coronavirus-19
<b>CSOs</b>	Civil Society Organizations
<b>DOSM</b>	Department of Statistics Malaysia
<b>DRM</b>	Disaster Risk Management
<b>DRR</b>	Disaster Risk Reduction
<b>EPWG</b>	Emergency Preparedness Working Group
<b>ESG</b>	Environmental, Social & Governance
<b>FGD</b>	Focus Group Discussion
<b>F2F</b>	Face-to-Face approach
<b>IR4.0</b>	The Fourth Industrial Revolution
<b>IoT</b>	Internet of Things
<b>IT</b>	Information technology
<b>ITC</b>	International Trade Centre
<b>MSMEs</b>	Micro, Small and Medium Sized Enterprises
<b>NADMA</b>	National Disaster Management Agency Malaysia
<b>NGOs</b>	Non-Governmental Organizations
<b>OECD</b>	Organisation for Economic Co-operation and Development
<b>ONEMI</b>	National Emergency Office, Chile
<b>PLCs</b>	Private-Listed Companies
<b>PO</b>	Project Overseer
<b>PPP</b>	Public-Private Partnership
<b>RMG</b>	Risk Management Guide
<b>SDG</b>	Sustainable Development Goals
<b>SEADPRI-UKM</b>	Southeast Asia Disaster Prevention Research Initiative - Universiti Kebangsaan Malaysia
<b>SFDRR</b>	Sendai Framework for Disaster Risk Reduction
<b>SMEs</b>	Small and Medium Sized Enterprises
<b>UNDRR</b>	United Nation Disaster Risk Reduction
<b>UUM-IRM</b>	Universiti Utara Malaysia – Institute of Risk Management



## **EXECUTIVE SUMMARY**

---

This report is prepared as a summary to record the activities delivered under the EPWG 03 2019A APEC Disaster Risk Management Strategies to Support Micro, Small, and Medium Enterprises (MSMEs) Business Sustainability. Under the APEC Emergency Preparedness Working Group (EPWG), this project involved two main activities: a survey to understand the MSMEs' knowledge gap in risk management and a workshop for capacity building and policy discussion. Both activities were conducted during 2020-2021.

MSMEs are the most vulnerable businesses as a result of financial, technological, and administrative limitations. In the survey conducted to understand knowledge related to risk management among MSMEs, results have shown that knowledge gap among MSMEs can be seen in the areas of (i) awareness for the DRR programs, resources, and reference materials related to risk management; (ii) knowledge in risk management strategies, particularly risk financing mechanisms; and (iii) disaster preparedness due to various obstacles that impede their coping capacity. In brief, the majority of the MSMEs lack even the basic knowledge of disaster risk management such as associated concepts, processes, and techniques, including risk financing strategies.

The survey results were utilized to reduce the knowledge gap through the capacity building and policy development workshop and were also used to develop the Risk Management Guide. A virtual workshop was organized to increase MSMEs' coping capacity through a capacity-building program and to discuss policy matters to support MSMEs recovery post-disaster. Seventy attendees from public agencies, academia, NGOs, and the private sector participated in the virtual workshop. Most of them are experts and practitioners involved in risk management, insurance, and emergency preparedness. The workshop discussed strategies for MSMEs' resilience, particularly the disaster risk financing mechanism such as insurance. Finally, the participants collectively developed 12 resolutions and refined the Risk Management Guide for MSMEs.



In summary, the objectives of the project were met through its structured program that was arranged to produce desired outcomes. The project's key objectives were to understand the knowledge gap in MSMEs' DRR strategies, capacity building on risk management, private-public involvement, and policy recommendations to support MSMEs' resilience. Moving forward, in strengthening the MSMEs' resilience, this project proposed 12 resolutions categorized into three areas: (i) to enhance understanding, (ii) to promote public-private partnership, and (iii) to strengthen policy that supports relevant enablers. Enhancing the understanding and closing the knowledge gap in risk management, particularly the risk financing strategies, require commitment from all parties, i.e., the MSMEs, the policymakers, and the private sector. The importance of DRR programs and training with tailor-made guidelines was unanimously agreed upon.

In addition, the experiences of different economies in disaster risk financing indicate that government support is critical to ensure the viability and sustainability of the program. Evidence also suggests that private sector participation promotes efficiency in the delivery of funds. The innovative PPP practices, including community-based disaster risk management programs, were proposed to facilitate broader economies. Ultimately, the appropriate disaster risk financing strategies for MSMEs depend on the government and the private sectors' capacity in terms of expertise and financial resources.

While the support from private sector is critical, strengthening regulatory frameworks including promoting data technology and providing greater social protection to MSMEs should be the economies' priority for disaster risk financing along with the provision of incentives for adopting pre-disaster strategies.

# 1.0 INTRODUCTION

This project is motivated by the fact that Micro, Small, and Medium-Sized Enterprises (MSMEs) are vulnerable to shocks from disasters affecting their growth and survival. Small and medium-sized enterprises (SMEs) in APEC economies account for over 97 percent of all enterprises and contribute significantly to economic growth (APEC, 2021). Data reveals that two out of three people work in an SME (OECD, 2019). These SMEs not only create income for their households and families, but they are also able to generate wealth for local people by providing jobs and supply chain opportunities. The existence of SMEs can also contribute to increasing tax revenue for the government and enables the government, in the long run, to invest the money, for example, in health care and education systems. Therefore, SMEs are viewed as a significant element of a healthy and growing economy.

Despite being a vital part of the economy, MSMEs are very vulnerable when facing uncertain events, including natural hazards, due to their size and financial limitations. The Asian Disaster Reduction Centre (ADRC) in 2012 found that SMEs in the Asia-Pacific economies are threatened by at least 14 disaster events a year, and six of them are natural hazards, including earthquakes, tsunamis, floods, hurricanes, drought, and volcano. Furthermore, 70% of natural hazards globally occur in the APEC region, which means these hazards are the main threat to MSMEs in this region.

The APEC Disaster Risk Reduction (DRR) Framework and APEC DRR Action Plan stated the need to increase capacity building and enhance the resiliency of MSMEs. Supporting this agenda, this project was undertaken to understand MSMEs' knowledge gap in risk management, their current coping strategies and explore policy measures to support their business resilience.

The overall objective of the project is to increase the MSMEs' resilience towards disaster risks. Its specific objectives are:

-  To identify MSMEs knowledge gap and coping strategies against natural disaster risks
-  To increase MSMEs' coping capacity through capacity building program and private-public partnership
-  To recommend policy to support MSMEs recovery post-disaster

The project, EPWG 03 2019A APEC Disaster Risk Management Strategies to Support Micro, Small, and Medium-Sized Enterprises (MSMEs) Business Sustainability was a project under the APEC Emergency Preparedness Working Group (EPWG) approved in the year 2019. This project supports two pillars of the APEC DRR Framework: Pillar 1: Prevention and Mitigation and Pillar 2: Preparedness.

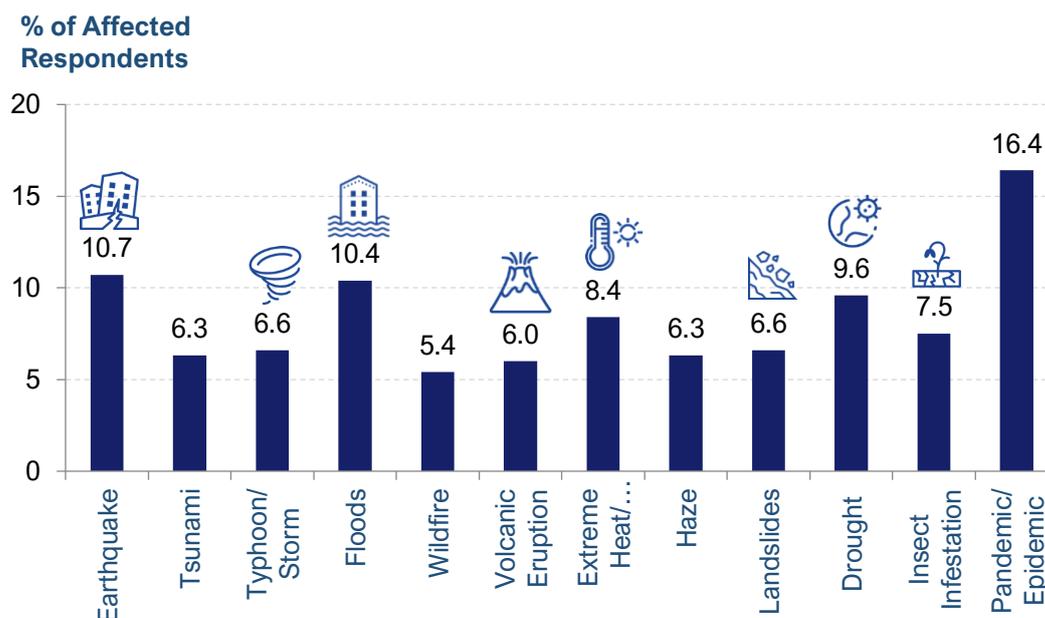
The project has four outputs which are research work, a workshop, a risk management guide and a summary report.

### 1.1. Research Work

In the study, six APEC economies were selected as samples for the data collection. Between December 2020 and March 2021, surveys were randomly conducted online and face-to-face (via local enumerators' service) among micro, small and medium-sized enterprises (MSMEs). Data collection was done via Survey Monkey, an online survey development cloud-based software, in all economies except Indonesia, in which the local enumerators' service among the university students was employed to engage with the Indonesian MSME respondents via the face-to-face method.

The surveys aimed to gather opinions and views on MSMEs' business resilience in response to possible threats and risks from natural hazards, including the recent COVID-19 pandemic. The surveys were conducted through invitations via a specific survey link to participating in the online questionnaire given to potential MSME business owners in respective economies within the APEC region.

Category	Economies	Number of respondents
High Income	Chile Chinese Taipei	46
Upper Middle Income	Thailand Malaysia	75
Lower Middle Income	Indonesia Papua New Guinea	69
<b>Total</b>		<b>190</b>



**Figure 1** Natural hazards experienced by the respondents in the last five years

The majority of the respondents are business owners, while the balance is the top management employees. The respondents have recorded the natural hazards experienced by the businesses in the last five years. As depicted in Figure 1, pandemic/epidemic is the highest frequency (i.e., a share of about 16 percent), followed by earthquakes (i.e., about 11 percent of the total), floods (i.e., about 10 percent of the total), and drought (i.e., nearly 10 percent of the total).

## 1.2. The Virtual Workshop

A 3-day workshop was held virtually online via the ZOOM meeting platform from 24 August 2021 to 26 August 2021 by UUM Institute of Risk Management of the Universiti Utara Malaysia (UUM-IRM), in collaboration with APEC Emergency Preparedness Working Group (EPWG) and National Disaster Management Agency Malaysia (NADMA Malaysia). It was attended virtually by about 70 participants from government/public, private/ industry, and academia sectors from 13 economies.

The welcoming remarks were jointly addressed by Prof Dato' Dr Bashawir Haji Abdul Ghani, the Vice-Chancellor of Universiti Utara Malaysia, and Mr Suzuki Koji, the Co-Chair of APEC EPWG. The workshop was officiated by Datuk Dr Aminuddin Hassim, the Director-General of NADMA Malaysia.

The 3-day workshop comprised paper presentations, forums, focus group discussions and concluded with twelve resolutions grouped in three main themes on strategies to improve Disaster Risk Management for MSMEs Business Sustainability. For details, refer to Annex 1 Workshop Summary Report.

Day 1 focused on building capability among APEC member economies through best practices and lessons learned in disaster risk management for MSME. Four experts were invited to present topics on disaster preparedness and disaster risk financing. Day 2 focused on discussing policy recommendations to support MSME resilience via Disaster Risk Management (DRM) related policies and public-private partnerships (PPP). Three experts debated issues related to government policies in DRM while four discussed innovative public-private partnerships in DRM.

Day 3 focused on gathering more opinions and ideas to gain an in-depth understanding of MSMEs' resilience via focus group discussion. In this small group, participants were encouraged to give inputs on issues and challenges faced by MSMEs in DRR strategies, particularly on risk financing and how to overcome those challenges through private-public partnership particularly and/or changes in policy. In addition, participants were requested to review the Risk Management Guide (RMG) and provide feedback on any areas that needed improvement.

An invitation was sent to APEC SME Working Group, APEC Business Advisory Council (ABAC), and APEC Emergency Preparedness Working Group (EPWG). The targeted participants of this project were business owners and/or MSME associations' council members and representatives from related public agencies.



There were 70 participants, including the speakers, moderators, and experts attending this workshop, exceeding the initially planned 60 participants. This workshop recorded 48.5% of female participation, including speakers, and 11 out of 13 economies sent at least one female representative. Figure 2 provides the statistics on participants and partners.

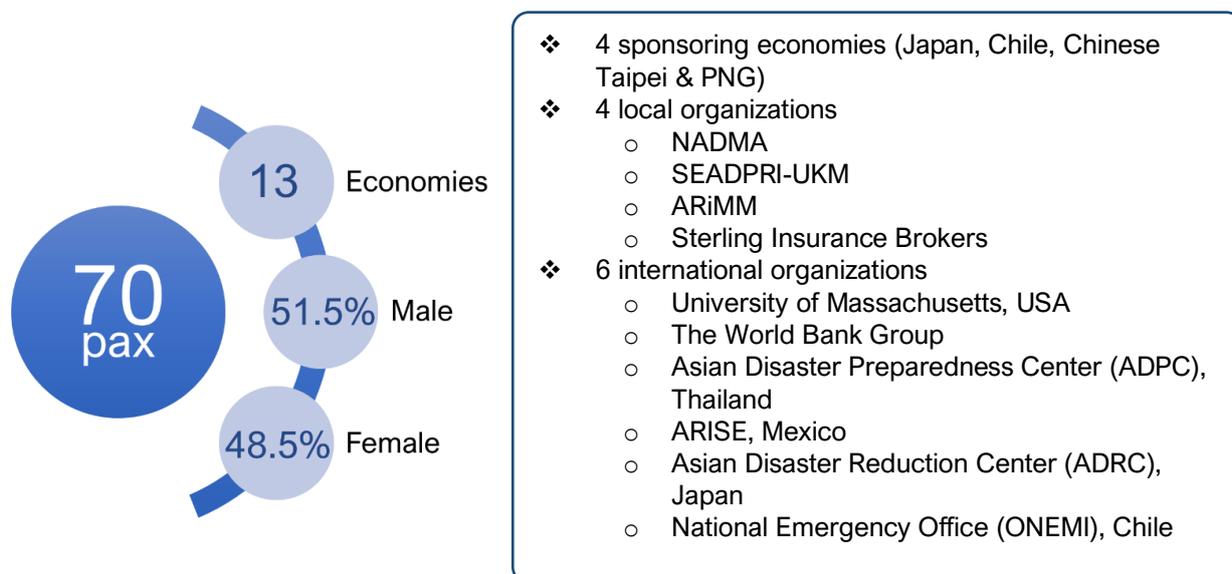
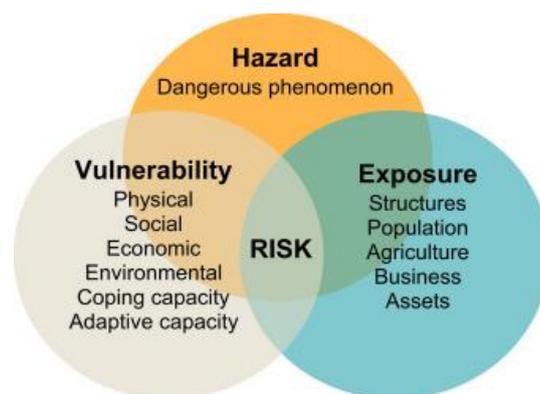


Figure 2 Statistics on participants and partners

## 2.0 MSMEs' KNOWLEDGE GAP

The overall objective of the project is to increase MSMEs' disaster risk resiliency. Despite many studies in Risk Reduction (DRR), evidence of implementation of risk financing strategies for MSMEs is lacking. This survey was carried out in six APEC economies to acquire MSMEs' experiences and state-of-the-art in dealing with natural hazard events. Specifically, the research objectives for the survey were to identify MSMEs' knowledge gap and identify existing coping strategies against disaster risks. The knowledge gap is to be identified in the hope that MSMEs in respective economies can progressively enhance their resilience to natural hazards in the future. In addition, this survey gathered inputs from respondents on the existing and future mitigation strategies in dealing with disaster risk from natural hazards and how to mitigate the impacts and the hindering factors.

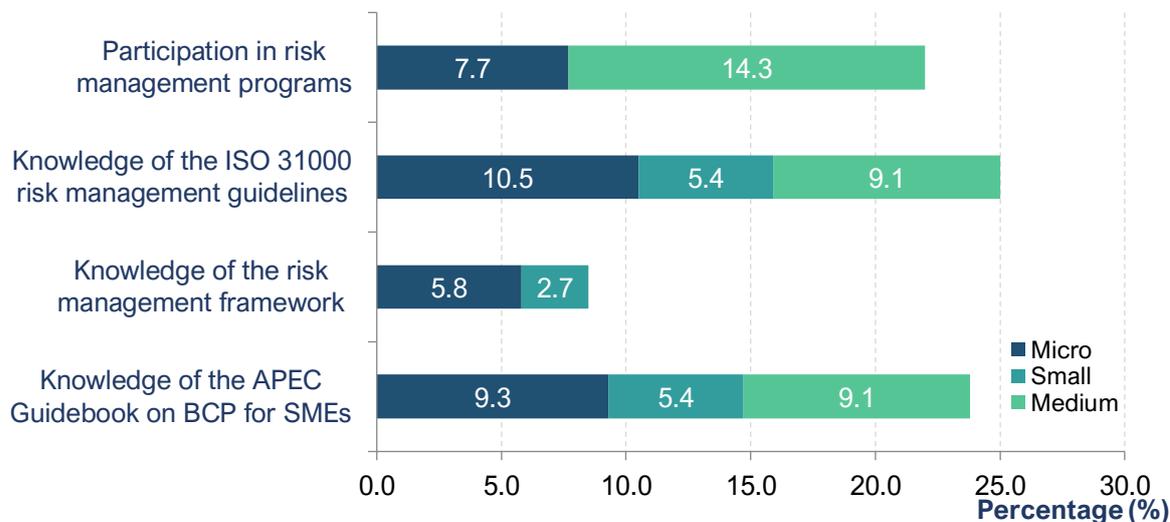
From the survey results, 42 percent of respondents were aware of DRR programs organized by government agencies. However, only 20 percent participated in the organized DRR programs. Over 50 percent of those, who were aware, believed that the organized DRR programs are essential in assisting the business to deal with disasters.



de Brito et. al, 2017

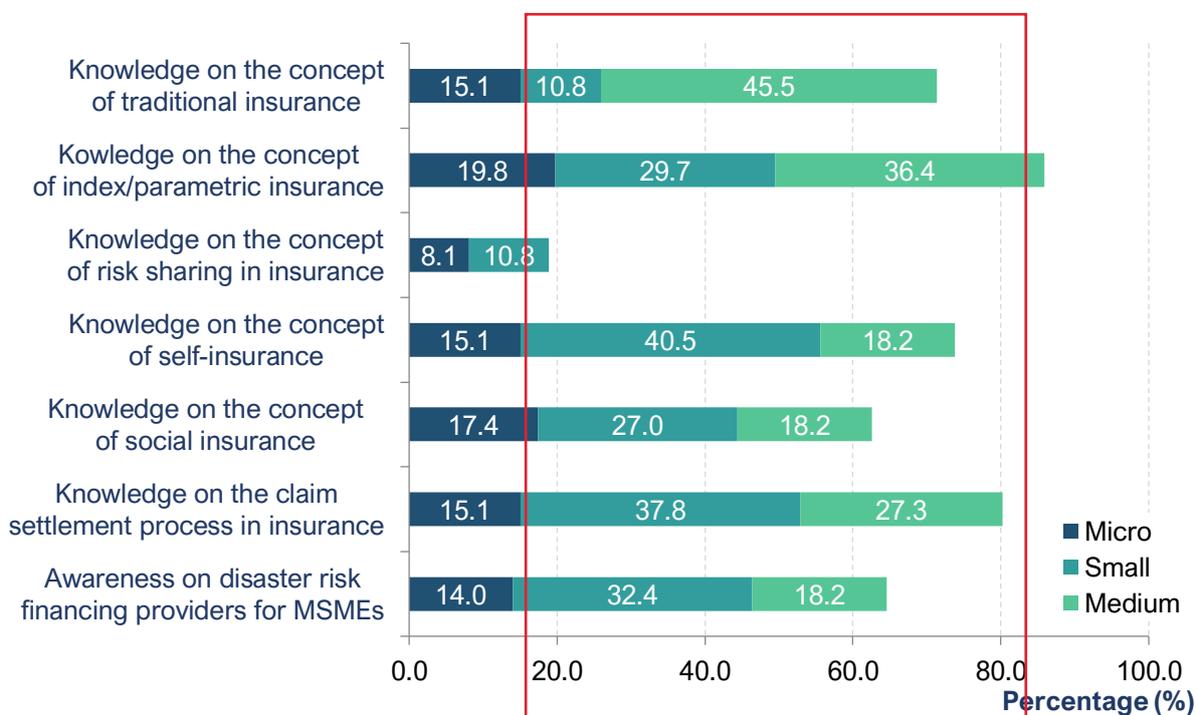
**Coping capacity is the ability of people, organizations and systems, using available skills and resources, to manage adverse conditions, risk or disasters. The capacity to cope requires continuing awareness, resources and good management, in normal times, during disasters or adverse conditions. Coping capacities contribute to the reduction of disaster risks... (UNDRR)**

Apart from that, most MSMEs do not have training or access to DRR resources on the knowledge of risks.



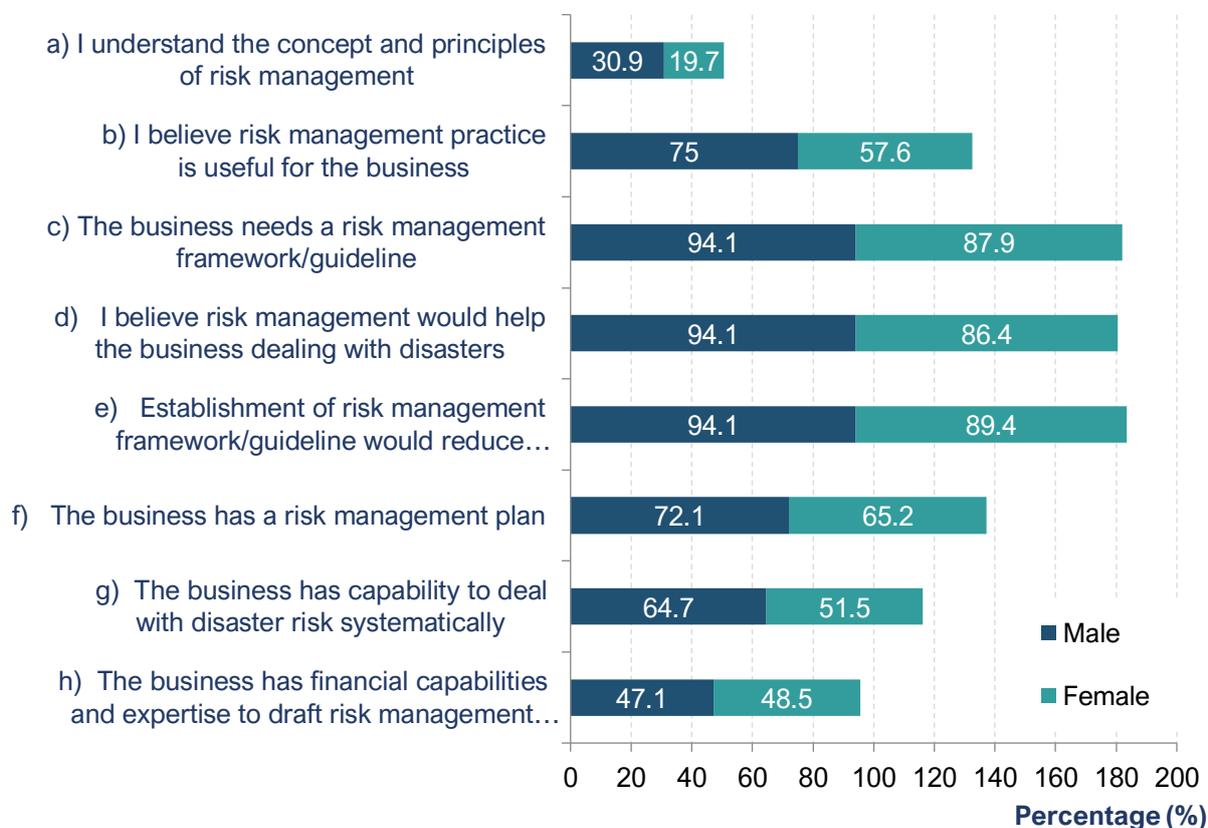
**Figure 3:** Participation in programs and knowledge on the risk management references by types of enterprise

As the DRR instruments matter, MSMEs recorded low levels of understanding on various aspects of insurance (except for the medium-sized enterprise on the concept of conventional insurance).



**Figure 4:** Knowledge and awareness on the insurance aspects by types of enterprise

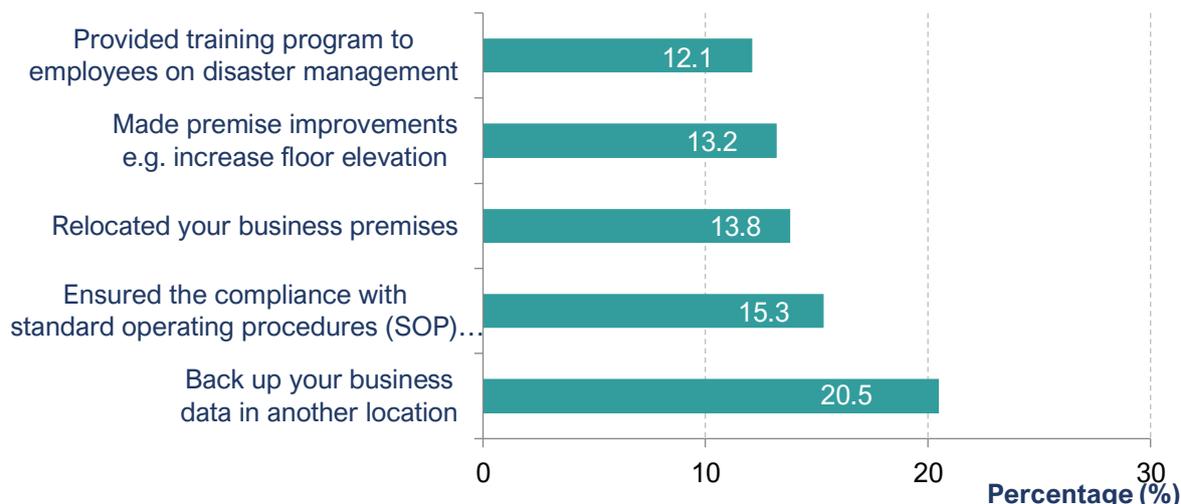
Furthermore, in terms of the DRR/DRM implementation, MSMEs have low levels of capabilities in the risk concepts & principles, resources, and finance capabilities to create any framework/guide.



**Figure 5:** The difference in opinions by gender on capacities in risk management implementation

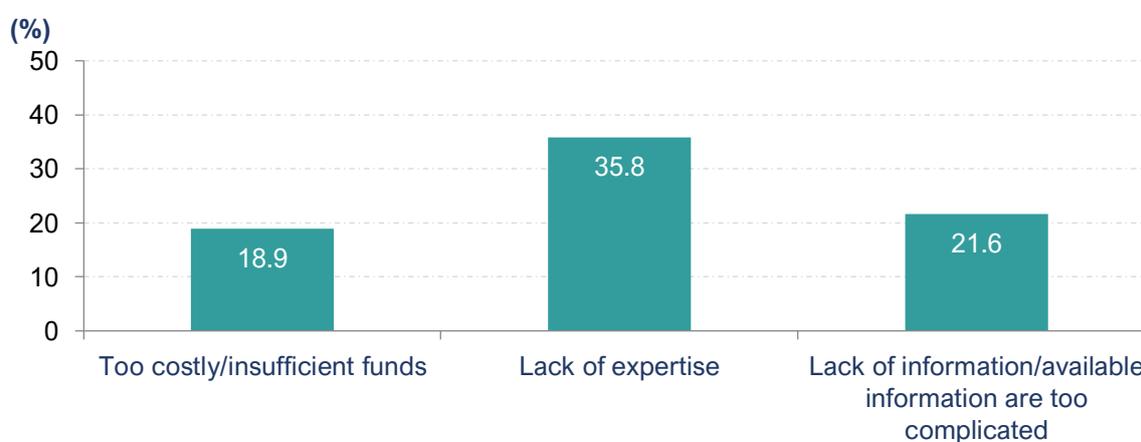
## 2.1. MSMEs' Coping Capacities

Based on the survey results, the top five mitigation measures already taken by the respondents to protect their businesses against the effects of natural disasters were backing up business data in another location (20.5 percent), followed by ensuring the compliance of SOP (15.3 percent), relocating business premises (13.8 percent), making premise improvements (13.2 percent), and providing training program for employees (12.1 percent).



**Figure 6:** The mitigation measures mostly taken to protect the businesses against disasters

Issues such as lack of expertise, lack of information/available information is too complicated, and lack of financial capability constitute major obstacles in implementing the preparedness and mitigation measures opted by the MSME respondents to respond to any natural event in their localities.



**Figure 7:** Three major obstacles in taking mitigation measures

## 2.2. Challenges in Closing the Knowledge Gap

In conclusion, several MSME issues and challenges were highlighted in the APEC Survey Report, namely:

- Low awareness concerning the DRR finance instruments and types of insurance
- Low awareness (i.e., less than 50 percent) of the DRR program by authorities

- Low attraction to participate (i.e., ~20 percent) in the DRR program by authorities.
- On coping capacities, there are issues such as access to information, lack of expertise, and lack of finance.
- Regarding the DRR resources and reference materials, many of them are not aware of the existing guidelines/frameworks/strategies.
- On the importance of DRR program/training, many are unsure of available opportunities and not up-to-date with the current frameworks used.
- MSMEs utilize common response measures such as government policy and the immediate need (e.g., data backup). The less common measures are BCP (i.e., supply chain, insurance, and area risk) and preparedness (i.e., disaster drills).

### 3.0 DRR STRATEGIES FOR MSME'S RESILIENCE

The MSMEs are commonly characterized as businesses with limited resources and knowledge of management techniques, especially in owner-managed firms. Studies have shown that they have limited abilities to deal with risks making them vulnerable to disasters.

According to the survey launched by United Nations Disaster Risk Reduction (UNDRR) in the year 2020, insufficiency of capacities and financial resources represents the top obstacle for SMEs worldwide to invest in measures to reduce disaster risks, followed by the difficulty of identifying effective measures and the lack of awareness on risks and potential impacts to businesses. Due to their inherent characteristics, SMEs are disproportionately inflicted by disasters and suffer significant economic implications. For example, the effects of COVID-19 on SMEs became severe, with nearly two-thirds of SMEs being heavily affected compared to about 40 percent for large counterparts (International Trade Centre, 2020). Although opportunities to implement DRR strategies exist, financial barriers and insufficient market access inevitably deter the ability of SMEs to utilize them. One instance is the lack of coverage on insurance products among the SMEs in developing economies despite their critical roles in improving business resilience and productivity and growing the demand and supply of capital (Thome *et al.*, 2019).

This project discusses DRR strategies for MSMEs' resilience in a workshop held virtually from 24 to 26 August 2021. This workshop extended the efforts done in the previous APEC project related to managing disaster risks to support the capacity-building initiatives. Figure 8 shows the capacity-building workshops related to risk management and business resilience held in past years.



**Figure 8:** Previous capacity-building workshops related to risk management and business resilience

### 3.1. Capacity Building in Disaster Preparedness and Disaster Risk Financing

As part of the efforts to enhance understanding of DRR strategies, the experts from the industry and the academia were invited to present on topics related to Disaster Preparedness and Disaster Risk Financing. In reducing disaster risks, enhancing disaster preparedness will enable an effective response to reduce disaster loss. It is one of the four pillars in the APEC Disaster Risk Reduction Framework, which focuses on strengthening the capacities to recover from disaster by understanding the risks and the coping strategies.

Mohamad Mohamad Zain, Chairman of the Academy of Risk Management Malaysia (ARiMM), Malaysia, delivered a paper entitled Risk Management and Business Sustainability. In brief, the speaker emphasized on the urgent need for risk management practices among MSMEs. Mohamad quoted a particular survey of the effect of COVID-19 on the economy conducted by the Department of Statistics Malaysia for the period from 10 April to 1 May in the year 2020; Malaysian companies faced three main challenges: salary payment, loss of customers, and rental payment. Approximately 42.5% of the companies require more than six months to recover (Department of Statistics Malaysia, 2020).

Among others, Mohamad shared the ISO 31000: 2018 framework that plays a vital role in the sustainability of SMEs and businesses over the long run. For example, implementing ISO 31000 framework in the Private Listed Companies (PLCs) can inculcate leadership and commitment as essential elements (e.g., Board of Trustee). However, SMEs can quickly implement this as they are the board and CEO of their companies compared to the PLCs with diverse interests by shareholders.

Also, the ISO 31000 framework provides a continuous improvement for MSMEs to manage their risks. Other than that, Mohamad elaborated on the importance of risk management for MSMEs by stating the main reason that the future is unpredictable and uncertain. Given that MSMEs are unregulated, structured risk management will enable MSMEs to secure loans and financial support, and allocate resources for risk treatment activities.

By referring to 2021's Global Risk Report (16<sup>th</sup> edition), he stated that the recent World Economic Forum highlights that risks are everywhere and people live in an uncertain world. In business, risks are managed for achieving a sustainable future, and there is a need to be prepared with the risk management process for any unfavorable consequence in the future (e.g., the investors walk away during the crucial periods). Generally, risk management is a combination of science (data) and art (artistic thinking). Thus, it is crucial to know the nature of one's risk, feel the risk, and treat it.

In mapping one's risk, the risk profiling may vary by industry and the company's appetite, accordingly.

Mohamad concluded by citing the SME Competitiveness 2020 report by the International Trade Center (ITC), highlighting that the key features that must exist for small businesses to survive are resilience, inclusion, digitalization, and sustainability.

More strategies on DRR were shared by Dr Nardia Haigh from the University of Massachusetts, the USA, who presented a paper entitled Risk Preparedness: Scenario Planning for MSMEs. Dr Haigh discussed scenario planning for MSMEs as a risk preparedness approach that includes scenario planning on asking "what if" questions and generating a better future and possible good ways. She emphasized risk preparedness and introduced a scenario planning toolkit as a method for MSMEs to anticipate potential threats, including climate risks to organization growth.

Insurance serves as a risk financing technique in disaster risk management. As highlighted in paragraph 30(b) of Sendai Framework for Disaster Risk Reduction 2015 – 2030, disaster risk financing promotes the implementation of mechanisms for disaster risk transfer and insurance, risk-sharing and retention, and financial protection for both public and private investments to reduce the financial impact of disasters on the governments and societies in both urban and rural areas. Yet, the broad concept and technical details of disaster risk financing have been inadequately understood by various MSME players both in the APEC economies and across the other economies globally. In this session, best practices in various risk financing strategies for MSMEs were discussed, particularly the cost and benefit of insurance in supporting the long-term business sustainability of MSMEs.

Hang Thu Vu, Senior Financial Sector Specialist, FCI Global Practice, World Bank Group Risk, presented a comprehensive overview of Financing Strategies for MSMEs. The outline of her presentation covered financial protection for SMEs, impacts of disaster shocks on SMEs, SMEs' finance, the costs of disasters, and strengthening financial resilience for SMEs. The speaker also emphasized the importance of MSMEs in terms of providing jobs to people globally. Simply put, MSMEs are the backbone of the economy. However, they are facing many challenges, including disaster risk. Making them financially resilient is imperative and needs to be addressed strategically.

Her presentation highlighted that the impact of disaster shocks on MSMEs is imminent on their financial and operational health. For instance, she cited the case of Da Nang city in Viet Nam, where the crisis of the COVID-19 pandemic affected about 10,000 business entities in that city in terms of their gross profit margin, revenue, and operating cost. Inadvertently, these shocks also affected the government by

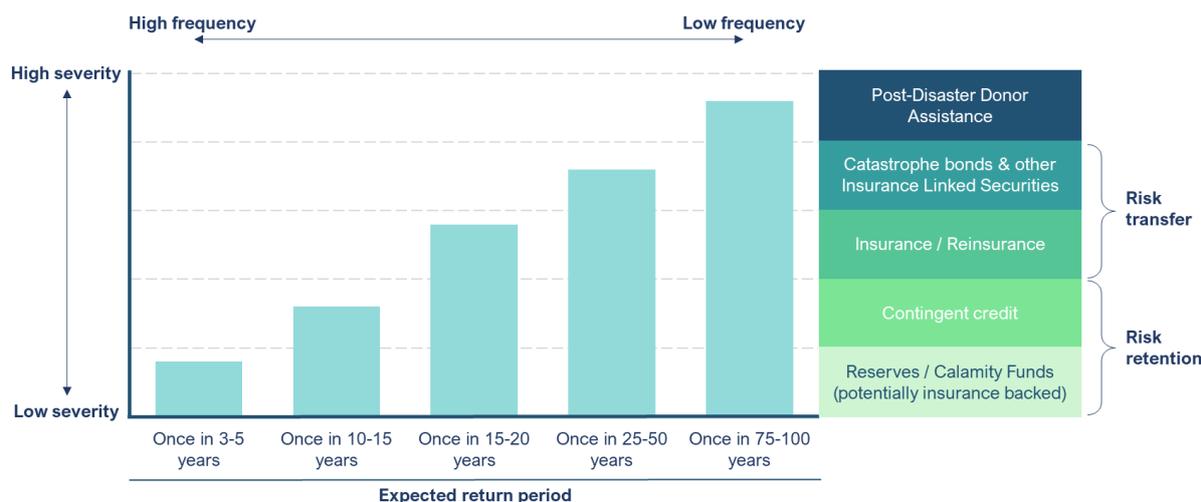
decreasing its corporate income tax collection due to the decline in business profits and revenues.

In addition, she also highlighted the disaster risk financing issues faced by the MSMEs owners, which include:

- i. Limited cash reserve to fund disaster response strategy
- ii. Limited access to disaster risk financing resources
- iii. Unavailability of disaster insurance cover
- iv. Heavily reliant on government support

In an attempt to strengthen MSMEs’ financial resilience, the World Bank recommended Risk Layering Strategy for disaster risk financing, but this strategy must be planned and implemented before the disaster occurs. Subsequently, structural and non-structural measures should also be considered in managing disasters. The development of digital technology, investment in better data infrastructure, and the importance of financial inclusion need to be integrated and fully utilized to strengthen MSMEs’ financial resilience to disaster shocks and challenges.

Abdul Halim Jantan, the CEO of Sterling Insurance Brokers Sdn. Bhd., Malaysia, shared his view on how insurance can be an effective tool for disaster recovery in his paper entitled Insurance and Disaster Risk Recovery. Abdul Halim supported the idea of layering protection as the strategy in disaster risk financing. Citing a source from the World Bank, he shared different types of insurance solutions based on the frequency and severity of disaster events as per Figure 9.



Source: Adapted from World Bank 'Financial Protection of the State Against Natural Disaster – A Primer', 2010

**Figure 9:** Types of insurance solutions based on the frequency and severity of disaster events

Abdul Halim also suggested a parametric model as an alternative risk management strategy for SMEs to finance disaster recovery. Compared to traditional insurance, parametric insurance has several distinguishing features, including the fact that payouts or compensations are based on pre-agreed parameters rather than actual losses, and that claims are processed quickly because parametric insurance does not require individual loss assessment. Abdul Halim, at the same time, acknowledged the demand and supply side barriers that may impede the development and use of such insurance. Before concluding his presentation, he shared some critical insights into the elements that contribute to the viability of disaster risk insurance.

### **3.2. Forum on DRM Policies and Public-Private Partnership**

**Forum 1** themed as Government Policies in DRM. Acknowledging that the impact of disaster is catastrophic, particularly to the MSMEs, government support is vital. This forum discussed the roles of the government in DRM.

The session began with a brief introduction on the forum that discussed the roles of the government, both at the local and central level, the best practices in government policies in supporting MSMEs sustainability, and debates the strategic efforts needed from the governments to improve the DRM of respective economies in ensuring sound policies that influence disaster preparedness, response and recovery activities are mainly targeted to meet the needs of vulnerable MSME businesses. There were three speakers involved in Forum 1 - Luis A. Doñas, Foreign Affairs Liaison, ONEMI, Chile; Dr Shiomi Yumi, Asian Disaster Reduction Centre (ADRC), Japan; and Dato' Ir Sabri Abdul Mulok, National Disaster Management Agency (NADMA), Malaysia.

In brief, Luis A. Doñas, in his presentation, highlighted how the system and management evolve through time in Chile. He shared Chile's case on "National policy and National Strategic Plan for DRR". The policy has served as an instrument that guides political actions and decisions that allow the development of capacities in all phases of the disaster risk cycle.

Dr Shiomi Yumi elaborated on the policies and practices of Japan to support MSMEs in DRM. In her presentation, she shared various supports given to affected SMEs/MSMEs in Japan. which was extended via public financial institutions and relevant organizations.

The forum ended with Dato' Sabri's presentation on the government policies, specifically on the DRR framework in Malaysia, the DRR initiatives aligned with the Sendai Framework for DRR (SFDRR), and the role of agencies involved in Disaster Management (DM) at the disaster scene.

The main takeaways for Forum 1 were:

- i. Cohesiveness is vital for the direction of goals and targets in the government's intervention (strategic, organic, targeted, measurable, and flexible);
- ii. Getting the DRR and DRM narratives right and across all levels and sectors by cascading the responsibilities, actions, and opportunities across the sectors;
- iii. Facilitating the access to support the government's intervention measures so that the benefits and supports can be drawn appropriately.

**Forum 2** themed as Innovative Public-Private Partnership in DRM. The destructive nature of disasters requires both the governments and the private sectors to play their roles in ensuring disaster recovery program supports the economies in reducing the impact of disasters. This session discussed the best practices in partnership with the private sector covering corporations and non-profit organizations to enhance community resilience, particularly the MSMEs.

Four speakers involved in this session provided their different views on the topic. Dr Ono Takahiro, Asian Disaster Reduction Center (ADRC), Japan, presented the policy framework for BCP promotion, lessons learned from mega-disaster for PPP and innovative BCP, and optimal balance for risk control. In his presentation, Dr Ono also emphasized the strategies for business continuity. In concluding his presentation, Dr Ono highlighted that the government (including local government) and enterprises need to be ensured on how the collaboration will work on, with a common share and complement common resources, in promoting strategic investment and avoid redundancy.

Followed by Hang Thu Vu, she presented the crucial roles of the government in supporting SMEs' risk financing strategies. She highlighted that the government vision and strategic approach will be needed to ensure long-term business sustainability. On the other hand, she added that the risk market infrastructure development, including the development of the data infrastructure, would facilitate future innovation and collaboration between government and private sectors.

Elisa Trujillo, ARISE, Mexico, shared the role of an organization in mobilizing the efforts on community socioeconomic highlighting poverty in the DRM context. She explained how poverty has impacted many peoples globally, and clearly, the COVID-19 pandemic has increased poverty around the globe. Besides the poverty issue, she also outlined other fundamental issues that arose during the pandemic that businesses, enterprises, and society should play a key role in, including the education gap due to internet access and gender violence.

Finally, Kilian Murphy of the Asian Disaster Preparedness Centre, Thailand, shared the vision and effort of ADPC for safer communities and sustainable development through DRR. The fundamental requirement in facilitating the collaboration between government and businesses is to understand the role of each key stakeholder in addressing risks and building resilience against unprecedented disasters, including large-scale emergencies. In his presentation, he outlined the roles of government, local NGOs/CSOs, and private sectors in strengthening preparedness for emergency response in South and Southeast Asia.

All speakers acknowledged the importance of fostering collaboration across various entities to create a sustainable business environment for MSMEs. The main takeaways for Forum 2 were:

- i. The active role of government is one of the key success factors in disaster preparedness;
- ii. DRR is the key element of sustainability, and all parties, including the government and private sectors, need to highlight business strategy and solutions in ensuring the sustainability of the businesses;
- iii. More innovative collaborations between government and private sectors should be established to support the economies in reducing the impact of disasters.

### 3.3. Resolutions

From the 3-day workshop, the following resolutions were proposed and presented. The resolutions were then circulated to the participants for further review and confirmation.

#### Enhance Understanding

Enhance knowledge required by MSMEs in the following areas: understanding of risk management including risk financing strategies, access to financing, scenario planning for climate change, and gender aspect in building MSMEs resilience

Develop training content, toolkits, or guides on risk management for MSMEs such as the APEC Guidebook on Business Continuity Planning and the proposed APEC Risk Management Guide

Promote inter-disciplinary expertise in research, training, and data sharing to bridge the knowledge gap

Strengthen international collaboration for capacity building in disaster risk financing and other coping strategies



Expand PPP

Support innovation in disaster risk financing mechanisms to enhance the enabling environment for DRR

---

Increase platforms for the participation of the private sector in research, training, and data sharing

---

Promote market-based mechanisms to encourage investment in data infrastructure and MSMEs involvement in capacity building

---

Adopting SDG & ESG as key drivers to align PPP in DRR for sustainability



Strengthen Policy

Strengthen regulatory frameworks for disaster risk financing

---

Promote development in data technology as an enabler for an effective disaster risk financing

---

Encourage appropriate incentives for MSMEs to adopt pre-disaster strategies

---

Enhance social protection programs for small business owners



### 3.4. Findings from Post Workshop Survey

After the workshop, all respondents were invited to answer a survey to evaluate the workshop outcomes that measure the event's achievement and identify whether such programs would be helpful in the future. The survey also functioned to identify the gaps to be filled in improving the project. The survey was completed by 21 respondents consisting of participants and speakers from several economies. The responses from the survey are presented in Annex 3.

The findings from the post-workshop survey indicated that the respondents agreed that the workshop's objectives were clearly defined and achieved. The agenda items and topics covered were relevant, contents were organized and easy to follow, experts and facilitators were well prepared and knowledgeable about the topics, and materials were useful.

The majority of respondents felt that the project was mostly relevant or very relevant to their economy, suggesting its importance for APEC economies. This is because the

MSMEs are vulnerable to disasters. Thus, risk management guides are essential to improve MSMEs' resilience. The respondents believed that the knowledge sharing and exchanging inputs to improve the Risk Management Guide would be the achievement of this workshop. They also claimed this workshop had increased their knowledge on Disaster Risk Management (DRM) and disaster risk issues across the globe. It provided insight on how to help MSMEs to deal with future challenges. Figure 10 exhibits key themes given by respondents in responding to the question on the relevance of this workshop to their economy.



**Figure 10:** Key themes on the significance of this workshop to the respondents' economies

The level of knowledge and skills in disaster management strategies had improved significantly after the workshop. After the workshop, the level of knowledge and skills of more than half of the respondents (52.4%) was in the high-level category while 33.3 percent were at medium level and the remaining 14.3 percent were at a very high level, unlike from before the workshop, where the level of knowledge and skills of 19 percent of the respondents' was at a low or very low level.

In terms of knowledge and skills in risk financing, this workshop has undeniably improved some participants' understanding of the skills. Before the event, half (50%) of the respondents felt that their knowledge and skills in risk financing were at a low or very low level. However, this rate dropped to only 18.8 percent after the event. The remaining respondents had at least medium knowledge or skills in risk financing after participating in the workshop. Worth noting that the majority of them fell under the high category (42.9%). Overall, the topics presented and discussed in this workshop had greatly enriched the participants' level of knowledge and skills. They claimed that they learned new knowledge from other APEC economies. Figure 6 displays key



In conclusion, the workshop was well organized and fulfilled its objectives: (a) increasing MSMEs coping capacity through the capacity-building program and private-public partnership, and (b) recommending policy to support MSMEs recovery after a disaster. The objectives were achieved through its structured program aligned to produce desired outcomes, where the key objectives on coping capacity, capacity building, private-public partnership, policy to support MSMEs were discussed and refined collectively with participants. Session 1 discussed capacity building in disaster preparedness, and Session 2 discussed capacity building and disaster risk financing as a tool to enhance their coping capacity on managing disaster risk. The discourse about government policies and public-private partnership were deliberated in Forum 1 and Forum 2, respectively. In focus group discussions, namely FGD 1 and FGD 2, the participants were consulted on policy recommendations to support MSMEs' resilience and co-develop a guide, namely Risk Management Guide and DRM strategies for MSMEs.

## 4.0 THE RISK MANAGEMENT GUIDE

The Risk Management Guide (RMG) is drafted to guide MSMEs to develop a response plan to become more resilient in facing current and new disaster risks. RMG will provide the necessary information and tools to plan and act in developing a risk management plan for their businesses. This guide complements the existing guides published by APEC.



In the development process, the RMG was shared with all workshop participants, and they were requested to review the RMG and provide feedback on any areas that need improvement during the Focus Group Discussion (FGD) in the virtual workshop held from 24 August 2021 to 26 August 2021. The main idea of this FGD was to assemble information and valuable insights from participants on the RMG based on their experience and economies. The discussion on the review of this guideline was compiled and summarized as follow:

Overall, the delegates agreed that the RMG can serve as a helpful tool to increase DRR awareness among the MSMEs owners. Some attractive features in the guide include:

- i. It is a simple and easy-to-understand document.**  
The guide is simple yet modest enough for a simple MSME business owner to grasp the idea and apply it to his business entity.
- ii. It is well structured.**  
The guide prepared is acknowledged to be a well-structured type of guide to be adopted. It seems feasible with its simple flows of ideas that are clean and easy to track throughout the contents.
- iii. Good examples are included.**  
Good examples are given or highlighted throughout the guide to ease the process of understanding and avoid confusion, especially for starters. The examples provided may also assist them in understanding the terms used in risk management.
- iv. Comprehensive in terms of coverage.**  
The guide can deliver the required coverage needed in the risk management process.

Improvements have been made on the RMG based on the comments and recommendations given by two groups of participants during FGD 1. Despite the suggestions given, most of them are applicable during the implementation phase instead of the improvement phase of the guide. Some key concerns raised by the delegates are:

- i. The guide should be tailor-made to address language differences among the economies for the end users' convenience. Due to the difference in languages, cultures, and other factors, different economies may have unique adaptability or interpretation of the guide to cater to their needs.
- ii. Ideas for the implementation phase include adopting technology and IoT, such as converting the guide into a mobile application or web application, to become more interactive and user-friendly. This idea is consistent with the current implementation of IR4.0 throughout the world today. However, the resources, software, and workshop made to realize this idea will have acquired extra cost borne whether by the MSME or the government.
- iii. Suggestions to improve the usability of the guideline through a pilot test or case study simulation in small group settings. Findings from the study will be incorporated into the guide to be translated into actual examples.

- iv. Implementation strategies include enhancing collaboration efforts (PPP) with government, agencies, NGOs, and other stakeholders. In addition, the implementation must include community engagement and outreach programs to increase their awareness of DRR and Risk Management. Bringing in relevant industries might give more inputs needed.
- v. Policy reform is required to assist MSMEs owners in training and funding, so they can improve their knowledge and awareness of DRR and risk management and find ways to fund their effort to run the risk management program or training.

Feasible suggestions given to improve the guide have been incorporated accordingly throughout the document, such as:

- i. Providing definitions for basic risk management terms, e.g., infographics and glossary.
- ii. Adjusting tables and figures for better understanding.
- iii. Adding signposts.
- iv. Giving additional examples to improve understanding and reduce confusion.

The RMG is published as a separate APEC publication document.



## 5.0 RECOMMENDATIONS

In ensuring comprehensive financial protection against disaster risks, the following are the recommended prioritized actions for APEC economies.

### To enhance understanding of risk and risk financing strategies

This action is undoubtedly necessary to be pursued because it is listed as one of the Sendai DRR Framework's four priorities, and disaster risk financing serves as one of the environmental enablers for the APEC DRR Framework, which contributes to adaptive and disaster-resilient Asia-Pacific economies that can support inclusive and sustainable development.

Enhancing the MSMEs' understanding of the risks exposed to them and the strategies to mitigate the risk can support MSMEs' resilience. It can be achieved via training and campaign. As small businesses are unique in their characteristics, structured training content for MSMEs needs to be developed. Currently, several knowledge-sharing activities related to the management of community-based disasters are conducted by local agencies and non-profit organizations. In addition, there is APEC Guidebook on Business Continuity Planning. The training content can be up scaled and expanded to include knowledge on risk financing strategies. Other related content, such as scenario planning for climate change, is beneficial to small businesses. Awareness of the availability of disaster risk financing products and government aids is also important and can be raised via public campaigns.

Intensifying the efforts to promote inter-disciplinary research and training may consequently bridge the knowledge gap among MSMEs. Based on the APEC DRR Framework, gender mainstreaming strategy implemented in programs and activities can positively impact both women and men without inadvertently jeopardizing the interests of one group while advancing those of the other. One instance is that the understanding of how DRR strategies taken by gender may assist in ensuring business resilience, particularly among female entrepreneurs. In addition, the development of a robust risk financing program requires both expertise and understanding of the local scenarios, meaning a more in-depth analysis needs to be conducted. At the international level, strengthening collaboration for capacity building in disaster risk financing, planning for financial strategies for coping with disasters, and other support models will generate overall response strengths needed by MSMEs. The virtual webinar implemented by this project proves that economies can learn from each other's experiences.

**To enhance multi-stakeholder collaboration by expanding the public-private partnership (PPP)**

Offering affordable commercial insurance or disaster insurance has been cited as a challenge primarily due to the lack of demand and data to support the underwriting and pricing of disaster risks. PPP can support innovation in disaster risk financing mechanisms to enhance the enabling environment for DRR.

As the business competition in the private sector is intense, PPP can increase platforms for private sector participation in research, training, and data sharing. The multi-stakeholder collaboration is most likely to reduce the investment in the product development stage and may reduce cost in the distribution channel leading to a more affordable insurance scheme. Finally, having a more integrated rather than piecemeal approach will result in a greater impact on sustainability. Therefore, the adoption of SDG & ESG as key drivers to align PPP in DRR should be a way forward.

**To strengthen the policy**

A robust risk financing program must be supported by a sound regulatory framework. Existing policies related to disaster risk management which may already exist at various government agencies are worth to be reviewed and streamlined. They include policies on the disbursement of disaster aids and enhancement of the social protection program, such as expanding the eligibility of informal workers. Compensation to property loss based on actual damages for uninsurable properties requires a government-supported scheme to be viable.

As the end goal is to ensure availability of funds to support recovery in a timely manner, the sustainability of the funds and participation in the program are some important issues to be addressed. A policy related on incentives for communities to adopt pre-disaster strategies either at the government or at the financial sector providers may attract participations, for example green financing.

As data is vital for an effective disaster risk financing program, a policy to promote the evolution of data technology as an enabler will accelerate the improvement development of disaster risk financing tools.

## 6.0 CONCLUSION

---

The project achieved all the expected outcomes. The survey findings presented during the workshop provided enhanced understanding and knowledge of the current awareness level on coping strategies against natural disaster risks among MSMEs of APEC economies. The paper presentations by four experts on Day 1 of the workshop helped increase awareness concerning disaster risk management strategies and risk financing against disaster risks. This claim is confirmed in the post-workshop survey result.

The participation by various agencies both from public and private organizations indicates the support for public-private partnerships. In addition, the workshop was well represented by the female attendees. Attendees came from 13 APEC economies, and the majority were members of APEC Business Advisory Council (ABAC), Small Medium Enterprise Working Group (SMEWG), and Emergency Preparedness Working Group (EPWG).

The development of the Risk Management Guide, which will serve as an easy-to-understand guide, will encourage MSMEs to be proactive rather than reactive to disasters. The guide will contribute to increased preparedness against disaster risks among MSMEs of APEC economies. Sharing capabilities and expertise through research, training, and data sharing may lead to knowledge enhancement necessary to bridge the knowledge gap among MSMEs in different economies.

Based on the EPWG Strategic Plan 2021 – 2024, this project contributes to the following priority areas:

- i. Enhancing regional capacity on disaster risk reduction and emergency preparedness
- ii. Promoting innovative partnerships, including public-private partnerships to develop joint disaster preparedness actions and build up disaster resilience

This project supports MSMEs' resilience by sharing best practices and lessons from public and private entities. Also, there are engagements and collaborations with APEC fora, regional and international organizations which jointly work, among others, on the economic benefits of risk reduction for MSMEs and gender integration in disaster management.

## 7.0 REFERENCES

---

- Asia-Pacific Economic Cooperation (2020). *Annex A – APEC Disaster Risk Reduction Framework*. Retrieved from [https://www.apec.org/Meeting-Papers/Annual-Ministerial-Meetings/2015/2015\\_amm/annexa](https://www.apec.org/Meeting-Papers/Annual-Ministerial-Meetings/2015/2015_amm/annexa)
- Asia-Pacific Economic Cooperation (2021). APEC Emergency Preparedness Working Group Strategic Plan 2021 – 2024. *EPWG Strategic Plan 2021 – 2024*. Retrieved from [https://www.apec-epwg.org/media/3592/epwg-strategic-plan-2021-2024\\_final.pdf](https://www.apec-epwg.org/media/3592/epwg-strategic-plan-2021-2024_final.pdf)
- Department of Statistics Malaysia (2020). *Main findings of special survey ‘Effects of COVID-19 on the economy and companies/business firms’- Round 1*. Retrieved from [https://www.dosm.gov.my/v1/index.php?r=column/cone&menu\\_id=RnJW MGMwK2J3Rm1CQjNDY3pzc3NMdz09](https://www.dosm.gov.my/v1/index.php?r=column/cone&menu_id=RnJW MGMwK2J3Rm1CQjNDY3pzc3NMdz09)
- International Organization for Standardization (2018). *ISO 31000: Risk management – Guidelines*. Switzerland: ISO Central Secretariat. Retrieved from <https://www.iso.org/obp/ui#iso:std:iso:31000:ed-2:v1:en>
- International Trade Centre (2020). *SME competitiveness outlook 2020 – COVID-19: The great lockdown and its impact on small business*. Retrieved from <https://www.intracen.org/SMEOutlook/>
- Thome, M., Hougaard, C., Gray, J., Msulwa, B., Rinehard-Smit, K. and de Waal, J. (2019). *Insurance for inclusive and sustainable growth: Imperatives for action from a four-country study*. Retrieved from <https://www.fsdafrica.org/wp-content/uploads/2019/10/Insurance-for-growth-01.10.19.pdf>
- United Nations Office for Disaster Risk Reduction (2020a). *Sendai Framework for Disaster Risk Reduction 2015 – 2030*. Retrieved from <https://www.undrr.org/publication/sendai-framework-disaster-risk-reduction-2015-2030>
- United Nations Office for Disaster Risk Reduction (2020b). *Reducing risk & building resilience of SMEs to disasters*. Switzerland: UNDRR
- World Bank (2010). *Financial protection of the State against natural disasters: A primer*. Retrieved from <https://openknowledge.worldbank.org/bitstream/handle/10986/3912/WPS5429.pdf?sequence=1&isAllowed=y>

## ACKNOWLEDGEMENT

This research was financed by APEC. The co-sponsoring economies for this project were Chile; Japan; Papua New Guinea; Chinese Taipei. The project was led by the UUM Institute of Risk management (UUM-IRM) and was supported by SEADPRI and National Disaster Management Agency (NADMA), Malaysia.

## ABOUT INSTITUTE OF RISK MANAGEMENT, UUM



The Risk Management Research Unit was founded under the School of Economics, Finance & Banking, Universiti Utara Malaysia (UUM) in 2014. The unit was established to foster the knowledge and understanding of risk management with the aim to become the referral center in the field of risk management for non-profit organizations in ASEAN. In the year 2019, the unit was upgraded to become the Institute of Risk Management, UUM. This institute has been involved in many activities, including consultation, research, publication, and organizing conferences and seminars in risk management and insurance. Its research areas are enterprise risk management, risk assessment, employee benefits and retirement planning, business continuity management, disaster risk financing, and insurance.

## ABOUT SEADPRI



Universiti Kebangsaan Malaysia's Southeast Asia Disaster Prevention Research Initiative (SEADPRI-UKM) has been in operation since June 2008. Based at the Institute for Environment and Development (LESTARI), the center addresses crucial challenges on disaster risk reduction in Malaysia and the region. Its research focuses on climatic, geological, and technological hazards, with emphasis on capacity building, mainly through post-graduate programs and specialized training. Transdisciplinary research conducted by the center is action-oriented, bridges the science-governance interface, and provides pathways for disaster prevention. Official website of SEADPRI-UKM: [www.ukm.my/seadpri](http://www.ukm.my/seadpri)

# ANNEX 1: SUMMARY REPORT FOR WORKSHOP

---

## WORKSHOP REPORT:

### EPWG 03 2019A: APEC Disaster Risk Management Strategies to Support MSMEs Business Sustainability

August 2021

Emergency Preparedness Working Group (EPWG)

#### Project Team:

Arpah Abu Bakar  
Shamzaeffa Shamsudin  
Zairol Azhar Auzzir  
Diara Md Jadi  
Mohd Taipor Suhadah  
Habibah Tolos  
Shahrul Nizam Ahmad  
Joy Pereira  
Choun-Sian Lim  
Nurfashareena Muhamad  
Mohd Khairul Zain Ismail  
Mohamad Syafiqi Hashim  
Amar Yasier Razli

#### For Correspondence:

Dr Zairol Azhar Auzzir  
[zairol@uum.edu.my](mailto:zairol@uum.edu.my)  
UUM Institute of Risk Management  
Universiti Utara Malaysia

## 1.0 ABOUT THE WORKSHOP

This workshop was held to support the deliverables for APEC Project EPWG 03 2019A Disaster Risk Management Strategies to Support Micro, Small, and Medium Enterprises (MSMEs) Business Sustainability.

The workshop was organized by the UUM Institute of Risk Management, Universiti Utara Malaysia, in collaboration with APEC Emergency Preparedness Working Group (EPWG) and National Disaster Management Agency (NADMA), Malaysia. The workshop was supported by South-East Asia Disaster Prevention Initiatives (SEADPRI) and Nexus Unique Sdn. Bhd.

The 3-day workshop was held virtually online via the ZOOM meeting platform from 24 to 26 August 2021. It was attended online by 70 participants from government/public, private and academic sectors from 13 economies.

### 1.1. Project and Workshop Objectives

The overall objective of the project aimed to increase the MSMEs' resilience towards disaster risks. Its specific objectives were to: (1) identify MSMEs knowledge gap and existing coping strategies against natural disaster risks; (2) increase MSMEs coping capacity through capacity-building programs and private-public partnerships; and (3) recommend policy to support MSMEs recovery after a disaster.

The workshop was organized to meet the specific objectives (2) and (3) of the project - to increase MSMEs coping capacity through capacity-building programs and private-public partnerships; and recommend policy to support MSMEs recovery after a disaster.

### 1.2. Workshop Program

The 3-day workshop comprised paper presentations, forums, focus group discussions and concluded with 12 resolutions on strategies to improve Disaster Risk Management for MSME Business Sustainability. Refer to Appendix I for the program agenda.

On **DAY 1**, the workshop's main program was inaugurated after the Opening Session. There were two sessions for Day 1.

The welcoming remarks of the workshop were jointly addressed by Prof Dato' Dr Bashawir Haji Abdul Ghani, the Vice Chancellor of Universiti Utara Malaysia, and Mr Suzuki Koji, the Co-Chair of APEC EPWG. The workshop was officiated by Datuk Dr Aminuddin Hassim, the Director-General of NADMA, Malaysia.





**SESSION 1** was on Capacity Building in Disaster Preparedness. In reducing disaster risks, enhancing disaster preparedness will enable an effective response to minimize disaster loss. It is one of the four pillars in the APEC Disaster Risk Reduction Framework, which focuses on strengthening the capacities to recover from disaster by understanding the risks and the coping strategies. This session was chaired by Assoc Prof Dr Arpah Abu Bakar from the UUM Institute of Risk Management.

**SESSION 2**, Capacity Building in Disaster Risk Financing, was chaired by Maizon Omar, Chair to Board of Trustees, Women's Institute of Management College. The session discussed insurance as a risk financing technique in disaster risk management. In this session, best practices in different risk financing strategies for MSMEs were discussed, particularly the cost and benefit of insurance in supporting the long-term business sustainability of MSMEs.

On **DAY 2**, the workshop was conducted in a forum setting to gather insights and experiences in improving the respective economies' Disaster Risk Management (DRM) through interaction with invited speakers and participants.

Before starting the forum, the survey results from the research work was presented. The paper entitled MSME DRM Strategies: Evidence from Selected APEC Economies, was delivered by Dr Choun-Sian Lim, Senior Research Officer, SEADPRI, Universiti Kebangsaan Malaysia. The survey was carried out to fulfill one part of the EPWG 03 2019A project, namely identifying knowledge gaps, existing coping strategies on disaster risks, and assessing the status of implementation of risk financing in APEC economies. The findings consisted of types and frequency of natural hazards, knowledge and awareness of insurance, understanding of risk management, plans and obstacles to protect businesses from disasters.

Two forums were conducted on Day 2. Each forum was facilitated by a moderator. In Forum 1 and Forum 2, there were three panelists and four panelists, respectively. **Forum 1** themed as Government Policies in DRM. Acknowledging that the impact of disaster is catastrophic, particularly to the MSMEs, government support is vital. This forum discussed the roles of the government in DRM.

**Forum 2** themed as Innovative Public-Private Partnership in DRM. The destructive nature of disasters requires both the governments and the private sectors to play their roles in ensuring disaster recovery programs support the economies in reducing the impact of disasters. This

session discussed the best practices in partnership with the private sector including the non-profit organizations to enhance community resilience, particularly the MSMEs.

On **DAY 3**, the workshop was conducted in an immersive focus group discussion (FGD) format. It focused on gathering more opinions and ideas to gain an in-depth understanding of MSMEs' resilience via focus group discussion. As participants sat in small groups, they were encouraged to give inputs on issues and challenges faced by MSMEs in the context of DRR strategies, particularly on risk financing and how to overcome those challenges through private-public partnership and/or policy changes. In addition, participants were requested to review the Risk Management Guide and provide feedback on any areas that needed improvement.

In the FGD, participants were divided into two groups using the ZOOM break-up room mode. Each group was requested to give input and suggestions on issues and challenges faced by MSMEs in DRR strategies on (FGD 1) Risk Management Guidelines and DRR Strategies for MSME, and (FGD 2) Policy Recommendations to Support MSMEs' Resilience. Discussion in each group was facilitated by an appointed moderator and rapporteurs to summarize the outcomes.

**Focus Group Discussion 1 (FGD 1)** on Risk Management Guidelines and DRR Strategies for MSME. The scene setting for FGD 1 was provided by the Assoc Prof Dr Arpah Abu Bakar from the UUM Institute of Risk Management on the draft Risk Management Guide for MSMEs. The Risk Management Guide (RMG) is a document drafted to guide MSMEs to develop a response plan to become more resilient in facing current and new disaster risks. The RMG provides necessary information and tools to plan and act in developing a risk management plan for their businesses.

The Risk Management Guide was shared with all participants beforehand. The participants were requested to review the Risk Management Guide and provide feedback on any areas that needed improvement. The primary purpose of this FGD was to assemble information and valuable insights from participants on the Risk Management Guide based on their experience and economies.

The participants were given the following questions:

- Q1. [Refer to the Guide]. Do you think Risk Management Guide can assist in the efforts to increase awareness in disaster risk management and risk financing among the MSMEs?
- Q2. [Refer to the Guide]. Suggest how Risk Management Guide can be made practical to be used by MSMEs' owners considering that they may lack knowledge and expertise in risk management.
- Q3. Could you suggest any PPP mechanism to support the use of the Risk Management Guide for MSMEs?
- Q4. [Refer to the Guide]. Do you think the examples given are relevant in your economies? Could you share some strategies useful for MSMEs?
- Q5. Do you have any suggestions to improve the guide?

Overall, the delegates agreed that the RMG can serve as a useful tool to increase DRR awareness among the MSMEs owners. Some attractive features in the guide include:

- i. **It is a simple and easy-to-understand document.**  
The guide is simple yet modest enough for a simple MSME business owner to grasp the idea and apply it to his business entity.
- ii. **It is well structured.**  
The guide prepared is acknowledged to be a well-structured type of guide to be adopted. It seems feasible with its simple flows of ideas that are clean and easy to track throughout the contents.
- iii. **Good examples are included.**  
Good examples are given or highlighted throughout the guide to ease the process of understanding and avoid confusion, especially for starters. The examples provided may also assist them in understanding the terms used in risk management.
- iv. **Comprehensive in terms of the coverage.**  
The guide can deliver the required coverage needed in the risk management process.

**Focus Group Discussion 2 (FGD 2)** on Policy Recommendations to Support MSMEs' Resilience. The scene setting for FGD 2 was delivered by Dato' Dr Mohd Salleh Haji Din, Emeritus Professor, Universiti Utara Malaysia. The presentation was on the key takeaways from Forum 1 and Forum 2 conducted on the second day of the workshop. The primary purpose of this FGD was to assemble information and valuable insights from participants on Disaster Risk Reduction (DRR) strategies for MSMEs and policy recommendations to support MSMEs' resilience based on their experience and economies.

The participants were given the following questions:

- Q1. How do you see the role of the government in strengthening DRM capacity building among MSMEs?
- Q2. How (Suggest a policy) to strengthen capacity building in DRM through PPP?
- Q3. What financial instruments are available to support the DRM of MSMEs in your economy?
- Q4. How (Suggest a policy) to strengthen disaster risk financing through PPP?
- Q5. What are the existing good policies that can be adapted to support the recovery and resilience of MSMEs against disasters?

### 1.3. Workshop Participants

As the workshop was held virtually, each economy was requested to nominate up to four participants. The invitation was sent to APEC SME Working Group, APEC Business Advisory Council, and APEC Emergency Preparedness Working Group. The targeted participants of this project were business owners and/or MSME associations' council members and representatives from related public agencies.

There were 70 participants, including the speakers, moderators, and experts attending this workshop, exceeding the initially planned 60 participants.

- ❖ 4 sponsoring economies (Japan, Chile, Chinese Taipei & PNG)
- ❖ 4 local organizations
  - NADMA Malaysia
  - SEADPRI-UKM
  - Academy of Risk Management Malaysia (ARiMM)
  - Sterling Insurance Brokers
- ❖ 6 international organizations
  - University of Massachusetts, USA
  - The World Bank Group
  - Asian Disaster Preparedness Center (ADPC), Thailand
  - ARISE, Mexico
  - Asian Disaster Reduction Center (ADRC), Japan
  - National Emergency Office (ONEMI), Chile

## 2.0 RESOLUTIONS

Throughout the 3-day workshop, 12 resolutions grouped in three main themes were presented as the essence for improving Disaster Risk Management Strategies to Support MSMEs Business Sustainability. They were mainly drawn from the discussion in Forum 1, Forum 2, and the deliberations among attendees in FGD 2. The resolutions are listed below:

### i. To enhance understanding

- Enhance knowledge required by MSMEs in the following areas: understanding of risk management including risk financing strategies, access to financing, scenario planning for climate change, and gender aspect in building MSMEs' resilience
- Develop training content, toolkits, or guides on risk management for MSMEs such as the APEC Guidebook on Business Continuity Planning and the proposed APEC Risk Management Guide
- Promote inter-disciplinary expertise in research, training, and data sharing to bridge the knowledge gap
- Strengthen international collaboration for capacity building in disaster risk financing and other coping strategies

### ii. To expand Public-Private Partnership (PPP)

- Support innovation in disaster risk financing mechanisms to enhance the enabling environment for DRR
- Increase platforms for the participation of the private sector in research, training, and data sharing
- Promote market-based mechanisms to encourage investment in data infrastructure and MSMEs involvement in capacity building
- Adopting SDG & ESG as key drivers to align PPP with DRR for sustainability

### iii. To strengthen policy

- Strengthen regulatory frameworks for disaster risk financing

- Promote development in data technology as an enabler for an effective disaster risk financing
- Encourage appropriate incentives for MSMEs to adopt pre-disaster strategies
- Enhance social protection programs for small business owners

### 3.0 OVERALL IMPACT AND LESSONS LEARNED

---

#### 3.1. Challenges in Virtual Workshop Management

Just like managing a physical event has its challenges, managing a virtual event also has its own challenges. The challenges, good practices, and proposed future improvement at pre-event and during-event stages are listed below.

##### 3.1.1 Pre-Event

- i. In the process of nomination and registration:
  - A few nominees did not complete filling up the form, even though the instructions were clear.
  - Last-minute nominations came in and were accepted by the organizer.
  - Areas of improvement: Reminders regarding nominations are to be emailed a few times.
  - Registration was smooth, and there were no major hiccups.
- ii. Pre-recording of speakers' presentations and dry-run were arranged before the event days - These were useful especially for contingency and participant preparation. One example, the Director-General of NADMA could not attend the workshop to deliver his speech due to an urgent involvement in a flood; the pre-recorded video was played instead. This session also gave the speakers the time to become familiar with ZOOM online platform and be prepared before presenting at the actual workshop.

##### 3.1.2 During-Event

Some challenges and highlights during the event:

- i. **Connectivity** - a small percentage of delegates was disconnected a few times but eventually managed to join. Overall, this did not disrupt the workshop.
- ii. **Audience engagement** - the workshop agenda was designed to maintain the audience momentum by having back-to-back presentations with renowned speakers invited from various economies. The focus group discussions on the third day provided an opportunity for the delegates to network. To avoid a dull moment, short breaks were given, and videos prepared by the organizer were played to entertain the delegates.
- iii. **Break-up room** - The split into break-out rooms was smooth as delegates were already selected on Day 2.
- iv. **Time length of event sessions** - The duration could be extended slightly longer for discussion, especially for break-up sessions where there were a few extensive discussions. Some participants even wished for the event to be extended one more day.

- v. **Event reportage** – A team with at least three personnel per session dedicated for live and post reporting was effective as participants' input came in many forms to be captured; direct questions and answers, discussion, intervention, messages in the chat box, URL links, and files.

### 3.2. Did the workshop meet its objectives?

The workshop was well organized and had fulfilled its objectives: (a) increasing MSMEs coping capacity through capacity-building programs and private-public partnership; and (b) recommending policy to support MSMEs recovery after a disaster.

The objectives were achieved through its structured program aligned to produce desired outcomes, where the key objectives on coping capacity, capacity building, private-public partnership, policy to support MSMEs were discussed and refined collectively with participants. Session 1 discussed capacity building in disaster preparedness, and Session 2 discussed capacity building and disaster risk financing as a tool to enhance their coping capacity on managing disaster risk. The discourse about government policies and public-private partnership were deliberated in Forum 1 and Forum 2, respectively. In focus group discussions, namely FGD 1 and FGD 2, the participants were consulted on policy recommendations to support MSMEs' resilience and co-develop a guide, namely Risk Management Guide and DRR strategies for MSMEs.

## APPENDIX I. WORKSHOP PROGRAM AGENDA



### APEC DISASTER RISK MANAGEMENT STRATEGIES TO SUPPORT MSMEs BUSINESS SUSTAINABILITY



*This is an APEC project event organized by UUM Institute of Risk Management in collaboration with APEC EPWG and NADMA, Malaysia.*

DAY 1 – 24 AUG 2021	
0800 - 0830	Registration/Log in
0830 - 0900	<p><b>Opening Session</b></p> <p><b>Welcoming Note</b> Prof Dato' D. Ahmad Bashawir bin Haji Abdul Ghani, Vice-Chancellor, UUM</p> <p><b>Welcoming Note</b> Suzuki Koji, Co-Chair, Emergency Preparedness Working Group (EPWG)</p> <p><b>Opening Speech</b> Datuk Dr Aminuddin Bin Hassim, Director-General, NADMA, Malaysia</p>
0900 - 1030	<p><b>Session 1: Capacity Building in Disaster Preparedness</b></p> <p><b>Session Chair:</b> Assoc Prof Dr Arpah Abu Bakar, UUM Institute of Risk Management <i>Preparedness is one of the four pillars in the APEC Disaster Risk Reduction Framework which focuses on strengthening the capacities to recover from disaster by understanding the risks and the coping strategies.</i></p> <p><b>Paper 1</b> <b>Risk Management and Business Sustainability</b> Mohamad Mohamad Zain, ACII, Chairman, The Academy of Risk Management Malaysia (ARiMM), MALAYSIA</p> <p><b>Paper 2</b> <b>Risk Preparedness: Scenario Planning for MSMEs</b> Dr Nardia Haigh Associate Professor, University of Massachusetts, USA</p>
1030 - 1045	Break
1045 - 1215	<p><b>Session 2: Capacity Building in Disaster Risk Financing</b></p> <p><b>Session Chair:</b> Maizon Omar, FCII Chairman Board of Governors, Women Institute of Management College</p> <p><i>Insurance as a risk financing technique has been identified as one of the mechanisms in disaster risk management. Yet, the broad concept and technical details of disaster risk financing have been inadequately understood by various MSME players both in the APEC economies and across the other economies globally In this session, best practices in various risk financing strategies for MSMEs will be discussed, particularly the cost and benefit of insurance in supporting the long-term business sustainability of MSMEs.</i></p> <p><b>Paper 3</b> <b>Risk Financing Strategies for MSMEs</b> Hang Thu Vu Senior Financial Sector Specialist, FCI Global Practice, WORLD BANK GROUP</p> <p><b>Paper 4</b> <b>Insurance and Disaster Risk Recovery</b> Halim Jantan, FMII CEO, Sterling Insurance Brokers Sdn. Bhd., MALAYSIA</p>
1215	End of Day 1

DAY 2 – 25 AUG 2021										
0800 - 0830	Registration/Log in									
830 - 0900	<b>Paper 5 MSME DRM Strategies: Evidence from Selected APEC Economies</b> Dr Choun-Sian Lim, SEADPRI-UKM, Malaysia									
0900 - 1030	<b>Forum 1 Government Policies in DRM</b> <i>As the impact of disaster is catastrophic, particularly to the MSMEs, government support is vital. This forum discussed the roles of the government, both at the local and central level, the best practices in government policies in supporting MSMEs sustainability, and debated the strategic efforts needed from the governments to improve the DRM of respective economies in ensuring sound policies that influence disaster preparedness, response and recovery activities are mainly targeted to meet the needs of vulnerable MSME businesses.</i>  Moderator Assoc Prof Dr Sarah Aziz LESTARI, UKM, MALAYSIA  Speaker 1 Luis A. Doñas, Foreign Affairs Liaison, ONEMI, CHILE Speaker 2 Dr Shiomi Yumi, Asian Disaster Reduction Center (ADRC), JAPAN Speaker 3 Dato' Ir Sabri Abdul Mulok, NADMA, MALAYSIA									
1030 - 1045	Break									
1045 - 1215	<b>Forum 2 Innovative Public-Private Partnership in DRM</b> <i>The destructive nature of disasters requires both the governments and the private sectors to play their roles in ensuring disaster recovery program supports the economies in reducing the impact of disasters. This session discussed the best practices in partnership with the private sector covering corporations and non-profit organizations to enhance community resilience, particularly the MSMEs. Fostering collaboration across various entities will create sustainable business environment for MSMEs.</i>  Moderator Dato' Dr Mohd Salleh Haji Din Emeritus Professor, Universiti Utara Malaysia, MALAYSIA  Speaker 1 Dr Ono Takahiro, Asian Disaster Reduction Center (ADRC), JAPAN Speaker 2 Hang Thu Vu, WORLD BANK GROUP Speaker 3 Elisa Trujillo, ARISE, MEXICO Kilian Murphy, Preparedness for Response & Recovery Department, THAILAND									
1215	End of Day 2									
DAY 3 - 26 AUG 2021										
0800 - 0830	Registration/Log in									
0830 - 0945	<b>FGD 1: Risk Management Guidelines and DRR Strategies for MSME</b>  <table border="0" style="width: 100%;"> <tr> <td></td> <td style="text-align: center;"><b>Room 1</b></td> <td style="text-align: center;"><b>Room 2</b></td> </tr> <tr> <td>Facilitator:</td> <td style="text-align: center;">Dr Mohd Taipor Suhadah UUM-IRM</td> <td style="text-align: center;">AP Dr Arpah Abu Bakar UUM-IRM</td> </tr> <tr> <td>Rapporteur:</td> <td style="text-align: center;">Dr Diara Md Jadi UUM-IRM</td> <td style="text-align: center;">Dr Zairol Azhar Auzzir UUM-IRM</td> </tr> </table>		<b>Room 1</b>	<b>Room 2</b>	Facilitator:	Dr Mohd Taipor Suhadah UUM-IRM	AP Dr Arpah Abu Bakar UUM-IRM	Rapporteur:	Dr Diara Md Jadi UUM-IRM	Dr Zairol Azhar Auzzir UUM-IRM
	<b>Room 1</b>	<b>Room 2</b>								
Facilitator:	Dr Mohd Taipor Suhadah UUM-IRM	AP Dr Arpah Abu Bakar UUM-IRM								
Rapporteur:	Dr Diara Md Jadi UUM-IRM	Dr Zairol Azhar Auzzir UUM-IRM								
0945 - 1000	Photo Session & Break									
1000 -1115	<b>FGD 2: Policy Recommendations to Support MSME's Resilience</b>  <table border="0" style="width: 100%;"> <tr> <td></td> <td style="text-align: center;"><b>Room 1</b></td> <td style="text-align: center;"><b>Room 2</b></td> </tr> <tr> <td>Facilitator:</td> <td style="text-align: center;">Prof Dr Joy Pereira SEADPRI-UKM, Malaysia</td> <td style="text-align: center;">Dr Khamarrul Azahari Razak DPPC-UTM, Malaysia</td> </tr> <tr> <td>Rapporteur:</td> <td style="text-align: center;">Dr Nurfashareena Muhamad SEADPRI-UKM, Malaysia</td> <td style="text-align: center;">Mohd Khairul Zain Ismail SEADPRI-UKM, Malaysia</td> </tr> </table>		<b>Room 1</b>	<b>Room 2</b>	Facilitator:	Prof Dr Joy Pereira SEADPRI-UKM, Malaysia	Dr Khamarrul Azahari Razak DPPC-UTM, Malaysia	Rapporteur:	Dr Nurfashareena Muhamad SEADPRI-UKM, Malaysia	Mohd Khairul Zain Ismail SEADPRI-UKM, Malaysia
	<b>Room 1</b>	<b>Room 2</b>								
Facilitator:	Prof Dr Joy Pereira SEADPRI-UKM, Malaysia	Dr Khamarrul Azahari Razak DPPC-UTM, Malaysia								
Rapporteur:	Dr Nurfashareena Muhamad SEADPRI-UKM, Malaysia	Mohd Khairul Zain Ismail SEADPRI-UKM, Malaysia								
1145 - 1200	<b>Resolutions &amp; Closing Remarks</b>									
	End of Program									

# **ANNEX 2:**

## **SUMMARY REPORT FOR RESEARCH WORK**

---

### **RESEARCH REPORT:**

#### **EPWG 03 2019A: APEC Disaster Risk Management Strategies to Support MSMEs Business Sustainability**

**April 2021**

**Emergency Preparedness Working Group (EPWG)**

#### **Researchers:**

Associate Professor Dr Arpah Abu Bakar  
Associate Professor Dr Shamzaeffa Shamsudin  
Dr Zairol Azhar Auzzir  
Dr Diara Md Jadi  
Dr Mohd Taipor Suhadah  
Dr Habibah Tolos  
Dr Choun-Sian Lim  
Dr Nurfashareena Muhamad  
Dr Mohamad Syafiqi Hashim

#### **For Correspondence:**

Dr Zairol Azhar Auzzir  
[zairol@uum.edu.my](mailto:zairol@uum.edu.my)  
UUM Institute of Risk Management  
Universiti Utara Malaysia

## 1.0 INTRODUCTION

---

Micro, Small, and Medium-Sized Enterprises (MSMEs) are crucial to APEC economies and their people. Data reveals that two out of three people work in small and medium-sized enterprises (SME). These enterprises create income for local households and families, and generate wealth for local people by providing jobs and supply chain opportunities. The existence of SMEs/MSMEs also contributes to increasing tax revenue for the local government.

Due to their size and capital limitations, MSMEs are very vulnerable when facing unexpected challenges, including in the events of natural hazard. The findings from Asian Disaster Reduction Centre in 2012 showed that SMEs in the Asia-Pacific economies are threatened by at least 14 disaster events a year, and six of them are natural hazards. The disaster exposure to MSMEs compared to other regions is quadrupled where statistically 70% of natural hazard events occur in the APEC region.

Studies found that most of them lack basic knowledge in disaster risk management such as associated concepts, processes, and techniques (Mavrodieva *et al.*, 2019). With appropriate mitigation strategies, enterprises may be able to build relevant capacities and acquire the necessary resources to deal with disruptive events (Skouloudis *et al.*, 2020).

## 2.0 ABOUT THE RESEARCH WORK

---

### 2.1. The Objectives of the Project

---

The overall objective of the project is to increase MSMEs' disaster risk resilience. Despite many studies in the area of Disaster Risk Reduction (DRR), evidence of implementation of risk financing strategies for MSMEs is lacking. Specifically, the research objectives are to identify MSMEs' knowledge gap and their existing coping strategies against disaster risks. By identifying the knowledge gaps, the capacity building programme can be tailor made to address the gaps. In addition, the findings on the existing and future mitigation strategies in dealing with disaster risk from natural hazards and the hindering factors, is hoped to support MSMEs to progressively enhance their resilience to natural hazards in the future.

### 2.2. Development of the Survey Instrument

---

The questionnaire contains a total of 34 questions in five sections. Section I of the questionnaire intends to gather necessary information on the nature of businesses owned and/or operated by respondents (e.g., types of sector and enterprise) and other demographic characteristics such as gender. Section II deals with various types of natural hazards impacting their business operations, their experience or losses from disasters; and Section III deals with the current readiness of businesses to face natural hazards. Meanwhile, Section IV is meant to gauge the respondents' understanding and awareness of the disaster risk reduction (DRR) program and risk management, as well as the status of DRR practices, related concepts and processes. Finally, Section V is about their views and willingness to participate in future DRR activities.

### 2.3. Pilot Survey

The pilot testing of the prototype questionnaire was administered to 35 MSME business owners in Malaysia between September and November 2020. The respondents in the hazard-prone area (i.e., in a historical flooded area) were expected to be affected by the natural hazards and the COVID-19 pandemic while running their business operations in the respective localities. The pilot results were used to improve the survey questions, and to refine the scoring methodologies.

### 2.4. Data Collection and Analysis

For this project, six APEC economies were selected as a sample. As an overview, for the six APEC member economies, namely Chile, Chinese Taipei, Indonesia, Malaysia, Papua New Guinea, and Thailand, the natural hazard events that contribute to their Average Annual Loss (AAL) are mainly flood and earthquake, followed by volcano, wind and storm surge. Table 1 shows the EM-DAT database 1990 – 2014 (EM-DAT 2015) on the frequency of disasters and the main hazards expected to contribute to AAL (PreventionWeb, 2021). The risks in these economies can be categorized into extensive risk and intensive risk, and it can be seen that many of the hazards with higher occurrence frequency, i.e., flood, would contribute the most to AAL, that would be associated with a higher expected loss per annum associated to the occurrence of future perils. Economies prone to a higher frequency of occurrence to intensive risk, namely earthquakes and volcano eruptions, are expected to incur the most to their AAL, which rank first or second.

**Table 1** Disaster & risk profiles based on disaster frequency and main hazards that contributed to the AAL for the economies

Economy	Frequency	Hazard contribution to AAL
<b>Chile</b>	Flood, wildfire, earthquake, extreme temperature, storm, volcano	Earthquake, flood
<b>Chinese Taipei</b>	Storm, earthquake, flood	Wind, earthquake, storm surge
<b>Indonesia</b>	Flood, earthquake, landslide, volcano, wildfire	Volcano, flood, earthquake
<b>Malaysia</b>	Flood, storm, landslide, wildfire, drought, earthquake, mass movement	Flood
<b>Papua New Guinea</b>	Flood, volcano, landslide, earthquake, storm, drought, mass movement, wildfire	Flood, earthquake, volcano
<b>Thailand</b>	Flood, storm, drought, earthquake, landslide	Flood

Source: <https://www.preventionweb.net/knowledgebase/disaster-statistics>

Between December 2020 and March 2021, surveys were randomly conducted online and face-to-face (via local enumerators' service) among micro, small and medium-sized enterprises (MSMEs). Data collection was done via Survey Monkey, an online survey development cloud-based software, in all economies except Indonesia, in which the local

enumerators' service among the university students was employed to engage with the Indonesian MSME respondents via the face-to-face method.

The conducted surveys aimed to gather opinions and views related to the MSMEs' business resilience in response to possible threats and risks from natural hazards, including the recent impact of the COVID-19 pandemic. The surveys were conducted through invitations via a specific survey link to participating in the online questionnaire given to potential MSME business owners in respective economies within the APEC region.

The World Bank provides the classification of the world's economies into four categories, i.e., high-income economies (HI), upper-middle-income economies (UMI), lower-middle-income economies (LMI), and low-income economies (LI). Table 2 provides the list of economies selected to represent the categories and the number of respondents from each category.

Category	Economies	Number of respondents
High Income	Chile	46
	Chinese Taipei	
Upper Middle Income	Thailand	75
	Malaysia	
Lower Middle Income	Indonesia	69
	Papua New Guinea	
<b>Total</b>		<b>190</b>

The data were analyzed via descriptive statistics using IBM's Statistical Package for Social Sciences (SPSS) Version 23. Cross tabulation, which is interchangeably called a crosstab or contingency table, analyzes types of tables that compare the frequency distribution of two categorical variables. Generally, the analysis comprises the dependent variables to be the rows and the independent variables to serve as the columns. Thus, when using % within the column variables, the percentage is calculated based on the total value of the column variables.

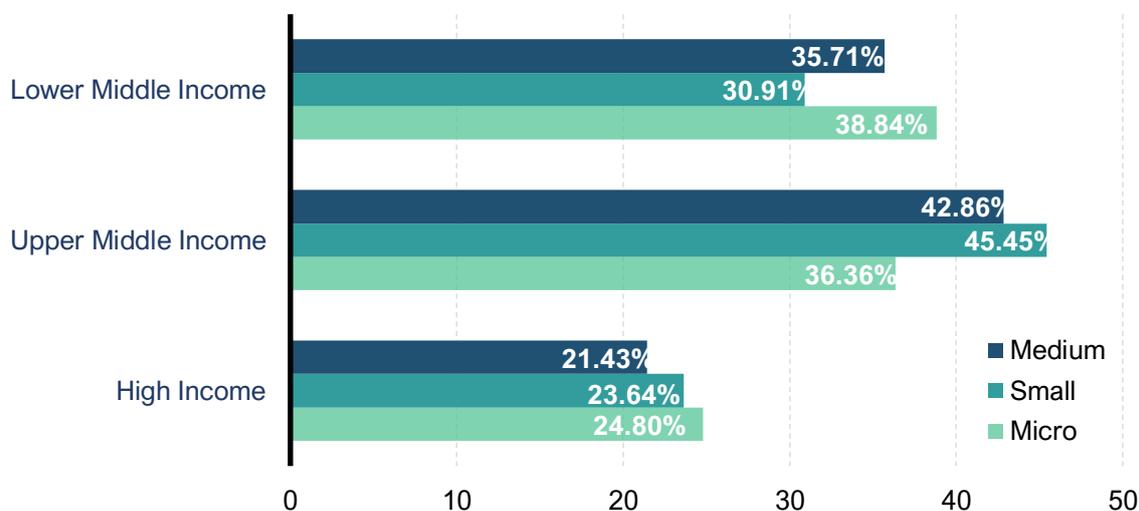
## 2.5. Profiles of Respondents

A total of 190 questionnaires were obtained. Figure 2 provides the profile of the respondents by gender, while Figure 3 provides the profiles by type of enterprises, respectively.



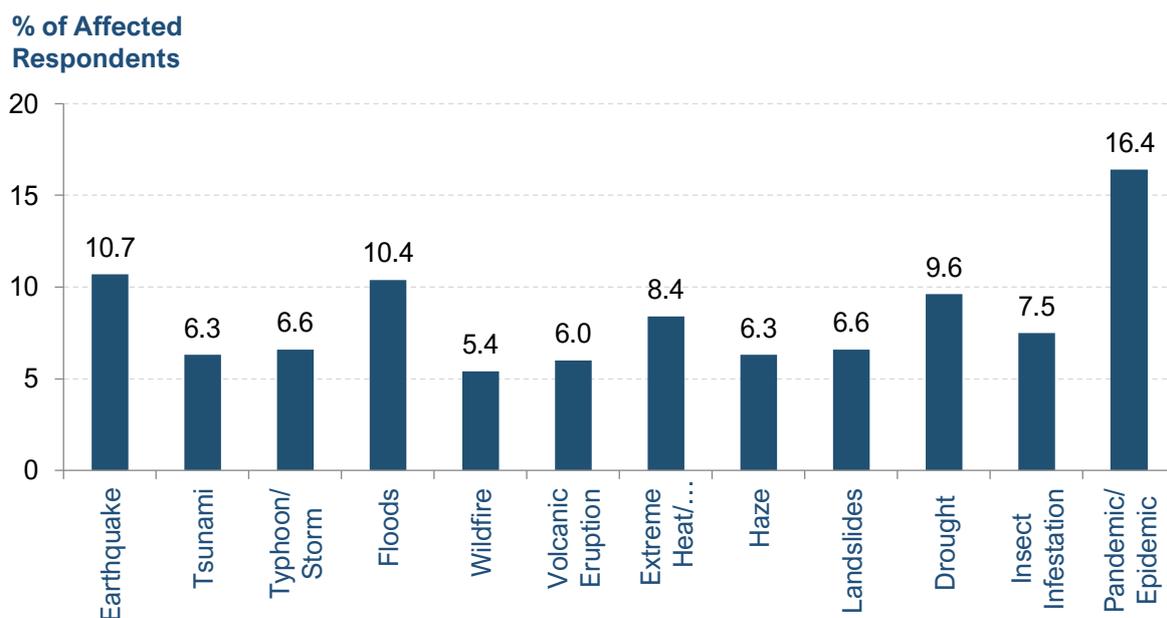
**Figure 2:** Profiles of respondents by gender

The respondents are almost equally represented by gender in all categories of economies. Regarding the types of enterprises, small enterprises are more represented in UMI economies, while micro-enterprises are more represented in LMI and HI economies.



**Figure 3:** Profiles of respondents by types of enterprises

The majority of the respondents are business owners, while the balance is the top management employees. The respondents have recorded the natural hazards experienced by the businesses in the last five years. As depicted in Figure 4, pandemic/epidemic is the highest frequency (i.e., a share of about 16 percent), followed by the earthquake (i.e., about 11 percent), floods (i.e., about 10 percent of the total), and drought (i.e., nearly 10 percent of the total).

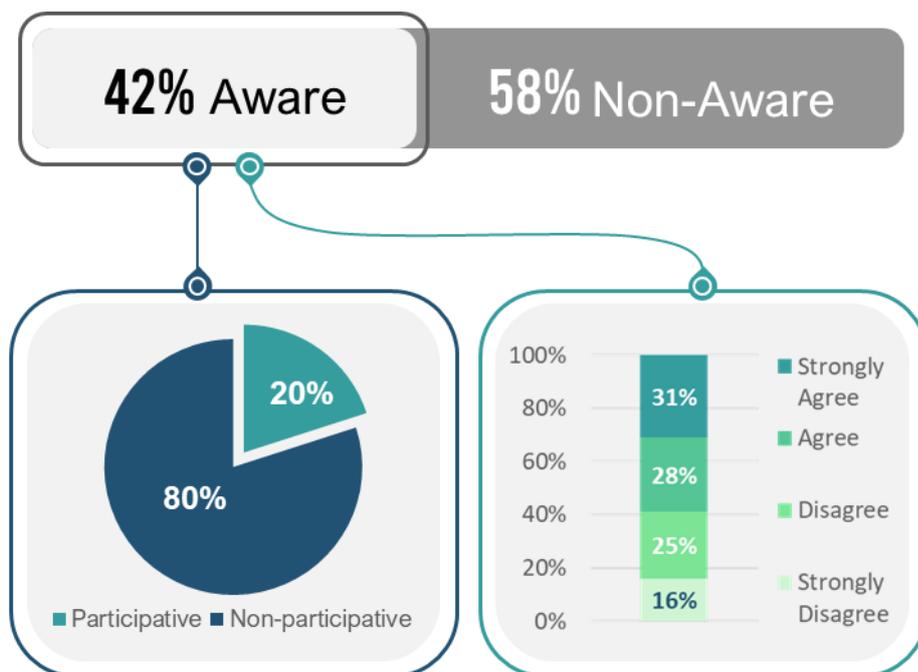


**Figure 4:** Types and frequency of natural hazards faced by MSME in the selected economies

### 3.0 KEY FINDINGS

#### 3.1 MSMEs' Knowledge Gap

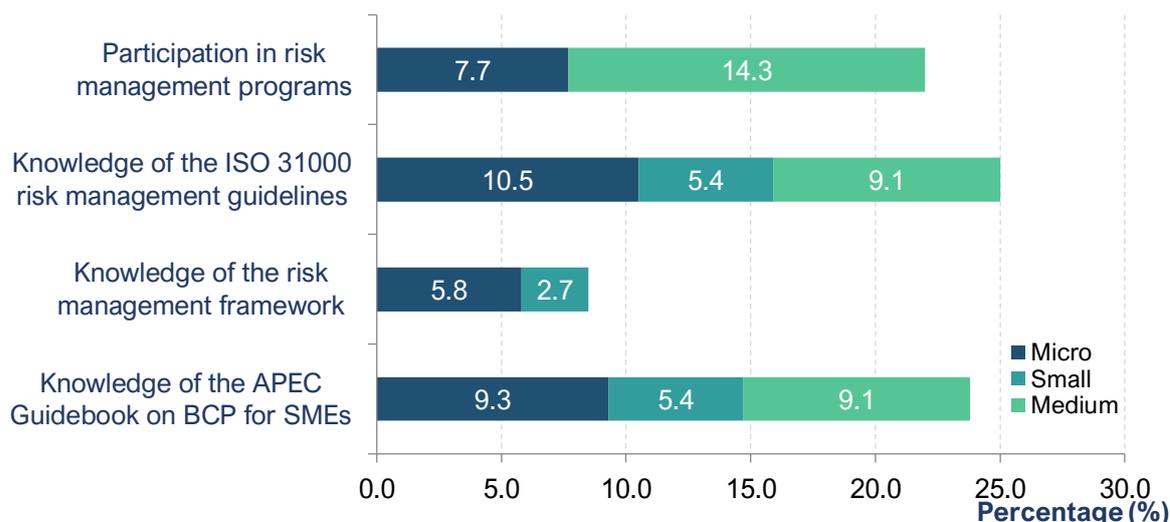
Figure 5 shows that 42 percent of respondents were aware of DRR programs organized by government agencies. However, only a fifth of them participated in the organized DRR programs. More than 50 percent of those, who were aware, believed that the organized DRR programs are essential in assisting the business to deal with disasters.



**Figure 5** The awareness on DRR programs and its importance

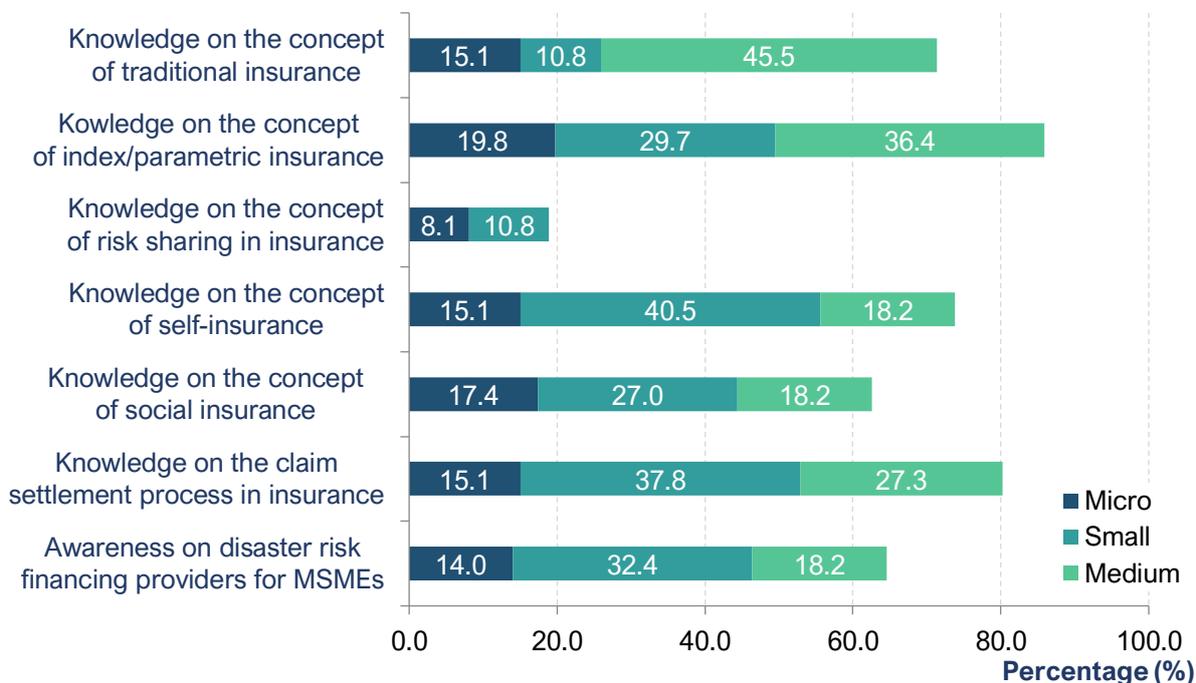
Figure 6 shows that smaller percentages of respondents from micro- and medium-sized enterprises, i.e., 7.7 percent and 14.3 percent of the respondents, respectively, have attended any specific training on risk management. None of the small-sized enterprise operators participated in any risk management program. Thus, this indicates that most of them across the enterprises did not formally undergo any risk management training.

Also, relatively low percentages of micro-, small- and medium-typed respondents have considerable levels of knowledge on the following risk management-related references; the ISO 31000 risk management guidelines, the risk management framework, and the APEC Guidebook on BCP for SMEs. Overall, considerably small percentages of respondents from small-sized enterprises are observed to know the ISO 31000 Risk Management Guideline and the APEC Guidebook in BCP for SMEs.



**Figure 6** Participation in programs and knowledge on the risk management references by types of enterprise

Figure 7 shows the knowledge and awareness on the insurance aspects among the respondents by types of enterprise. In the first two concepts of insurance; traditional and index/parametric, 45.5 percent and 36.4 percent, respectively, of the medium-sized enterprises are found to have knowledge on these concepts greater than their counterparts; small- and micro-sized enterprises.



**Figure 7** Knowledge and awareness on the insurance aspects by types of enterprise

With regards to the latter aspects of insurance in Figure 7; risk sharing, self-insurance, social insurance, claim settlement process, and availability of MSME disaster risk financing providers, reasonably higher percentages of small-sized enterprises have knowledge on the insurance

aspects compared to their counterparts; micro- and medium-sized enterprises. Also, it is worth highlighting that none of the medium-sized operators possess the knowledge specifically on the concept of risk-sharing in insurance.

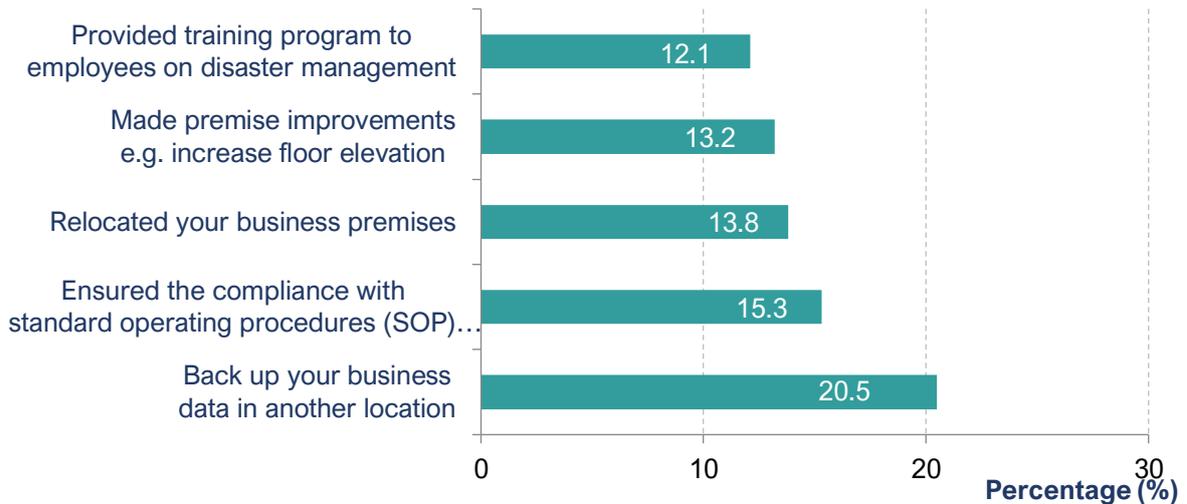
Additionally, the respondents were asked about their perceived capacities concerning risk management implementation. While agreeing on the use of risk management practices and the need to apply risk management framework/guidelines, less than 50 percent of the respondents indicated that they have the financial capabilities and expertise to do so. As shown in Figure 8, the perceived capacities are about equal between male and female respondents. Apart from that, it is worth noting that smaller percentages of agreement between the male and female respondents are observed in item (a) regarding the levels of understanding of the risk management concept and principles.



**Figure 8** The difference in opinions by gender on capacities in risk management implementation

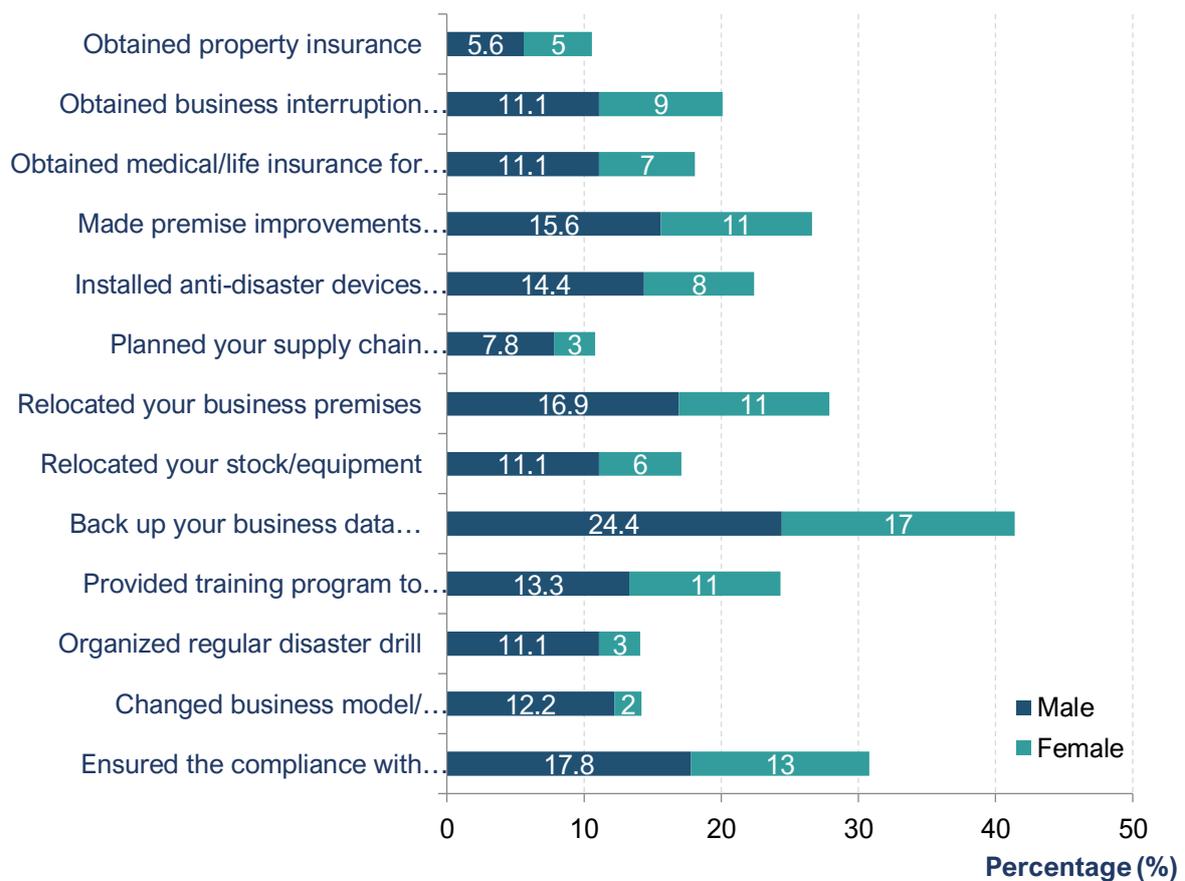
### 3.2. MSMEs' Coping Capacities

As MSMEs' coping capacities matter, Figure 9 illustrates that the top five mitigation measures already taken by the respondents to protect their businesses against the effects of natural disasters. From the mitigation measures, backing up business data in another location represents the highest-rated measure (20.5 percent), followed by ensuring the compliance of SOP (15.3 percent), relocating business premises (13.8 percent), making premise improvements (13.2 percent), and training program for employees (12.1 percent).



**Figure 9** The mitigation measures mostly taken to protect the businesses against disasters

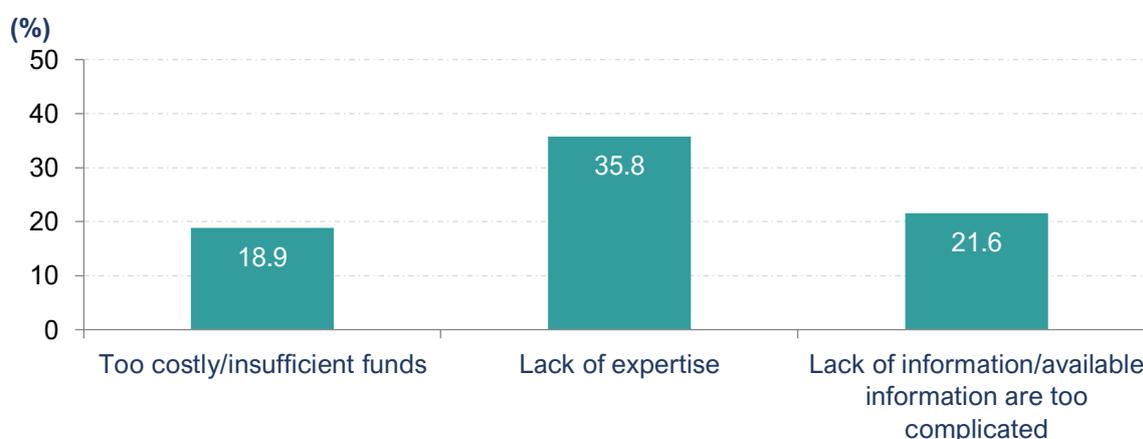
Figure 10 investigates gender differences in taking mitigation measures to protect their business. There were 13 mitigation measures listed in the questionnaire. The result shows that more male respondents have taken mitigation measures than female respondents in protecting their business from natural hazards.



**Figure 10** Mitigation measures taken by gender

The top five mitigation measures taken by male respondents are backing up business data in another location, complying with SOP issued by the government, relocating business premises, making premise improvements, and installing anti-disaster devices. On the other hand, less than 5 percent of the female respondents have protected their businesses using these mitigation measures: planning supply chain to minimize disruptions, organizing regular disaster drills, and changing business model/venturing to a new business model.

Based on Figure 11, almost 36 percent of respondents agreed that lack of expertise is the main difficulty for not taking any mitigation measures to protect their businesses from natural hazards. Lack of information available/information is too complicated, and lack of financial capability are other obstacles for the MSMEs, which are about 22 percent and 19 percent, respectively.



**Figure 11** Three major obstacles in taking mitigation measures

#### 4.0 RECOMMENDATIONS

The followings are several policy recommendations suggested for various stakeholders; policymakers, government agencies, SME business associations, and MSME operators in the three categories of economy, respectively, based on the survey results:

With reference to the findings in Figure 5, the respective government agencies need to do more promotion and publicity on their DRR programs to attract more participation from MSMEs. Low awareness results in many MSMEs failing to identify risks that might occur around them and their impacts. In addition, the contents of these DRR programs need to be constantly revised to meet the expectations of MSMEs.

Based on the findings in Figure 6, related agencies in all economies should play proactive roles in promoting the ISO 31000 Risk Management Guidelines and the Risk Management Framework to be used as common reference by MSMEs while running their business operations. Thus, potential collaborations with bigger-sized corporations such as GLC, MNC and public-listed companies can be done especially in knowledge transfer activities. In addition, APEC also can play its roles in developing a standard risk management guideline to be used by all APEC economies.

As Figure 6 is concerned, the APEC Guidebook on Business Continuity Plan (BCP), which is an initiative by APEC, is meant to assist and guide MSMEs during the disruptions and unexpected events. However, the findings clearly show that more efforts need to be done by APEC in order to reach its targeted expectation of the guideline. The use of the Guidebook needs to be made available for the MSME respondents in the three economies of the above. A greater call or effort is to be strategized for promoting the use of the Framework among the MSME operators in respective economies.

Generally, most MSMEs in APEC economies have little knowledge of the concept of insurance and insurance products related to disasters. Lack of information and exposure to insurance concepts, products, and processes might be a reason for the result shown in Figure 7 – Figure 8. Furthermore, MSMEs have no or maybe limited financial capability to invest in disaster-related insurance products. As such, innovative and affordable insurance product is needed. In this regard, partnerships between the government and private companies are also valuable, whereby the government may give tax rebates or subsidies to private companies that offer low-cost insurance for MSMEs. At the same time, the private companies can increase their involvement in any government initiative as part of the corporate social responsibilities (CSR) programs.

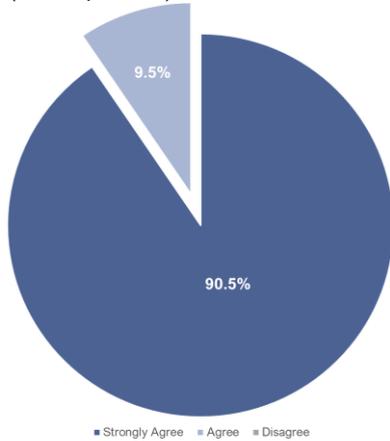
Disaster risk financing support is essential for MSMEs' resilience. Some existing programs offered by the government and other organizations, locally and internationally, such as grants, soft loans, and emergency funds for affected MSME are helpful. However, according to the results in Figure 8 and Figure 9, many MSMEs are not aware of the existence of disaster financing providers. Therefore, awareness program should include information related to financing resources particularly insurance.

While insurance is deemed essential, strategies related to insurance purchase are not in the top 5 coping strategies among the MSMEs. The lack of knowledge on insurance technicalities as observed in this research may explain the behavior. Buying property insurance as a coping strategy is less preferred by both genders. Based on Figure 10, changing business models/venturing into new business models and organizing disaster drills were among the least taken actions by the female business owners/managers. More training to increase capacities among female business owners may help to support their mitigation efforts.

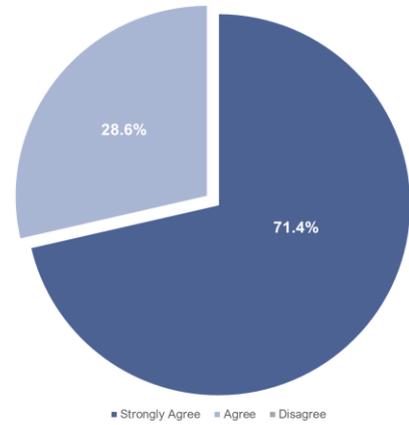
Lack of expertise has been cited as the common reason for not taking mitigation measures. This finding further supports the need for training in risk management to assist MSMEs in DRR.

## ANNEX 3: POST WORKSHOP SURVEY RESPONSE

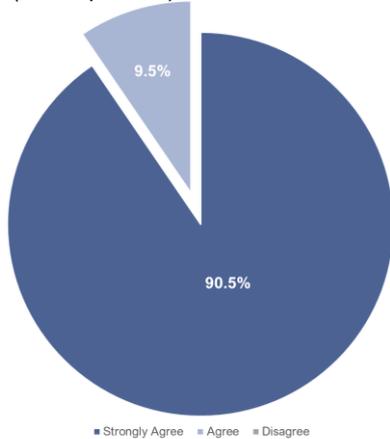
1. The objectives of the workshop were clearly defined  
(21 responses)



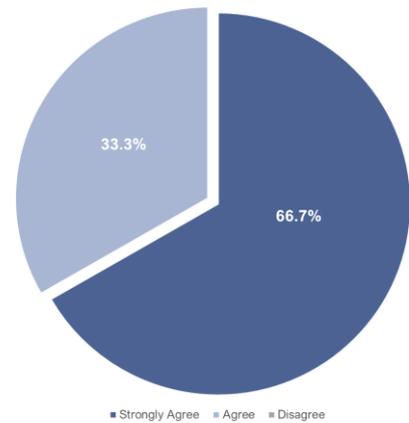
2. The workshop achieved its intended objectives  
(21 responses)



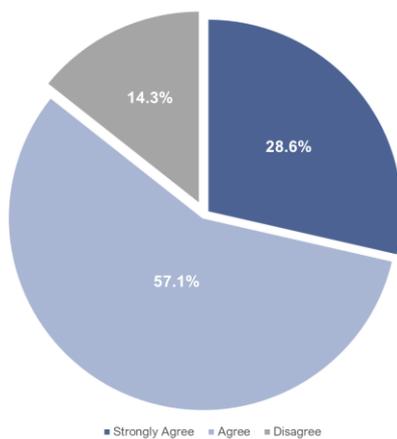
3. The agenda items and topics covered were relevant  
(21 responses)



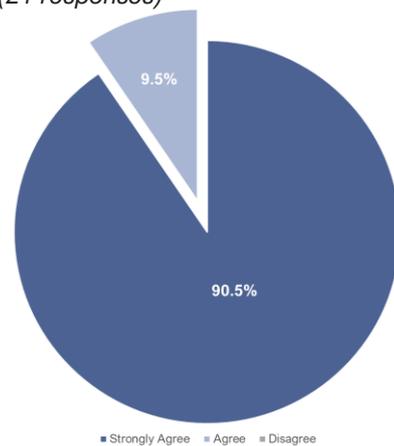
4. The content was well organized and easy to follow  
(21 responses)



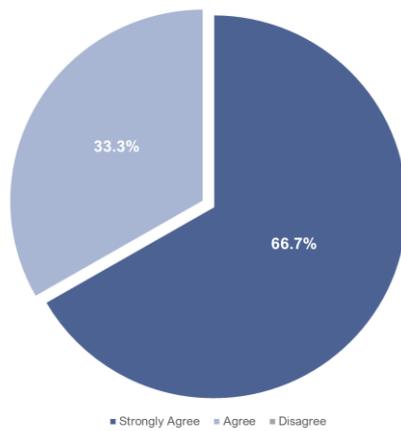
5. Gender issues were sufficiently addressed during implementation  
(21 responses)



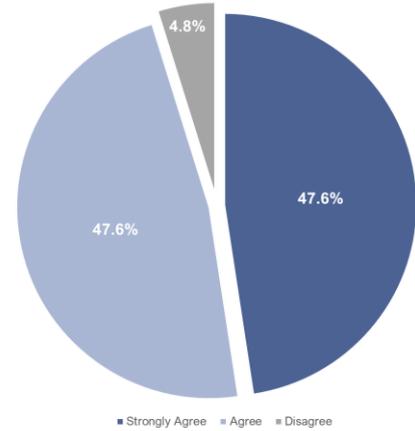
6. The trainers/experts/facilitators were well prepared and knowledgeable about the topic  
(21 responses)



7. The materials distributed were useful  
(21 responses)



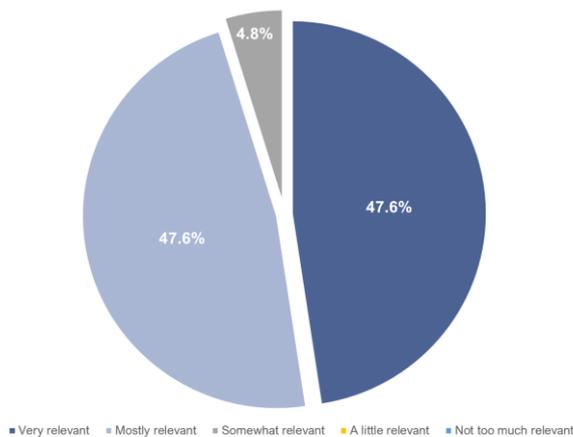
8. The time allotted for the workshop was sufficient  
(21 responses)



9. Please comment (if any) about your answers given in question 1 to 8

- ❖ Interesting and resourceful workshops.
- ❖ More time for workshop and topics discussed.
- ❖ The workshop was very professionally handled online.
- ❖ Excellent event and organizing.
- ❖ No further comment.
- ❖ To consider speakers to be given a longer time frame for their presentation so that more could be shared.
- ❖ Overall, the 3-day workshop is great.

10(a). How relevant was this project to you and your economy?  
(21 responses)



10(b). Please explain your answer given in 10(a).



- ❖ Prepare planning use.
- ❖ As a small business owner and a researcher, it is something for me to learn and anticipate the upcoming issues and how to handle them.
- ❖ MSMEs are very vulnerable to disasters and would impact their survival.
- ❖ Some topics need elaboration.
- ❖ The Philippines is disaster-prone and has a lot of MSMEs. That is why this is very crucial.
- ❖ Support for MSMEs is an important factor in economic development.
- ❖ We have increasing threats of climate change.
- ❖ The guide is most appropriate for MSMEs in our economy.
- ❖ I am working on geophysical hazards. This workshop is somewhat helpful to strengthen understanding of other perspectives.
- ❖ It is very relevant as it brings awareness about what to do and improve in my economy, as I believe the topic is still in early development in my economy. The lessons and experiences from other economies were very insightful! We cannot wait for the plan's outcome and results after being tested in the Malaysian context.
- ❖ As an agency that works closely with MSMEs, this project is suitable for MSMEs so that they can have awareness about risk management in their business and have a clear guideline on how to overcome the risk.
- ❖ MSMEs are exposed to the annual monsoon season and other types of disasters. They are less prepared for it.
- ❖ We need this input for Malaysia to kick off risk financing.
- ❖ MSMEs need to be properly acknowledged and assisted in RM implementation
- ❖ Important inputs to MSMEs.
- ❖ Chile and Malaysia share extreme natural events with high impacts on our society. Sharing experiences that improve SME readiness levels is important to improve the overall resilience levels of a economy and its economy. Thankful for the instance to know other realities and solutions.



11. In your view, what were the workshop's results/achievements?

- “
- ❖ Yes.
  - ❖ I like that I am able to foresee and understand in a holistic manner of MSMEs issues around the world and relate to Brunei.
  - ❖ Guides that are useful and policy to make sure its implementation.
  - ❖ Knowledge gained from other economies.
  - ❖ Creating network, exchanging ideas, and providing platforms where novel ones can be shared.
  - ❖ Collaboration: representatives from academic institutions, governmental agencies etc. Seek for further development.
  - ❖ The risk management guideline for MSMEs.
  - ❖ Discussions and sharing of experience from the experts.
  - ❖ Bringing together multi-disciplinary parties and sectors.
  - ❖ RM guide.
  - ❖ Able to have a proposed guide that is generic and applicable for different economies.
  - ❖ Achieved.
  - ❖ It managed to come out with good resolutions or call for actions to strengthen MSMEs resilience.
  - ❖ It brings to light awareness of the importance of DRM for MSMEs, sharing of best practices from the government and private sector, encouraging networking from the experts.
  - ❖ Strategies and guidelines for MSMEs on how to face risks.
  - ❖ The draft guide and input contributed to it.
  - ❖ Yes, marvelous.
  - ❖ Inputs to improve the RM guide.
  - ❖ Help MSMEs to be better prepared against undesirable events.
  - ❖ Learn from other experiences to be able to replicate it in each economy according to the realities of each economy.
  - ❖ Awareness raising on various strategies which could be adopted to make MSMEs more disaster and financially resilient.
- ”

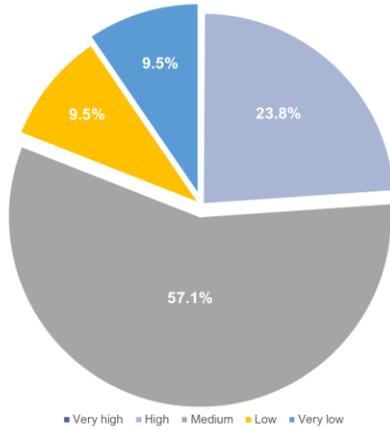
12. How was your capacity built by this workshop? What new skills and knowledge did you gain?



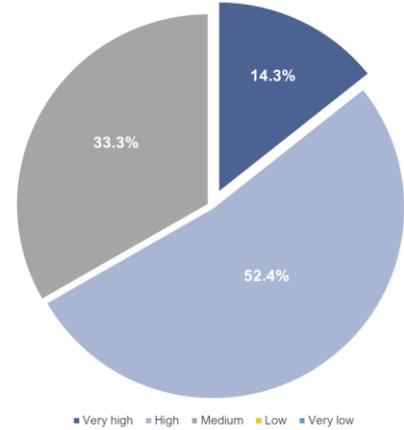
- ❖ Yes.
- ❖ Gives me more introduction on current MSMEs issues.
- ❖ New insights and information.
- ❖ Knowledge gained from other economies.
- ❖ Risk financing for MSMEs.
- ❖ The workshop contributed to literacy increase in the field of DRM financing.
- ❖ Cross stakeholders and application of DRR from APEC economies.
- ❖ Knowledge on how important DRM is for MSMEs - awareness and preparedness.
- ❖ More knowledge.
- ❖ More informed on disaster risk finance for MSMEs.
- ❖ Learned a lot of things and experience from other economies.
- ❖ New skills in understanding MSMEs requirements.
- ❖ Understanding MSMEs.
- ❖ This workshop provides a new worldview to me, particularly on what can be done to help MSMEs to face future challenges.
- ❖ As mentioned earlier, the topic is still in the early development in my economy. It was brought to light because of the pandemic. With the experiences shared by other economies, I have become more aware and gained information on what we could bring to the economy and the importance of multi-level stakeholder to implement DRM strategies.
- ❖ Input from other economies and a policy developed for the risk management.
- ❖ Crowdfunding exercise shared by Brunei delegate.
- ❖ A lot more better.
- ❖ Increase knowledge on DRM and disaster risk issues across the globe.
- ❖ Increasing. Enhance the knowledge in available guidelines/frameworks.
- ❖ Knowledge of new risk management methodologies.
- ❖ I learned the importance of BCP to reduce economic loss as well as the mechanisms/approaches being adopted by other economies to manage disaster risk.



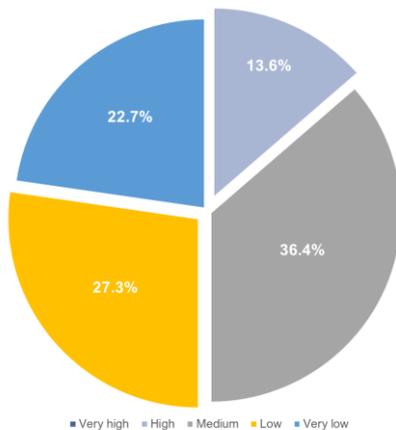
14. Rate your level of knowledge and skills in disaster risk management strategies before participating in the event  
(21 responses)



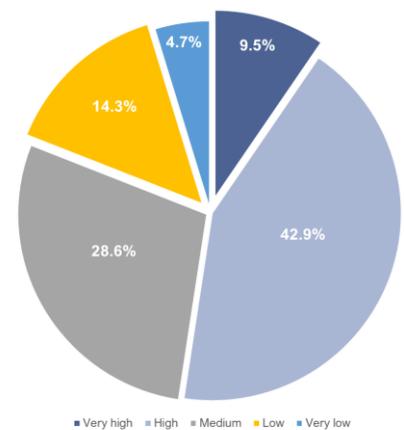
13. Rate your level of knowledge and skills in disaster risk management strategies after participating in the event  
(21 responses)



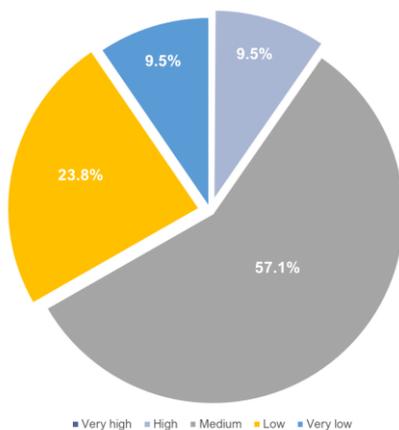
15. Rate your level of knowledge and skills in disaster risk financing before participating in the event  
(21 responses)



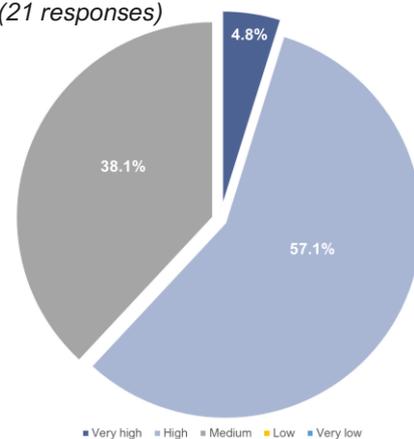
16. Rate your level of knowledge and skills in disaster risk financing after participating in the event  
(21 responses)



17. Overall, rate your level of knowledge and skills in the topic presented and discussed before participating in the event  
(21 responses)



18(a). Overall, rate your level of knowledge and skills in the topic presented and discussed after participating in the event  
(21 responses)



18(b). Please explain your answer given in 18(a).



- ❖ More information.
- ❖ Examples of case studies and suggestions given have helped me to understand.
- ❖ Informative and resourceful.
- ❖ Knowledge gained from other economies.
- ❖ Interactive discussion helped to clarify issues on what is needed in risk financing It would be better if this were face-to-face, but this is okay with the current pandemic.
- ❖ Not being an expert in DRM financial/insurance issues, the workshop provided a possibility to dive into the issue alongside great specialists in that matter.
- ❖ I come from the physical sciences, so the exposure to risk financing was invaluable.
- ❖ Gathered new knowledge, especially from the experiences of other APEC economies.
- ❖ The topics presented by the speakers are very excellent and insightful. The discussions from breakout sessions have been very helpful to understand more about what is going on in other economies. As mentioned earlier, the topic is still in the early development in my economy which was brought to light because of the pandemic. With the experiences shared by other economies, I have become more aware and gained information on what practices and initiatives we could bring to the economy and the importance of multi-level stakeholders to implement DRM strategies.
- ❖ This workshop helped me to improve my knowledge in certain areas and gain inputs from other respondents.
- ❖ It is a continuous learning process for me that I need to pay attention to.
- ❖ Now I have a more global view and knowledge.
- ❖ More information obtained during the workshop.
- ❖ Stay on the learning curve.



19. How will you use the skills and knowledge gained from this workshop to build capacity in your home economy? Please provide examples (e.g., develop new policy initiatives, organize training, develop work plans/strategies, draft regulations, develop new procedures/tools, etc.).

- “
- ❖ Research.
  - ❖ From these, I would like to propose a new research area to the academician and develop a work plan for the MSMEs by having more research within the field.
  - ❖ Find ways to implement the plan.
  - ❖ Re-echoing knowledge gained to concerned government and private entities.
  - ❖ Incorporate it in the OSH Standards of the Philippines.
  - ❖ The information will be discussed with relevant experts with an intention to incorporate the knowledge for further policy development.
  - ❖ Will continue to support the MSMEs in risk management capacity buildings.
  - ❖ Collaborate with relevant ministries on how to provide more resilient and sustainable strategies for MSMEs.
  - ❖ Organize training.
  - ❖ Develop more comprehensive strategies.
  - ❖ Organize more training for MSMEs and approach related agencies to play more significant roles in assisting MSMEs.
  - ❖ Develop programs for training.
  - ❖ Organize training in promoting youth-led MSMEs.
  - ❖ Educate business owners through training, and perhaps this can improve their awareness of the need for DRM.
  - ❖ With the limited studies in the economy, it would be beneficial to start a research to gauge the level of understanding of DRM within MSMEs before moving towards developing policy initiatives. So, we can suggest to policymakers the risks faced by MSMEs and look at PPP.
  - ❖ I will share with my director and immediate supervisor, so they can have a better idea of how inputs from this workshop can reach MSMEs, maybe through training or other platforms.
  - ❖ Interventions in related forums and policymaking.
  - ❖ Will provide policy input to authorities.
  - ❖ To improve the RM Guide, to develop RM Toolkit tailored to the MSMEs.
  - ❖ Prepare related documentation (e.g., report).
  - ❖ Promote work instances between different economic sectors and with different scales to generate shared knowledge.
  - ❖ Provision of Business Continuity Planning Training to workers in the informal sector.
- ”

20. What needs to be done next by APEC? Are there plans to link the project's outcomes to subsequent collective actions or individual actions by economies?



- ❖ More seminars like this.
- ❖ I'm suggesting maybe a workshop purely for academicians in Ph.D./Master by Research Youth to share their knowledge on MSMEs. This is to open up more ways for young academicians to participate with the economy more, not just conference.
- ❖ Workshops on how to use the guide and get governments and relevant agencies to participate.
- ❖ More time for discussion. Include the previous speakers during FDG. If possible, have it face-to-face again so focus on class is better.
- ❖ Link with ILO and WHO.
- ❖ Maybe some recommendations can be issued and distributed by EPWG Secretariat as a result of the project.
- ❖ To refine the action plan and track the execution.
- ❖ Share this event's outcome to be implemented accordingly, not just centralized for disaster risk center, but DRM requires many parties to be involved, including financial institutions.
- ❖ More similar event like this.
- ❖ The guide has to be improved and adopted by APEC economies, with the development of additional tailor-made training material and toolkits.
- ❖ More programs like this and get more involvement from MSMEs' owners.
- ❖ Disseminate the outcome and operationalize the resolution.
- ❖ I am not sure.
- ❖ Testing the guidelines in member economies and getting the feedback to improve the guideline further.
- ❖ To share the empirical findings of the project and see if other economies have used the plan in their economies and how the plan has changed according to their individual economic context.
- ❖ Post COVID-19 recovery plan.
- ❖ Continuous intervention (guidance, monitoring, etc.).
- ❖ More such program with a focus on each economy or region.
- ❖ Expand project related to risk management strategies.
- ❖ A follow-up activity (e.g., roadshow, seminar, and forum).
- ❖ APEC should continue to promote these instances of collaboration between the different economic managers in the framework of disaster risk management. All economies share risk management, especially socio-natural, with high impact, so new and innovative methodologies collaborate to continue experimenting in improving disaster preparedness.
- ❖ Yes.



21. Please provide comments on how to improve the project (EPWG 03 2019A).

- ❖ So far, all good!
- ❖ More involvement from other economies.
- ❖ Kudos! May we have copies of all PowerPoint presentations? Thank you.
- ❖ The guide has to be improved and adopted by APEC economies, with the development of additional tailor-made training material and toolkits.
- ❖ Greater participation from more economies in terms of number of participants.
- ❖ No further comment.
- ❖ No comments. All is good. Very useful and interactive.
- ❖ Engage business chambers/associations and OSHA regulatory bodies on how to proceed to the next level.
- ❖ More such program with a focus on each region and their natural hazard profiles.
- ❖ To invite participants from other economies as well, so we will get a global experience.
- ❖ Suggested having a slot of sharing session by vulnerable MSMEs.

22. Gender  
(21 responses)

