

# Asian Disaster Management **News**

## ENGAGING THE PRIVATE SECTOR IN DISASTER RISK REDUCTION



# Executive Director's Corner

Dear Readers,

Reflecting on the challenges faced by the Asian community due to a vast array of disasters, one cannot help but recognize and acknowledge the influence of the private sector as a key partner in mitigation of hazards and a driver of economic recovery.

The economic value at risk from natural hazards continues to rise. There is a direct connection between natural and human-made systems that underpin our economic and societal welfare. As global interdependencies continue to grow, these warnings prompt us to consider the need for a radical change in the preparation and response of both the public and private sectors to disaster (PWC, 2013).

Engaging the private sector in disaster risk reduction is one of the key elements of ADPC's programming. We support private enterprises by offering scientific information for business risk assessment and by identifying the current government policies that assist enterprises with preventing, responding to, and recovering from natural hazards. We raise capacities of enterprises to use scientific information and other data in composing business continuity and management plans. With experience from working closely with governments and local communities in the region, ADPC is launching a multi-year program called *iPrepare Business* to create awareness of resilient investment among governments and private sector.

We need partnerships and support to create an enabling environment where effective legislation supports resilient investments, private enterprises are incentivized for addressing and incorporating risk reduction measures and local businesses are prepared for future disasters.

This special edition of Asian Disaster Management News is released ahead of the 6th Asian Ministerial Conference on Disaster Risk Reduction. I hope you find the information we've provided for you enlightening and useful for facilitating discussion during the conference.

**Shane Wright**  
Executive Director



## About us

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# THE NEXT CHAPTER ON BUSINESS: RESILIENT INVESTMENT TO PROTECT GAINS

Resilient businesses are crucial parts of safer communities and societies. The long-term economic efficiency of investment in disaster risk reduction has become very evident in recent years.

**T**HE FLOODS IN THAILAND IN 2011 outlined the need to build resilient societies to disasters and the critical importance of realizing human security as a basis of resilient nations. The flooding had a devastating effect on the private sector causing major supply chain disruption globally. The Great East Japan Earthquake and Tsunami of 2011 is a reminder that disasters can severely affect both developed and developing countries. Such damages and losses are an impediment to economic growth, sustainable development and poverty reduction. The Christchurch earthquake and the ongoing rebuilding program are reminiscent of the burden on economy caused by temporary or permanent relocation of business activities.

Globally, the extent and severity of natural disasters have increased and continue to rise in an alarming upward trend, if not exponentially. The role of the private sector will be key when deciding national priorities in reducing disaster risks and preparing for unpredictable, yet manageable disasters in years to come.

### Private sector highly at risk

The private sector has rarely been addressed as a target group. However, it is highly at risk and suffers considerably from disasters such as flooding, earthquake, tsunami, landslides, and disruption of business continuity. It plays a key role in economic terms and is pivotal for post-disaster economic recovery in guaranteeing income and employment.

The 5th Asian Ministerial Conference on Disaster Risk Reduction (AMCDRR) in 2012 outlined priorities for private sector engagement. These include developing and supporting



local and national governments' risk assessment as well as resilience of building and investment decisions; cooperating with multiple partners to prioritize resilience in land use planning and design; and ensuring investments are resilient to impacts of extreme climactic events and new risks presented by rapid urbanization such as stress to eco-system services and natural resources. The key pillars to promote a resilient

economy (Figure 1) require risk-informed decisions and building capacities of the private sector.

Yet, in many developing countries few preventive measures have been taken by private sector establishments to deter the affects of natural hazards and to adapt to climate change (e.g., setting incentives for disaster risk reduction, climate change adaption, safer

**SMEs must prepare** *A goldshop owner prepares for flooding in Thailand. The concept to ensure business resumption after disruptions is rare among small and medium enterprises.*

construction measures, appropriate management methods, insurance policies, and financing mechanisms). The reasons for this include a lack of institutional mechanisms; lack of awareness and information of the risk of damage; little knowledge of the options for adaptation; limited financial resources to implement technical preventive and non-technical adaptive measures; and a lack of advisory and support services from the government.

### **Business continuity planning still rare among SMEs**

Following the major disasters in 2011, the Asia-Pacific Economic Cooperation (APEC) leaders called on member economies to promote and facilitate the use of business continuity planning (BCP) to better prepare businesses and communities for natural disasters and to mitigate their impacts. However, BCP is a relatively new concept when compared to disaster risk management planning done by the national and local governments.

BCP is widely embedded in large

organizations as well as certain public entities. Yet, the concept to ensure business resumption after disruptions is rare among small and medium enterprises (SMEs), which constitute more than 90 percent of the private sector. A recent survey on the BCP status of the private sector in the APEC region, conducted by the Asian Disaster Reduction Center (ADRC) and the Taiwan Institute of Economic Research (TIER) shows that despite the repeated threat posed by disasters, only 13 percent of SMEs have business continuity plans (BCPs) and fewer than 50 percent are aware of the concept. In contrast, the survey shows that 47 percent of large businesses have BCPs and 75 percent are familiar with the concept. Both large and small businesses that have experienced a disaster are more aware of the BCP concept than those that have not.

The survey indicated that the top three obstacles preventing businesses from implementing BCPs include lack of knowledge about the BCP concept and the process of developing a plan; insufficient information about the potential risks to develop a BCP; and low management awareness of the need for a BCP. For businesses to succeed, they need to be resilient first. The business continuity needs appropriate pre-disaster investments to reduce post-disasters losses.

### **Risk reduction is a business issue**

The benefits and opportunities provided by recent collective or collaborative private sector initiatives need to be recognized, and a dedicated institutional setup is crucial to promote resilient investments. Business views and expertise need to be channeled into national and local disaster risk reduction frameworks and strategies as well as into regional disaster risk reduction

interventions. The private sector needs to establish an institution to gather and distribute disaster risk reduction inputs in the form of a business advisory group dedicated to safety. The government is required to assist the relevant ministries to liaise with private companies on disaster risks reduction issues.

According to the Global Assessment Report 2013, most private entities think of risk reduction as a moral issue, but the impacts from disasters are business issues. It is crucial to foster an understanding of disaster risk reduction and climate change adaptation among private investors and to show them ways of getting engaged in risk reduction initiatives. It is also required to increase the understanding of decision makers and the general public regarding the importance of private sector – especially SMEs involvement in disaster risk reduction and climate change adaptation.

With the ongoing global debates on safer and sustainable development, businesses are paying more attention to disaster and climate change risks and vulnerabilities. The forthcoming 6th Asian Ministerial Conference on Disaster Risk Reduction hosted by the Royal Thai Government provides a unique opportunity to involve businesses in fostering partnership with national and local governments to align their corporate social efforts with broader disaster risk reduction programs. ■

**Figure 1: Key pillars to promote resilient economy**



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# THAILAND'S SMALL BUSINESSES REMAIN AT RISK TO NATURAL DISASTERS

The majority of Thai SMEs have little to no information or plans for disaster preparedness – even though many of them have consistently incurred heavy losses from floods and storms in recent years, shows The Asia Foundation's study.

**F**LOODS ARE A COMMON occurrence in Thailand and many communities have learned to adapt to annual flooding events. However, the country continues to experience more extreme floods and droughts. In 2011, Thailand experienced the worst flooding in 50 years when 65 of the country's 77 provinces were impacted during the floods. The World Bank estimated that the economic loss was approximately THB1.4 trillion (USD45.7 billion) which makes the 2011 flooding one of the costliest natural disasters in recent history.

Droughts have had a significant impact on the country. In 2010, drought damage was estimated at over THB1.4 billion (USD42 million), and in April 2014, 40 of Thailand's 77 provinces were considered to be drought disaster zones with nearly 17,000 villages affected.

**Hard to swallow** *Of the SMEs affected by natural disasters, the food and beverage industry has been the most impacted.*

Thailand is aware of the potential dangers from natural disasters and there have been many initiatives to help the industrial sector prepare, adapt, and respond. Unfortunately, small and medium enterprises (SMEs) are often excluded or forgotten from these initiatives. They do not have adequate information or contingency plans for risks associated with natural disasters. Community resilience greatly depends on the ability of the private sector to bounce back, re-establish production and continue to provide employment to

local workers after a disaster. SMEs' disaster preparedness and response is critical.

## SMEs call for training

In 2013, The Asia Foundation commissioned The Center for Economic and Business Forecasting at the University of the Thai Chamber of Commerce (UTCC) to undertake a survey of SMEs' disaster preparedness. UTCC surveyed 429 SMEs in Thailand to assess their preparedness for natural disasters. The study was conducted in provinces that are highly vulnerable to disasters such as cyclones, floods, droughts, landslides, and tsunamis, including Phra Nakhon Sri Ayutthaya province in the central part of Thailand, Ubon Ratchathani in the northeast, Chiang Rai and Phitsanulok in the north, and Songkhla and Phuket in the southern part of the country. The majority of the respondents were small business operators in various sectors including hotels and restaurants, transportation and communication, food and beverage, metal products, rubber and plastics products, machinery and electronic



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## Lead Story

### Natural disaster frequency and loss/damage costs by province (2002–2012)

	Natural disaster occurrence		Frequency (per year)	Avg. duration (days)	Avg. loss/damage (million THB)
	No	Yes			
Phra Nakhon Sri Ayutthaya	8.8	91.2	1	23–24	8.91
Songkhla	31.3	68.7	1–2	8–9	0.91
Chiang Rai	57.1	42.9	1–2	9–10	0.43
Phuket	59.4	40.6	1–2	9–10	6.21
Ubon Ratchathani	75.9	24.1	1–2	15–16	1.27
Phitsanulok	76.9	23.1	1–2	37–38	0.21

### Impact on SMEs by type of natural disaster and degree of impact (2002–2012)

	SMEs impacted (%)	Degree of Impact (% of SMEs)				
		Very low	Low	Moderate	High	Very high
Inland Flooding	71.8	3.4	11.5	24.3	47.3	13.5
Earthquake	27.7	60.0	21.8	14.5	3.6	-
Tsunami	20.4	45.2	26.2	16.7	9.5	2.4
Cyclone	18.9	46.2	17.9	23.1	10.3	2.6
Drought	15.5	62.5	9.4	18.8	6.3	3.1
Severe storm	15.0	74.2	6.5	19.4	-	-
Forest fire	13.7	89.3	7.1	-	3.6	-
Landslide	13.6	82.1	14.3	3.6	-	-
Flash flooding	13.6	75.0	10.7	-	14.3	-
Coastal Flooding	13.1	74.1	14.8	7.4	3.7	-

appliances, and television and communication.

The survey results indicate that SME respondents need and want disaster risk management (DRM) training. Curriculum topics in high demand included: the development and implementation of DRM plans and emergency management protocols; disseminating available information from the local, provincial and

# 48%

Percentage of businesses that have been affected by a natural disaster on average once or twice per year during the last 10 years in Thailand.

national governments on disaster preparedness and emergency response; disaster loss/damage assessment; and disaster response, recovery, and rehabilitation. An important objective of a future DRM workshop would also be to foster formal and informal DRM networks between business owners and local government response agencies.

### Food and beverage industry most impacted

During the past ten years (2002–2012), 47.8 percent of the enterprises who took the survey had been struck by a natural disaster once or twice a year on average. The disaster lasted an average of 23–24 days, and damage and losses averaged THB3.6 million baht. The most common natural disaster experienced by businesses was inland flooding that had the highest degree of damage/loss.

When focusing on geographic areas, not surprisingly given the 2011 flooding, enterprises in Phra Nakhon Sri Ayutthaya were the most adversely affected by natural disasters and the degree of damage/loss was high. Earnings were identified as the most massive loss for the business; second was the cost of disaster mitigation and third the damage/loss of buildings and cultivating lands consecutively.

Deeper analysis revealed that of the SMEs that were affected by natural disasters, the food and beverage industry was most impacted: 55.3 percent of the industry had endured a natural disaster at least once in the past 10 years. Yet, the highest loss/damage costs accrued on average were to the metal products industry: THB38.2 million (USD1.3 million) per event.

### Percentage of industry impacted by a natural disaster (2002–2012)

Machinery and Electronic Appliances	26.7	
Metal Products	29.6	
Television and Communications	30	
Transportation and Communications	47.3	Industry %
Hotels and Restaurants	49.7	
Rubber and Plastic Products	52	
Food and Beverages	55.3	

## Lead Story

### Majority of businesses not well prepared

Disaster risk reduction or disaster preparedness is the concept and practice of reducing disaster risks through systematic efforts to analyze and manage the causal factors of disasters. This includes reduced exposure to hazards, lessened vulnerability of people and property, wise management of land and the environment, and improved preparedness for adverse events. When asked to evaluate their level of preparedness, about one third of surveyed SMEs responded that they were moderately able to cope with a natural disaster, while one third were not ready at all, and the remaining were split either high to very high (about 20%) and low to very low (about 10%).

One of the most revealing statistics of the study is that 73.2 percent of all surveyed SMEs said they had no disaster risk management plan. The reasons included: no necessity, lack of knowledgeable experts, lack of understanding, and inadequacy of tools and resources. Additionally, over half (53.6%) of the SMEs never cooperated with the local government agencies and an additional quarter (27.9%) had limited engagement with local government. The one quarter that had cooperation with the government, helped build screens for water and disseminate information from government disaster managers to local residents.

The survey studied four elements of natural disaster preparedness: preparedness assessment, natural disaster prevention planning, staff training, and asset prevention and risk insurance. It was found that Thai entrepreneurs' readiness was low to very low, and the element they mastered best was natural disaster prevention planning.

# 58%

Percentage of SMEs in Thailand that don't have a disaster plan due to a lack of knowledge, tools or resources about disaster risk management.

It can be concluded that the surveyed SMEs have between low and very low levels of preparedness on average. They often lack early warning alert systems, auxiliary facilities to shelter and care for disaster victims, transportation and communications management networks during disaster events, and financial preparations for damages and losses due to more frequent and severe weather.

### Need for awareness raising and training

To help explain why 73.2 percent of all SMEs surveyed did not have a disaster risk management plan, it is worth noting that almost the same exact amount (73.1%) did not have prior exposure to DRM planning procedures and principles, and 86.9 percent of respondents had never attended a DRM training course. Only 26.9 percent of respondents had some knowledge on how to

### Percentage of SMEs interested in DRM training by type, size, and province

	No (%)	Yes (%)
<b>Type of business</b>		
Hotels and restaurants	17.1	82.9
Rubber and plastic products	20.0	80.0
Television and communication	20.0	80.0
Food and beverages	25.0	75.0
Metal products	33.3	66.7
Transportation and communication	50.0	50.0
Machinery and electronic appliances	53.3	46.7
<b>Size of business</b>		
Small	33.0	67.0
Medium	14.0	86.0
<b>Province</b>		
Phitsanulok	19.6	80.4
Songkhla	22.0	78.0
Chiang Rai	22.8	77.2
Phuket	26.6	73.4
Phra Nakhon Sri Ayutthaya	34.5	65.5
Ubon Ratchathani	41.9	58.1

## Lead Story



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reduce their vulnerability to natural disasters, and half that (13.1%) had actually attended a training course. Popular courses cited were managed by municipal governments, district administration organizations, the Department of Disaster Prevention and Mitigation of Thailand, the Royal Irrigation Department of Thailand, Chiang Rai Horticultural Research Center, and the Department of Tourism of Thailand.

It is not surprising that SMEs feel that DRM planning is not necessary. If they are not aware of what it entails or how it can safeguard people, places, and assets, then they won't be interested. However, when asked whether they would be interested in attending a DRM training course if available, 71.7 percent of respondents stated that they would participate, and more than 80 percent of the hotels and restaurants industry, rubber and plastic products industry, and television and communications industry said they were interested. The respondents expressed that they would be most interested in learning about the following DRM topics: preparedness planning (24.9%),

**Too late** A small store sandbags its entrance in response to the 2011 flood, however the damage has already been done. Most SMEs don't feel that disaster risk management planning is necessary because they are not aware how it can safeguard their assets.

disaster mitigation planning (16.6%), disaster management (14.6%), and disaster risk and loss and damage assessment (13.3%).

Although, fortunately enough, Thailand has not experienced another severe flood since 2011, climate change is predicted to be more extreme over the next 50 years. In turn floods, droughts and tropical storms – which cause numerous natural disasters annually – will only multiply in frequency and intensity. The entire country will need to adapt and prepare for future disasters. SMEs are an integral part of communities and need to be taken into account in relevant national strategies. ■

# 60%

Percentage of respondents who acknowledged that their lack of awareness and preparedness contribute to the high level of impact caused by disasters.

*The Asia Foundation is a nonprofit international development organization committed to improving lives across a dynamic and developing Asia. For more information: [asiafoundation.org](http://asiafoundation.org)*



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1. United Nations Office for Disaster Risk Reduction, UNISDR Terminology and Disaster Risk Reduction (Geneva, 2009)



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## PUBLIC POLICIES TO SUPPORT **PRIVATE SECTOR RESILIENCE**

The great flood in 2011 was a changing point for Thailand's disaster risk management policies. The policies that used to focus on response and recovery, now also incorporate not only mitigation but also preventive strategies and recovery plans.

**I**N 2002, THE GOVERNMENT OF THAILAND ESTABLISHED THE Department of Disaster Prevention and Mitigation (DDPM) under the Ministry of Interior to act as a central agency for disaster prevention and mitigation in order to consolidate the disaster management systems of the country. To support DDPM's mission, the country ratified the Disaster Prevention and Mitigation Act 2007, followed by the National Disaster Prevention and Mitigation Plan (2010–2014) and detailed disaster prevention plans for the capital city Bangkok and the provinces.

The national plan covers four strategies including prevention and mitigation, preparedness, response and relief or emergency management, as well as rehabilitation and reconstruction – thus demonstrating a comprehensive approach to disaster risk management. Nevertheless, the actual implementation did not perfectly correspond to the plans. Most of the labor and budget still went more towards disaster response and mitigation and less to prevention and preparedness as the country's awareness on the latter area was rather low.

Additionally, as the main focus of the plan was on the

civil society in general, the private sector – the crucial contributor to the country's economic growth – was left with their own means to survive. This may be one of the reasons why the country suffered up to THB46.5 billion loss as well as big decline in GDP after being hit by the enormous mass of water in 2011.

### Turning losses into gains

The losses caused by the big flood helped highlight the vulnerability of the private sector. Several policies were drafted to assist the private sector – and especially small and medium enterprises (SMEs) – in damage mitigation and business recovery. Some of the assistance measures included tax exemption and reduction measures implemented by the Thai Customs Department, the Revenue Department and The Board of Investment; clean loans with low interest rates granted to SMEs under the cooperation of the Bank of Thailand, SME Bank and various other financial institutes; Thai Credit Guarantee Corporation's credit for SME entrepreneurs through the National Catastrophe Insurance Fund, and the Layoff Prevention and Mitigation Project by the Ministry of Labour.

Furthermore, the integration of disaster risk reduction into public policies for private sector development has become more evident in the SMEs Development and Promotion Plan (2012–2016) of the Office of Small and Medium Enterprises Promotion, in which disaster risk reduction was introduced as part of the objective of building an effective environment to encourage business activities of SMEs. The plan also touches on preparedness enhancement such as providing SMEs with legal advice on insurances and encouraging the adoption of disaster warning systems.

**Historical flooding** *Thailand suffered up to THB46.6 billion in losses after the floods in 2011.*



### Wider opportunities for disaster risk management

The SMEs Development and Promotion Plan is part of a broader National Economic and Social Development Plan (2012–2016), which emphasizes both the preparation for and reaction to disasters in order to achieve sustainable development. The suggested measures include for example implementing business continuity planning, improving the public-private partnership and effectively utilizing information and communication technologies.

Business continuity management as a means of mitigating disaster risk is also mentioned in the Strategy for Reconstruction and Future Development by the Cabinet of Thailand. In addition, Thai Industrial Standards Institute encourages Thai entrepreneurs to adopt the international standard on business continuity management (ISO22301).

### On the right track

The flood eventually acted as an incentive for a better cooperation in disaster risk management, including cross-country collaborations such as the Otagai Project by the governments of Japan and Thailand that promotes collective and strategic Japanese direct investments in Thailand, and the Daruma Project implemented by the Department of International Trade Promotion of the Ministry of Commerce of Thailand and the Japan External Trade Organization (JETRO).

The two cross-national projects share the aim of increasing Thai SMEs' resilience to business disruptions. Besides the bilateral partnerships, we have also seen more public-private partnerships such as the Government of Thailand's water management project, which incorporates high-level information technology and is implemented by Loxley Co. Ltd.

Although the progress in the development of Thailand's disaster management policies cannot compete with the ones of the developed countries, Thailand is on the right track towards disaster resilience development. ■



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# How to make business continuity planning among Thai SMEs possible?

Respondents to ADPC’s survey call for stronger public-private partnerships to raise awareness of business continuity planning.

**S**MALL AND MEDIUM ENTERPRISES (SMEs), representing more than 99 percent of private sector companies in Thailand, were severely affected by the unprecedented floods in 2011. Some enterprises lost their assets, employees and went bankrupt. National aid in its different forms was offered to small businesses to help them recover. However, due to a lack of proper preparedness, many of the businesses are still at risk of future inundation and other types of disasters.

Business continuity planning as a tool for preparing for natural hazards is widely recognized in large organizations as well as certain public entities in Thailand. However, the concept of ensuring business resumption after disruptions is not equally as well-known among Thai SMEs, as the surveys conducted by Asian Disaster Reduction Center (2011) and The Asia Foundation (2012) stated. The underlying reasons for the low rate of business continuity planning among Thai SMEs include the lack of management awareness, expertise and financial resources.

## Surveying the need for business continuity planning

In a survey conducted by ADPC on the recommended methods for promoting business continuity

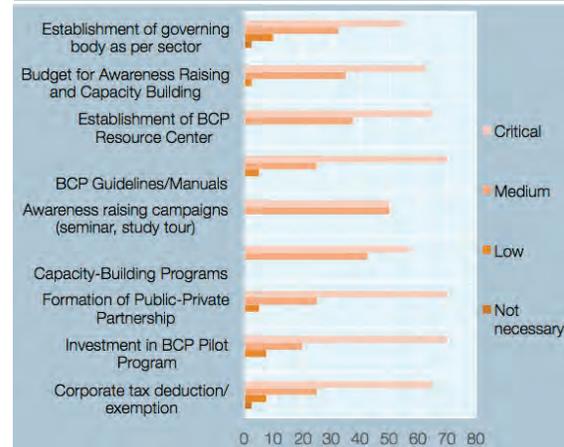
planning for SMEs in Thailand, 70 percent of the respondents believed it would be critical for the government to publish business continuity planning guidelines or manuals for each sector.

Completed by approximately 40 respondents from the public and private sectors, the aim of the survey was to collect recommendations for

**99%**

Percentage of the private sector in Thailand represented by SMEs. Due to lack of proper preparedness many SMEs are still at risk.

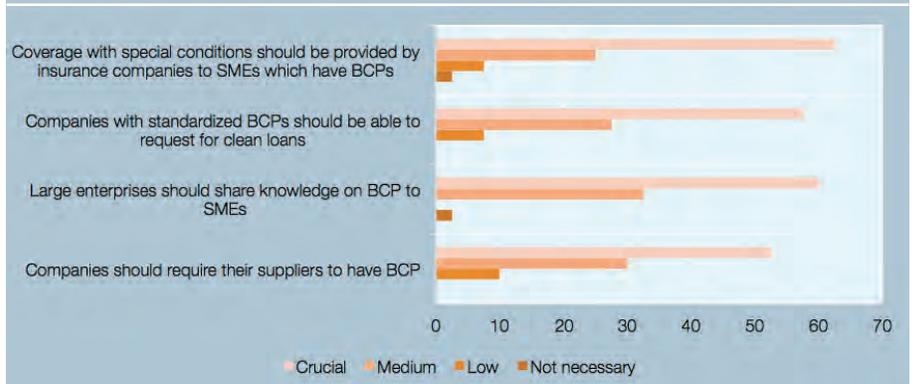
**Figure 1.** Recommendations for the public sector on BCP promotion



the concerned government agencies and private enterprises regarding possible measures to improve the status of SMEs’ business continuity planning in the country. Respondents were asked to rate the level of necessity of the suggested measures from their perspective.

70 percent of the respondents considered that the government should prioritize the development of public-private partnerships to raise awareness of business continuity planning among SMEs. Meanwhile, more than 50 percent of the respondents believed that all methods suggested in the survey (Figures 1 and 2) would be necessary. The establishment of a governing body by the government to ensure that all business sectors have business continuity plans was considered as the least preferable method.

**Figure 2.** Recommendations for the private sector on BCP



### Lower premium rates for the prepared

More than 60 percent of the respondents would like the insurance companies to provide special offers – i.e., low premium rates – to businesses that have standardized business continuity plans. More than half of the respondents also consider it necessary that a company with a written and standardized business continuity plan is allowed to request for clean or low interest rate loans

from banks, and that companies should expect their suppliers to have a business continuity plan. 60 percent of the respondents also believe that large companies with experience and expertise in business continuity planning development should share their knowledge with SMEs in the same sector.

Making the development of business continuity planning in Thai SMEs possible, requires insightful policies by the government, measures by

private sector as well as joint efforts of the two sides. However, there is another important factor: the willingness of SME entrepreneurs to adopt business continuity planning. ■



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## Initiating capacity building for business continuity planning

**I**N ORDER TO STRENGTHEN SMALL AND medium enterprises' (SMEs) resilience to natural hazards, ADPC together with the Department of Disaster Prevention and Mitigation of Thailand and the Office of Small and Medium Enterprises Promotion organized two Trainings of Trainers on Business Continuity Planning (BCP) in spring 2014.

Funded by JTI Foundation under the project called *Private Sector Engagement in Natural Disaster Risk Reduction for Resilient Economies through Business Continuity Planning and Management*, the workshops were designed for representatives of public and private agencies that promote business continuity planning as part of their work. Representatives from government agencies and other organizations such as the National Economic and Social Development Board, National Food Institute, SME Bank, Thai Chamber of Commerce, Thai Industrial Standards Institute, Thailand Automotive Institute, and Tourism Council of Thailand were equipped with basic business continuity planning skills that they can share with SMEs in Thailand.

### A call for a national policy

Based on the *Guidebook on SME Business Continuity Planning* developed by APEC SME Crisis Management Center in collaboration with Asian Disaster Reduction Center, the first training of trainers provided the participants with an opportunity to share their experiences on business continuity planning. As a continuum, the second training gave them chance to take the *Certified ISO 22301 Foundation* exam on business continuity management systems.

During the brainstorming sessions, the participants expressed their hopes that in the future, the government would fund training programs on business continuity planning across the country as well as publish a ready-made toolkit for SMEs. In addition, the participants called for the government to compensate the expenses caused by the consultancy services needed for development of business continuity plans. It was also suggested that larger companies with adequate resources could help smaller companies in implementing

their plans.

Achieving competitive advantage and sustainable development through business continuity planning would require the government and other concerned agencies to address a national framework that would focus on building the private enterprises' capacity in the field. Business continuity planning could also be boosted by involving large companies in order to raise awareness among the smaller ones. ■



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## Case Studies



Photo Leila Uotila

# TECHNOLOGY AT THE FOREFRONT OF DISASTER RISK REDUCTION

“We want to create solutions to mitigate the impacts when a disaster hits,” says Vasant Chatikavanij from Loxley Public Company Limited.

**T**RADING AND TELECOMMUNICATIONS COMPANY LOXLEY’S roots go all the way back to 1939 when it was established around the export of rice and lumber from Thailand to neighboring countries and beyond. Gradually the business moved from exports to importing technology products from the more developed parts of the region – as a result the company is one of the biggest telecommunication firms in the country today.

Conscious of the increasing risk caused by natural hazards in the region, Mr. Vasant Chatikavanij, Senior Executive Vice President of Loxley is committed to contributing to the development of technology that actively reduces disaster risk.

“In the case of Loxley, we have been lucky in the sense that we have not usually been the party affected by disaster in Thailand. Regardless, we hope that we can contribute to helping others by providing solutions that help mitigate the impacts when something happens,” he says.

Accordingly, during the past couple of years, the company has invested in the development of a cloud-based flood early warning system. The objective is to create a reliable information database for the decision-makers to base their

actions on. The importance of such systems is enunciated by how climate change has made it risky to only rely on historical data.

Since the destructive floods of 2011, potential investors have become particularly concerned about the seasonal flood-related risk to businesses in Thailand.

“People said we could not have that kind of a flood and it happened. I am not saying that foreign investors would be running away, but they are not jumping in either – at least before we have a good plan in case of future flooding,” Mr. Chatikavanij says.

### **Taking investments in disaster preparedness as a business opportunity**

Mr. Chatikavanij sees disaster preparedness as an opportunity for private companies: while developing systems to mitigate disaster risk, the companies can also reach their business goals. However, successfully launching innovative systems in practice requires cooperation with the public sector.

“Effective solutions to mitigate disaster risk necessarily involve several agencies and they cannot be implemented alone by a single company. The private sector has a lot of solutions ready, but at the moment can reach only a 10–15 percent effectiveness because the systems cannot be deployed. This is because there is nobody to say yes or no to the proposed systems on the governments’ side,” he states.

Most urgently, Mr. Chatikavanij calls for a mechanism through which investments from the private sector could easily be channeled to disaster risk reduction.

“We need an investment-inducing mechanism and related policies that are private sector -friendly. What is needed is something similar to the field of life- and health insurances where companies find insuring profitable while people are efficiently covered against disastrous health-related events,” Mr. Chatikavanij compares.

He is convinced that a number of companies are ready to contribute to disaster risk reduction – once a proper mechanism is established.

“If the rules are set, I think the governments won’t even have to pay for disaster preparedness themselves. Companies are willing to pay to mitigate disaster risk. For

example, if an enterprise buys computers and can prove that they are cloud-based, they could earn credit for that. Or 0.01 percent of the companies’ corporate tax could go to a disaster fund,” he suggests, referring the construction of an inter-state highway system in the United States that was directly funded by fuel tax – without the money going to the government coffers first.

### **Planning ahead**

The recent political turmoil in Thailand has given Loxley the impetus to draft emergency plans. However, Mr. Chatikavanij sees the reactive nature of both natural and man-made disasters as a challenge for the preparation phase. As proof of the reactive nature of disaster preparedness, Loxley revised its emergency plan last time during the flooding in 2011.

“If a disaster hits today, I don’t think we can expect the plan to work flawlessly. But at least our people are aware,” he states.

He continues on to emphasize the shared responsibility of private sector entities in preparing for disasters.

**“ If a disaster hits today, I don’t think we can expect the plan to work flawlessly. But at least our people are aware. ”**

“There are factories around big companies that don’t pay anything for disaster preparedness because they think that the neighboring company already does that for them. It’s too idealistic to say that everybody will prepare on their own.”

Loxley expects its high-value service suppliers to always have an insurance to avoid risk under changing circumstances. However, for smaller companies such as some of Loxley’s sub-contractors, drafting business continuity plans doesn’t always make economic sense, Mr. Chatikavanij

points out.

“There are better ways for them to manage the risk, alternative back-up systems. The world is moving to a lower and lower margin and these margins do not always allow for sufficient planning for disaster risks,” he reminds.

### **Technology as a way towards solutions**

Loxley recently joined the Asia-Pacific Business Forum, a platform for a regional dialogue between the public and private sectors established by the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP).

“Through this forum, we are looking to the future in terms

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## Case Studies

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of how we can contribute to emergency preparedness, which seems to become harder and harder. We have to prepare ourselves and the business,” Mr. Chamnan Jirasak, Executive Director of Data Mining Company Limited under the Loxley Group.

Within this and other cooperation platforms, Loxley wants to stress the value that technology can bring to disaster risk reduction.

“Nowadays, things can be done cheaply through technology and we can mitigate a lot of the disaster risk with the help of electronic solutions. If you have good tools, you can disseminate information to all levels that are affected by disaster,” Jirasak says.

“For example, they say that Bangkok has 20,000 security cameras, but there are another two or three million smartphones that can give information. We can quickly source data from Twitter, Facebook and other social media channels in order to find information about the where the flooding is,” Mr. Chatikavanij adds.

“The problem is that technology evolves so quickly that it doesn’t fit into the traditional procurement cycle. By the time you finish all the needed documents, technology has already evolved to the next step. The question is, how to make the public-private partnership work better,” he concludes. ■



*Ms. Leila Uotila serves as Communication Specialist at ADPC.*

### Mining data from the deep web to prepare for floods

**L**oxley in cooperation with AGT International was chosen to build an integrated water resource management system for Thailand. The system is based on a technology platform called ReadyMIND that monitors, simulates and predicts floods and droughts.

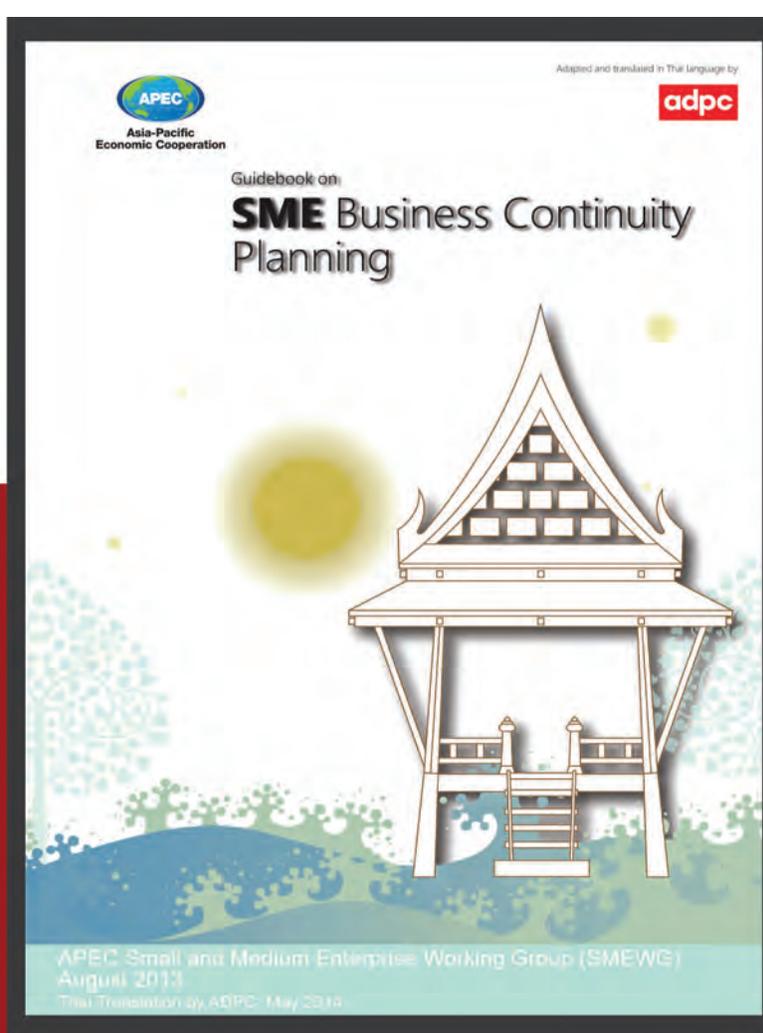
“We want to unify all agencies in Thailand that deal with water in order to gather the information and know-how that they have, and collect it into a national data center,” says Dr. Ammarin Daranpob, Senior Consultant at Loxley Public Company Limited.

With the help of a sub-system called OpenMIND, it is possible to search valuable information from the deep web’s public domain.

“We designed the system to look for keywords such as ‘earthquakes’, ‘disaster’, and ‘injuries’. When something happens and someone posts it, it will add to the pool of information we have. We can then pull out that information and see what happened and where,” Dr. Daranpob explains.

“For example in the case of a flooding, tens of thousands of people post information about it on the internet. By mapping this information, it will be possible to see which area has the biggest number of impacted people so that the correct amount of relief resources can be assigned,” Dr. Daranpob states.

*Read more about ReadyMIND on page 48.*



# APEC's SME Business Continuity Planning Guidebook

now available in  
multiple languages.

# MODEL STUDENT IN RESILIENT BUSINESS CONTINUITY MANAGEMENT

The massive flood in 2011 was a real trial for the businesses in Thailand on their resilience to disruptions. Among those who suffered severely, one company still thrived with ease – it even managed to extend its assistance to the community and the government authorities. To unravel the story behind this successful case, ADPC contacted The Siam Cement Public Company Limited, also widely known as SCG.

**S**CG was established in 1913 with the initial focus on the cement industry. Over the past hundred years, the company has scaled up extensively and expanded its focus into three main businesses: SCG Cement-Building Materials, SCG Paper, and SCG Chemicals.

Affected by the political unrest in 2010, the company decided to embark on a business continuity management project with assistance from foreign consultants. SCG's business continuity management team is comprised of people from different business units, trained by business continuity management experts. Suriya Paripunna, Corporate Business Continuity Management Manager at SCG, explains that these representatives are those in senior positions or those who deeply understand the operational process and supply chain.



“Business continuity planning is all about business operations,” Paripunna emphasizes.

In a normal situation, SCG’s business continuity management team holds bi-monthly meetings to discuss plans. But during crises, they form a war room or command center, to make sure the plans are carried out correctly. To ensure the sustainability of the business continuity management project amidst all the organizational changes, the company is now working towards certification under ISO22301, the international business continuity management standard. Currently, eight companies under SCG Paper have been certified.

### For everyone’s benefit

SCG’s business continuity management project has achieved a high level of participation and attention among staff and partners. When asked for the reason for such attentiveness, Apichai Intakaew, Director of Corporate IT & BCM office of SCG, replies it is to prove that business continuity management is for their own benefit, to secure their livelihood and businesses. The majority of the staff and partners seem convinced by the successful management during the flood in 2011.

Engaging staff through communication is another effective tactic, especially during crises. Additionally, to drive the project forward, pressure from top level management is required, such as regularly calling for reports work. Trainings are also essential: Newcomers are informed about the company’s business continuity management project at their first exposure to the company: the *Ready Together* orientation.

### Is the gain worth the pain?

To strengthen its supply chain, SCG actively encourages their main

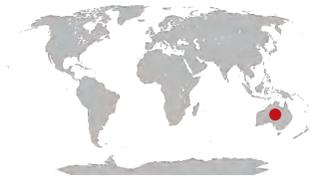
suppliers to develop a business continuity plan or a similar document. These encouragements involve trainings as well as hands-on -consultations. As to what extent SCG would push, Paripunna says it depends on business relation and business necessity. Having dual suppliers can be another option.

Seeing the scale of SCG’s business continuity management project, it had to be asked whether the gain is worth the pain. The two business continuity management practitioners explain that most of the investment in the project actually goes towards improving business operations, not the business continuity management system itself. Business continuity management enhances day-to-day business, making it more flexible. Additionally, it minimizes the cost of damage if disruptions were to take place. According to the statistics, the cost of prevention in relation to the cost of damage is 1:7.

When it comes to SMEs’ business continuity management, Intakaew and Paripunna find it would be efficient if SMEs would form clusters and benefit from resource pooling. Regarding business continuity management promotion, they agree that incentives from public sector could be a good stimulation – nevertheless, they also note that the government should be selective, focusing firstly on the most critical industry sectors. Aside from financial incentives, the government can also support the private sector, especially SMEs, by improving the resilience of public infrastructure, Intakaew and Paripunna state. ■



Interview made by Ms. Hathaipat Cheechern, ADPC.



# Australia

## Small businesses in Australia and their capacity needs under a changing climate.

**C**LIMATE CHANGE INTRODUCES A VARIETY OF HAZARDS INCLUDING bushfires, droughts, flooding, storm surges and rising sea levels that will likely affect the supply and production chains of Australian small and medium enterprises (SMEs). These affects consist of business interruptions, increased investment or insurance costs, consequences on employment, property damage, and declining financial measures (value, return and growth).

### Building resilience to business continuity

Small businesses comprise 96 percent of all private businesses in Australia and play a significant role within social systems. These businesses provide employment, goods and services, and tax revenue for communities. Small businesses make a significant contribution to the Australian economy.

Existing characteristics of SMEs and the environments in which they operate are critical to enhancing the sector's capacity to adapt to climate change. These characteristics include: relationships between SMEs and support organizations; relationships within support organizations; the capacity of SMEs to use their resources to build resilience into business continuity; SMEs' perceptions of climate risks; and power struggles between support organizations. Unfavourable combinations of these characteristics had the potential to constrain the choices available to SMEs in responding to climate change and related threats.

For example, many non-government organizations (NGOs) are dependent on government grants to offer support programs, such as business advice. The tightening of government funding often hampered the extent of services that could be offered to SMEs. In addition, government agencies funding climate risk reduction programs such as the Federal Government's Attorney General's Department (e.g., clean-up and recovery grants) have limited formal mechanisms for monitoring and evaluating those initiatives, and this reduces the opportunity to improve future programs.

### Diversifying markets and addressing drivers of vulnerability

Many of these characteristics largely occur on an external level to the SMEs themselves and were found to constrain the ability of small businesses to adapt to the challenges posed by climate change. Such contextual characteristics have been largely overlooked in formal government-led programs that aim to build business resilience. These programs have tended to be reactive, focusing on business recovery during and after disasters rather than on altering the conditions that generated vulnerability of small businesses through planned prevention. The capacity of SMEs to use their resources to build resilience into business continuity, together with their perceptions of climate risks, are also important considerations.

These are the key findings of a recent study conducted by the Institute for Sustainable Futures at the University of Technology, Sydney (UTS). The study, funded through the National Climate Change and Adaptation Research Facility (NCCARF), examined the adaptation capacity needs of the SME sector in Australia. It found that limited knowledge exists both in Australia and internationally on the capacity needs of small businesses to adapt to climate change.

Planned interventions to moderate harm and adapt to expected impacts, for example through adopting business continuity plans, diversifying markets, introducing policy to support vulnerability reduction of SMEs to climate change offers one such way to deal with this challenge. A significant adaptation strategy that emerged from the results of the UTS study was that diversification of markets (i.e., through products/services, customer market, geographical areas) was seen by SMEs as one form of an important adaptation strategy to future climate risks. The success of future efforts to build the capacity of SMEs to adapt to climate change will depend on how they address the processes that limit the ability of SMEs to pursue adaptive choices that they value. ■



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# Bangladesh

**Public private partnership in urban disaster management: The Rana Plaza tragedy.** On 24 April 2013, Rana Plaza, an eight-floor building complex with several ready-made garments factories, collapsed in Dhaka. This is the biggest human-made disaster in Bangladesh that claimed 1,127 lives and left over 2,000 workers seriously injured.

**T**HE TRAGEDY CAPTURED GLOBAL ATTENTION WITH COVERAGE ROUTINELY detailing the horrific working conditions employees were forced to endure. Inspectors were easily subverted by corruption. The working conditions and building codes were far from passable. As a result of this negligence, the nation suffered from a collective trauma that led to question the country's ability to manage a disaster of such magnitude.

The Rana Plaza tragedy exposed two sets of issues that relate to human-made urban disasters in Bangladesh: corrupted and inefficient public offices that are responsible for providing public safety, regulatory compliance, and urban planning; and lack of public-private partnership that ensures effective disaster mitigation, preparedness, and management regimes.

The recurring tragedies show that Bangladesh has yet to take strong measures to ensure better disaster mitigation regime by curtailing corruption in the public offices and by strengthening its engagement with the private sector – also in terms of technical, financial, and emergency support.

In addition, a well-structured public-private partnership is required to undertake mass awareness raising campaigns and to establish a large pool of efficient rescue volunteers. This partnership would help in improving the working conditions, subvert corruption, and facilitate competent urban planning required for disaster risks mitigation.

### Good decisions, lagging implementation

The Government of Bangladesh has introduced several policy instruments to facilitate the private sector engagement to establish a well-encompassing disaster management framework. The National Disaster Management Plan (NDMP)

provides a comprehensive approach to disaster management with a strong emphasis on equitable and sustainable participation of all stakeholders including the private sector.

Bangladesh was the first among the South Asian countries to think about a Disaster Management Act (DMA) in the mid-1990s. Ironically, it took more than 20 years to get the law enacted in 2012. Many countries like India and Sri Lanka, which took Bangladesh as an example of disaster management in the areas of natural and climate change -induced disasters, made such acts and standing orders well ahead of Bangladesh.

Despite the late enactment of the law, Bangladesh has demonstrated excellence in mitigating natural disasters. Nevertheless, the capacity to deal with human-made urban disasters has not reached a satisfactory level. The implementation of urban components from the national disaster management plan, which requires huge financial and technological resources, remains as a lagging issue.

### The impact of disasters on the private sector

The private sector in Bangladesh needs to incorporate disaster risk reduction as an integral part of their business strategy. The impact of disasters can considerably influence capital flow and foreign direct investment.

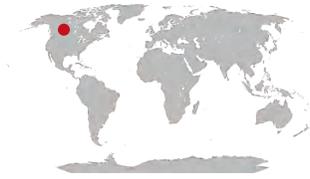
As an aftermath of the Rana Plaza tragedy, the ready-made garment exports declined 20 percent in the first half of the 2013–2014 fiscal year. According to the Bangladesh Garment Manufacturers and Exporters Association, foreign buyers cancelled orders worth USD110 million from 37 factories in 2014. The number of new ready-made garment factories also declined from 113 in fiscal year 2012–2013 to 65 in fiscal year 2013–2014.

Building resilience against catastrophes has become a matter of paramount importance not only for the ready-made garment sector, but also for the private sector as a whole. The private sector should mobilize their attention to disaster risk prevention and management as an economic and business issue.

Disaster management should be seen as a strategy to protect the growth potential of Bangladesh. As a result, a well-structured public private partnership can significantly lower the risk of disasters, accelerate recovery, and facilitate the return to normal. ■



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# Canada

**Hope for the best, prepare for the worst.** It's never fun to think about everything that could go wrong, but preparing for the worst is a sign of maturity. Fires and floods – and much worse – are a part of life, and we shrug them off at our peril.

**L**AST YEAR IN THE PHILIPPINES, I WAS GIVEN A UNIQUE opportunity to speak at the Asia-Pacific Economic Cooperation (APEC) conference on improving the disaster resilience of small and medium-sized enterprises. All too often, economists and policy-makers focus on the macro-level without realizing the economy is made of individual human beings.

I was in Manila to discuss the Canadian experience with natural disasters, the tenacity of entrepreneurs, and the need for organizations like the Canadian Federation of Independent Business to stand up for these folks when things go wrong.

### Disasters and developing countries

For the most part, Canadians have been pretty lucky when it comes to avoiding large-scale catastrophes. The 2003 SARS outbreak and the 1998 ice storm were tragedies to anyone who lost loved ones, but those events pale in comparison to the 2010 earthquake in Haiti that killed over 300,000 people, or the 2004 Indian Ocean Tsunami that took almost as many lives.

Developing countries are not the only ones vulnerable to natural disasters. Hurricane Katrina in 2005, and the combination of an earthquake and a tsunami in Japan in 2011, created chaos in advanced, industrialized nations. I also learned a great deal about the effects of the earthquake near Christchurch. To this day, a massive portion of the central business district is in ruins with hundreds of commercial building owners facing orders not to rebuild in the area.

### Effects of disasters on small businesses

One thing I have learned over the years is that Canadian entrepreneurs are incredibly resilient in the face of

adversity. They're smart, practical people who 'roll with the punches'. But toughness and determination will only take you so far. Giant corporations may have the human and financial resources to withstand such once-in-a-lifetime events, but small businesses – the backbone of the Canadian economy – can be easily crippled. According to information from the Hartford Financial Services Group, 43 percent of businesses never reopen when a major crisis hits, and an additional 29 percent close within two years.

The good news is that the Canadian Federation of Independent Business has created some Basic Emergency Management Guidelines for small businesses. This is a good place to get started in preparing for the worst. For the most part, disaster planning is simple and relies on common sense: assigning staff to an emergency management committee, maintaining an up-to-date listing of emergency contacts and telephone numbers, and setting up – and practicing – an evacuation plan. Business owners should also:

- Install or upgrade fire safety equipment and move flammable materials away from fire sources;
- Find better places to store computers and important documents than the basement – they can flood easily;
- Make sure any computers have adequate antivirus and firewall software, and keep the backups off-site; and
- Review the insurance coverage – does it cover business interruption if something goes wrong?

In emergency situations, the Canadian Federation of Independent Business works hard to lobby banks and governments for support and flexibility regarding payments and regulations. After a tornado in Goderich, Ontario, one of our members told us that a tax auditor rejected her auto expenses, not realizing that her car was used to transport goods from her damaged store to a nearby warehouse. That kind of help we just don't need.

The demands on the time of entrepreneurs are massive. Finding some time to focus on a firm's readiness for a disaster though, can be an important investment in your business's future. ■



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# Indonesia

**Living on the Ring of Fire.** Being located on the *Ring of Fire* – an area in the Asia-Pacific which lays the scene for approximately 90 percent of the world's earthquakes – the majority of Indonesian SMEs are likely to be affected by disasters during the span of their operations.

**A** PART FROM EARTHQUAKES, THE HAZARDS THREATENING Indonesia include volcanic eruptions, flooding, hurricanes, droughts, fires, and terrorism. All of these hazards will affect people, businesses, and the economy. The majority of small and medium enterprises (SMEs) in Indonesia will be affected at some point and, as a result, won't be able to continue generate income.

Indonesian disaster management, which is based on a law number 24 ratified in 2007, defines the rights and obligations of all stakeholders in protecting the citizens from disasters. The government carries the responsibility for disaster management with active participation from the public and business institutions. The law aims to turn a response model into disaster risk reduction through strengthened institutions, adequate funding, and the integration of disaster management into development plans. Community protection against catastrophic disasters takes place at all stages through integrated planning and implementation.

### Small businesses in focus

Disasters have a huge impact on the Indonesian economy, especially to SMEs. 99.99 percent of the 56.54 million enterprises in Indonesia are SMEs, and most of them are micro-scale. SMEs contribute to approximately 56 percent of the overall GDP (USD825.8 billion) and employ more than 97 percent of the workforce, most of which is unskilled labor. The majority of micro-enterprise businesses deal with agriculture and trade, and are characterized as proprietorship enterprises. SMEs in both sectors are highly vulnerable to disasters.

The Asia-Pacific Economic Cooperation (APEC) forum strives to protect the SMEs in the *Ring of Fire* -region. During the APEC Small and Medium Enterprises Ministerial Meeting in September 2013, a joint ministerial statement

declared that enhancing global competitiveness of SMEs is an important goal on the way towards a resilient Asia-Pacific region. This reaffirms the region's commitment to assist SMEs in establishing resilient supply chains that facilitate trade and investment. APEC wants to provide the region's SMEs with a platform to enhance the adoption of business continuity plans (BCP) and secure their global supply chains.

### Improving disaster resilience at all levels

The Indonesian government established the Agency for Disaster Management to work on improving the country's disaster resilience at the national, regional, and local levels. Implementation of disaster relief beyond the emergency response stage in the country follows the pattern of national disaster management in general. In the meanwhile, Indonesia does not have a system for improving the SMEs' preparedness to natural hazards. However, state-owned banks have a loan payment deferral policy that is an effort by the government to provide financial aid to businesses after disasters – such as the eruption of Mount Merapi in Central Java a few years ago.

A training for trainers on business continuity planning was organized and facilitated in Jakarta by the APEC Secretariat in April 2014. More than 25 officials from regional government offices were trained to explain how enterprises can ensure the continuity of their businesses in the face of disaster. ■



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**BCPs make stronger and profitable SMEs.**

Is it worth introducing a business continuity plan (BCP) in your company? Or should money only be spent when a disaster strikes? To sell the BCP concept to presidents of SMEs, its benefits to current business and operations need to be shown clearly.

**A** BCP SURVEY ON 100 JAPANESE SMEs WAS CONDUCTED BY Tohoku University in October 2013. Most of the surveyed companies participated in BCP workshops and about 70 percent of them implemented BCP. This is a very high ratio compared to the overall number of SMEs in Japan. 38 percent of them embedded BCP, however 32 percent did partially or did not at all embed BCP. Implementing a BCP does not always lead to embedding it.

The survey found that president's instruction is a strong reason related with BCP implementation – customer request for business continuity plan does not seem to affect its implementation. This means that a BCP is most often implemented top-down. The three key factors identified to encourage presidents to introduce a BCP, include: concerns on the company's insufficient preparedness level; responsibility not to bankrupt the company when he or she is a president; and gaining market appeal or advantage for the company through BCP.

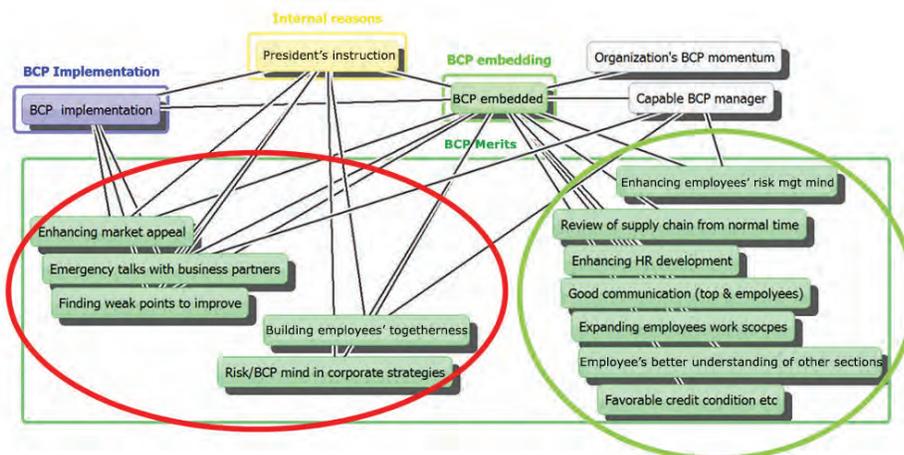
**Organizational momentum for a BCP**

The survey result shows that BCP implementation and BCP embedding are two different stages. BCP embedding is not done only top down approach. The key factors that foster the embedding of a BCP include a capable manager, an organizational BCP momentum, and a wider perception of the benefits of BCP. However, the BCP embedding not only requires a capable leader, but also a group of motivated employees. In the survey, the characteristics of group of motivated employees are stated as organizational BCP momentum. These characteristics are descriptive to an organization where business continuity plan needs are internally shared, relevant sections widely participate, business continuity plan is made to fit the company's size, and do-it-yourself BCP is maintained.

Companies that embed BCP perceive its benefits in wider fields of the company's activities than the companies only implementing a BCP. The embedding stage brings more and wider benefits such as a better communication between the president and the employees, and the employees' better understanding of others' work. It also helps expand the employees' scope of work and their professional development.

Embedding BCP helps the employees to understand the core lifeline of business and what causes life or death crisis to the company. The employees' increased capability enhances knowledge and skills and – more importantly risk minds and organizational togetherness.

BCP activities start building preparedness for future disasters and accidents, and it will not stop there. BCP has been built in day-to-day operations, as BCP benefits indicate. Those moves make SMEs stronger and profitable. Experienced BCP consultants agree to this view and report successful cases in which BCP has brought new customers and increased sales for the companies. Make your company resilient through BCP and it will be worth it. ■



**Figure 1.** The benefits of business continuity planning listed in the red circle are related to both BCP implementation and embedding. The benefits in the green circle are related only to BCP embedding.



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# Maldives

**Developing a public-private partnership model for disaster management planning.** Due to its fragile geographical makeup, the Maldives is becoming more vulnerable to natural hazards, making disaster preparedness a national priority.

**H**AVING ONLY RECENTLY GRADUATED FROM THE LIST OF THE LEAST developed countries in the world, the Maldives is a small nation with limited resources. Considering the fragile economy and lack of technical expertise, innovative and sustainable approaches have to be developed in order for the country to improve its preparedness to disasters.

A small island nation, the Maldives is composed of 26 atolls consisting of 1,192 islands of which 192 are inhabited by a total population of 328,536, and 200 islands are developed as tourist resorts. Since the 1970s when the tourism sector started as largely personal business ventures, it has grown to become a development partner contributing significantly to the national economy and local communities through social responsibility initiatives. The government has recognized that public private partnerships (PPP) can be a huge resource for socio-economic development. It provides the private sector in the Maldives a platform for participation in all aspects of socio-economic development while reducing government involvement in the business sector. It strengthens the role of government as an enabling agent for economic growth. It also decentralizes the development process leading to a more effective and efficient system.

### Building resilience in the tourism sector

Given the understanding and need for support required by the tourism industry to build resilience and capacity to respond to disasters, the National Disaster Management Centre (NDMC) with its mandate to ensure effective disaster preparedness and response in all sectors, has collaborated with Maldives National Defense Force to enhance emergency preparedness and response in resorts.

The pilot program in the Gili-Lankanfushi Resort in 2014 facilitated a process for the resort management to formulate a disaster preparedness plan and response mechanism including standard operating procedures. It also included

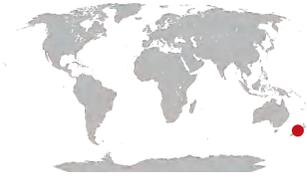


capacity building of resort staff and management in firefighting and maritime safety. The program ultimately culminated in a drill during which local emergency and resort personnel implemented the response mechanisms they had developed. The program was well received by resort management, and several other resorts have expressed their interest in running the program. The success of the Gili-Lankanfushi Resort as a pilot resort resilience program, other resorts have shown interest to adapt and replicate such initiatives using the existing capacities of NDMC.

As a reciprocation to the partnership with NDMC, the resort management makes contributions to increase disaster preparedness at the national and local level. This increases their credibility as a development partner as well as enables them to help at-risk communities and safeguard community interests. For the communities, receiving something as simple as a pump to use during floods goes a long way in enabling them to respond to disasters and mitigate their losses. ■



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# New Zealand

## Taking care of the social capital.

The recent sequence of earthquakes in Canterbury, New Zealand caused extensive damage to people's lives, homes and businesses. Yet, some organizations were able to endure, even thrive, throughout and after the events.

**O**RGANIZATIONS, PARTICULARLY THOSE WITHIN CRITICAL industries, faced enormous pressure to continue operating while simultaneously experiencing major business disruptions that threatened their survival. A study conducted by *Resilient Organizations* in partnership with the University of Canterbury found that the ingredients for such success are not only being prepared through planning, but also organizations minding their social capital and utilizing their networks.

Organizations that had prepared business continuity plans prior to the first earthquake were able to use them to take immediate action during the disasters and continue operations. They knew how to take care of their people, keep communication channels open, and what actions to take. Those that had no formal plan, or whose plans were weak, experienced a significant learning curve, which served them well when more devastating earthquakes occurred.

They survived based on their utilisation of networks, good relationships, cooperation along the supply chain, and the way they provided staff care. These organizations contradicted the myth that a lack of formal planning will result in business failure. Plan or no plan, it was the relationships between people and the resilience of organizational members that allowed the organization to succeed through such disruption. In a truly resilient style, these organizations learned from their experiences and came out stronger and more resourceful for when the next disaster struck.

BCPs are a well established strategy in an organization's risk management process. They are an integral component

of developing a resilient organization – one that is able to recover and recuperate quickly from a disaster and resume normal functioning. However, business continuity planning is just one part of creating a resilient organization with other aspects relating to leadership and culture of equal importance.

## People power

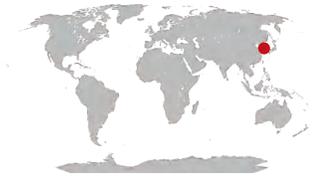
Areas that were not well covered in these organizations' plans relate to the consideration of human capital. The study highlighted the importance of considering employee well-being in designing a business continuity plan, as well as choosing business continuity planning leaders who have good levels of personal resilience and high emotional intelligence. Such considerations are often neglected because of the complexity that planning for human capital demands.

After all, planning how to manage people, especially during a disaster, is a lot harder than planning for the more constant elements of one's business such as equipment. However, looking after employees – an organization's most important asset – is essential for supporting individual resilience through disaster and helping people stay with the organization when they may otherwise leave. Furthermore, having resilient business continuity planning leaders who can stay calm during high-stress situations, and who can monitor their own emotions to keep everyone else calm will be better at making quick decisions that direct people and resources to actions that promote business continuity. Difficult as it may be, the people side of business during disaster is the number one determinant of success and was of greatest concern following the earthquakes. ■

**“ It's a pretty simple equation. If you take care of your people, they will take care of you. ”**



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# South Korea

## Business continuity management in South Korea.

In South Korea, natural disasters like earthquakes and flooding have had little affect on the public and private sector.

**T**HE HIGHEST MAGNITUDE EARTHQUAKE IN SOUTH KOREA measured 5.0 on the Richter scale in 1978. The earthquake took place at Hong-sung, a small town 150 kilometers from Seoul and damaged over 100 small buildings and houses. Thankfully, there were no deaths. Since 1990, floods have rarely affected urban areas due to improved drainage. When wide-range flooding does occur, only rural areas are affected, but this is uncommon. Most business continuity management experts in South Korea agree that torrential rain in urban areas is the only threat.

In 2013, heavy rains pounded Seoul and some roads and river walks were closed. Roads near Kangnam subway station in the Kangnam district were flooded due to the rain accumulating to over 145.5 millimeters. The heavy rainfall incapacitated the capability of city drainage. Some buildings that had electrical installments at basement levels experienced blackouts for over a month after the flooding. Similar heavy rains happened in 2011. Some global warming experts in South Korea agree that the torrential rains were strongly related to climate change.

### Indirect damages from the Japanese Earthquake 2011

In 2011, the Japanese Earthquake did not damage South Korea directly. Some Korean companies were affected because of their dependence on supplies exported from Japanese companies. During the initial stages of the earthquake, Korean companies did not realize that their supply chain might suffer as a consequence. They realized there were problems after the shortage of supplies was internally reported.

In 2013, the tension level rose between North and South Korea. Global companies worked tirelessly to check that their South Korean suppliers could continue to provide key supplies and that they had a business continuity plan in place to respond to the war threat. They sent business

continuity management questionnaires and required the companies to complete them.

### BCM drivers in South Korea

The private sector in South Korea started business continuity management in 2007. The key drivers are man-made risks such as fire, conflicts, terrorism as well as supply chain and safety incidents. Leading companies in South Korea that have global plants, introduced business continuity management to provide security to their products and services without premise limitation. Since 2012, global companies outside South Korea have asked for Korean suppliers to install business continuity management in the form of audits, questionnaires, agreements and contracts.

As of May 2014, over 15 commercial organizations in South Korea have adopted business continuity management and officially certified their system according to the global business continuity management standards. Government organizations and government-owned companies such as the National Computing and Information Resources Administration, and Korea Southern Power acquired global certification. A major local authority has adopted the UK's Civil Contingency Act and the British authorities' business continuity management practices. They decided to adopt business continuity management to respond to disruptive incidents and ensure that they are simultaneously able to recover their public services within the agreed timeframe and at an acceptable level of service.

Currently, business continuity management in the South Korean private sector is rapidly expanding into big companies. In the future, it will also spread into small and medium-sized companies in the country. ■



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# United States

**Free business continuity plan program demonstrates the value of partnerships.** Disaster research in the United States has shown that up to 40 percent of businesses never re-open following a natural or human-caused disaster. And four out of five businesses will fail after the loss of a key executive.

Yet, one-third of businesses surveyed by the American Red Cross reported having no business continuity plan (BCP). However, 82 percent of businesses agreed that, “if someone could make it easy for me to be prepared, I’d do it”.

Business owners understand the need for being prepared and ready for disasters, but often lack the knowledge and tools to conduct a BCP. To a small or medium-sized enterprise (SME), the process can be seen as cumbersome and complicated. In 2008, the American Red Cross launched its *Ready Rating*<sup>TM</sup> program, the first emergency readiness program of its kind. *Ready Rating* is a free, web-based program that helps SMEs conduct a BCP. Members complete a 123-point self-assessment of their current level of preparedness to reveal areas for improvement.

Created by the St. Louis Area Chapter, *Ready Rating* was originally designed as a marketing tool that would help open doors and facilitate conversation within SMEs about how to better prepare for emergencies. However, the program became much more than that. In 2009, the St. Louis Area Chapter was joined by American Red Cross chapters in eight U.S. cities for a two-year pilot.

### A proven success

Anheuser Busch, *Ready Rating* national founding sponsor, provided financial support for nine pilot chapters to demonstrate that the *Ready Rating* program helped SMEs improve their levels of preparedness. Participating SMEs in the pilot program demonstrated an average *Ready Rating* assessment score improvement of 14 percent the first year,

and a dramatic 50 percent in the second year.

Following this success, the *Ready Rating* program was transitioned to American Red Cross national headquarters, and with the addition of Sam’s Club as a national sponsor, several enhancements to the *Ready Rating* website and tools were added to the program. These enhancements include a streamlined process for new members to sign up and begin using the program, an update of the assessment to better align with the U.S. Department of Homeland Security’s private sector preparedness guidelines, and increased capacity to make the *Ready Rating* program available nationwide.

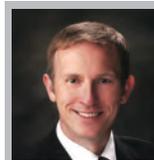
### The Ready Rating System

The 123-point *Ready Rating* assessment tool and program guide are the result of a comprehensive review of preparedness recommendations conducted by the American Red Cross National Office of Preparedness, Health and Safety Services, the national *Ready Rating* team, and the American Red Cross Scientific Advisory Council. All *Ready Rating* program steps and recommendations are grounded in scientific research, best practices and expert recommendations from respected disaster and business continuity professionals.

*Ready Rating* demonstrates the importance of cooperation among government agencies, non-government entities, and the private sector in building resilient SMEs. National sponsors, such as the current sponsor Servepro, are key to building and sustaining a viable BCP program for SMEs. To date, the *Ready Rating* program has helped thousands of American businesses plan for disasters. Seventy-five percent of members have updated their BCPs due to *Ready Rating*, and members increased their 123 assessment scores by as much as 42 percent.

*Ready Rating* has been recognized by preparedness experts as an easy to understand solution for helping SMEs take the steps to become prepared to respond to and successfully withstand a disaster and other emergencies. ■

For more information about *Ready Rating*, log on to [[www.readyrating.org](http://www.readyrating.org)].



*Dr. Scott Somers (scott.somers@me.com) is a member of the American Red Cross Scientific Advisory Council and has been involved with the continuous development of the Ready Rating System.*

## Joint efforts to improve private sector preparedness in the Asia-Pacific

The Asia-Pacific region experiences over 70 percent of the world's natural disasters. Such a volatile region is home to 2.7 billion people, around 40 percent of the world's population. Building resilience to disasters is not only critical for sustainable economy development, but is essential to the lives and livelihoods of the billions living there.

**I**N 2005, ASIA-PACIFIC ECONOMIC Cooperation (APEC) formed a group specifically to coordinate and facilitate emergency preparedness and disaster risk reduction within its member economies, in direct response to the 2004 Indian Ocean Tsunami that impacted much of Thailand, Indonesia and other parts of the world. The APEC Emergency Preparedness Working Group (EPWG) brings together government officials from the region's various emergency services departments to build its members' capacity to better mitigate, prepare for, respond to, and recover from emergencies and natural disasters.

In August 2011, after the Great North-Eastern Japan Earthquake and Tsunami, a workshop for government officials and businesses to strengthen private sector preparedness during emergencies was conducted in Sendai, Japan. Participants from both the public and private sectors shared case studies and specific methods, practices and tools for business continuity planning in times of disaster. In 2012, through crosscutting collaboration with the

**On the brink of disaster** *Normally a center for economic activity, the Chao Phraya River Basin was flooded in 2011 inundating parts of Bangkok.*

APEC Small and Medium Enterprises Working Group (SMEWG), a multi-year project was carried out to build guidelines for business continuity planning to boost public private partnership.

### Systems for suppliers to mitigate disaster risk

APEC economies are simultaneously benchmarking business continuity plans in the information and communications technology, logistics and auto parts industry sectors. The goal is to make it easier for suppliers to adopt effective systems to mitigate disaster risk and avert disruptions similar to the massive flooding in Thailand that resulted in around USD50 billion in losses. The flooding occurred just six months after the disaster in Japan that halted industrial facilities, especially among water-logged producers of electronics components. The loss



## Regional Outlook

translated into a 2.4 percent fall in Japan's manufacturing production index between October 2011 and January 2012. The incentives for reducing industry shocks like these are prompting deeper regional cooperation to prepare for future disasters.

The movement caught regional and international attention on APEC's efforts for implementing public private partnership on disaster reduction. At the 2013 United Nations International Strategy for Disaster Reduction (UNISDR) Asia Partner (IAP) meeting, APEC EPWG had been invited to share APEC's experience as a best practice model. Now, APEC has conducted training workshops in the Philippines, Singapore, Taipei, Thailand and Vietnam to empower both governmental officials and local businesses through activities such as training trainers, experts meetings and high-level policy dialogue.

### Advocating supply chain resilience

Other than EPWG and SMEWG's efforts, APEC Transportation Working Group (TPTWG) advocates global supply chain resilience to cope with interruptions caused by natural disasters. Regional collaboration is a key element to success when talking about enhancing awareness in the private sector. Small and medium enterprises must understand possible business interruptions caused by natural disasters. A guidebook only acts as an introduction to business owners and is far away from achieving regional capacity building. More needs to be done.

ADPC has hosted a series of workshops related to business continuity planning in collaboration with APEC and other regional organizations to promote trans-boundary synergy and private sector



involvement. Current APEC efforts to improve disaster resilience for SMEs is best practice to provide needs-based capacity building. SMEWG offers the ideal vehicle to disseminate EPWG's knowledge to the target audience.

### Continuous work towards a safer working environment

In 2014, EPWG, SMEG and TPTWG continue to collaborate and deliver more activities and outcomes. Many projects have been directed with guidance from the APEC forum. Taipei has conducted the *APEC High Level Policy Dialogue on Resilient SMEs for Better Global Supply Chains*, an SMEWG project. The United States has carried out a workshop on improving global supply chain resilience, a TPTWG project in Christchurch. Thailand

hosts a seminar on enhancing regional supply chain resilience to disasters in APEC in June 2014.

All of these activities clearly reflect APEC's leading position in ensuring a safer trading environment and facilitating sustainable growth. Already 21 member economies have learned a lot from back-to-back natural disasters that interrupted regional and global business connectivity. Though future disasters are for sure to come, APEC will summon regional capacity and capacity building techniques to make businesses ready to rapidly recover.

APEC's 2014 theme, *'Shaping the Future through Asia-Pacific Partnership'*, is not just about the pursuit of greater prosperity, but also safeguarding it for times when it is needed most. In 2015, the Hyogo Framework for Action 2 will be announced. The outcomes by APEC EPWG and ADPC are considered best practices of public-private partnership on disaster risk reduction and are worthy of global attention to help build a safer future. ■



Dr. Li Wei-Sen (li.weisen@ncdr.net.gov) serves as Co-Chair for APEC Emergency Preparedness Working Group and Secretary General at National Science and Technology Center for Disaster Risk Reduction, Chinese Taipei.

# Urgent need for governments to promote business continuity planning

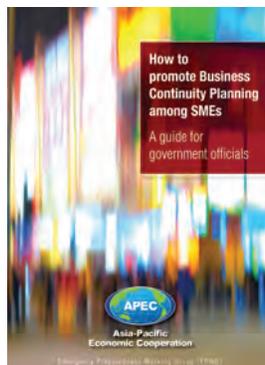
In a small grocery shop in Bangkok, an owner surveys the damage as flood waters rise. A few doors down, the shelves of a similar shop are empty: Moving items to an alternate storage area has saved the stock. Business continuity plans can be this simple.

**G**OVERNMENTS AND SMEs CAN work together to make businesses more resilient for the sake of their communities and for the prosperity of the region as a whole. Surveys show that only 13 percent of small and medium enterprises (SMEs) in the Asia-Pacific region have business continuity plans in place compared with 47 percent of large businesses. These statistics demonstrate that SMEs remain extremely vulnerable to the impact of natural disasters on their business operations, leading to financial losses and bankruptcies, disrupted supply chains and widespread socio-economic stress. Governments suffer from SME failure with the loss of essential goods and services, higher unemployment, plunging productivity and low morale.

While the business continuity planning concept is new to many governments, some are beginning to realize that every dollar spent on enhancing SMEs' business continuity planning uptake can save them tremendously in post-disaster outlays.

### Challenges for officials

Government officials face challenges when attempting to promote and facilitate business continuity planning use by SMEs. To identify



*The guidebook for business continuity planning among SMEs will be published in August 2014.*

these challenges and consider ways to overcome them, the Australian Government held a series of workshops for officials and business continuity planning experts from 11 Asia-Pacific Economic Cooperation (APEC) economies.

The officials identified six key barriers to the effective promotion of business continuity planning use, including a misunderstanding of their value; lacking clear government policies for the use of business continuity plans; lacking financial resources and technical expertise to promote their use; the difficulty in communicating the business continuity planning message to SMEs in rural or remote areas; the failure to form public private partnerships to bolster promotion efforts; and apathy from SMEs who fail to understand the need for business continuity plans

until disaster strikes.

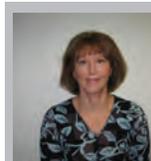
### Guide to promote business continuity plans

After the workshops, two Australian government departments created a handbook offering options for overcoming the above-listed barriers, based on real-life case studies in five economies.

The case studies show that promoting and facilitating business continuity planning uptake can be inexpensive. National programs can include websites or iPad-applications with business continuity planning systems and templates so that SMEs can tailor plans based on their industry.

The case studies demonstrate that industry associations, provincial councils and business continuity planning experts from large corporations can all be enlisted to foster a culture of business continuity planning use among SMEs. Also, governments can use new technologies to collect and disseminate data on potential hazards and their likely impact, and warn SMEs in advance using Google's alert system.

The guidebook, produced by the APEC Branch of the Australian Department of Foreign Affairs and Trade in conjunction with Emergency Management Australia, will be published in August 2014. ■



*Ms. Julie McDonald (Julie.McDonald@dfat.gov.au) serves as Executive Officer of the APEC Branch of the Australian Department of Foreign Affairs and Trade (DFAT).*

## New partnerships for disaster risk management

“Economic losses from disasters are out of control and can only be reduced in partnership with the private sector.” These words by Ban Ki-moon, Secretary of the United Nations, highlight that in a world of population growth, rapid urbanisation and climate change, there is a need for the private and public sectors to build strong partnerships for disaster risk management. Looking at the challenges ahead the private sector is critical, being an exposed actor as well as a potential pioneer for innovative disaster risk management solutions.

**T**HE BUSINESS CASE FOR STRONGER disaster risk management is manifold: Disaster risk management reduces uncertainty, strengthens confidence, cuts costs and creates value for businesses. There is a growing recognition of the importance and value of disaster risk management that needs a more systematic approach to integrate measures in business processes to ensure long-term competitiveness and sustainability.

At the same time, business depends on the capacity of the public sector to provide resilient infrastructure and risk management systems, which underpin competitive and sustainable economies. Budgetary impact of responding to and recovering from natural disasters could potentially be significantly reduced through carefully considered and directed investments in integrated and innovative disaster risk management solutions. Governments, civil society and the private sector need to strengthen their partnerships.

Public private partnerships for fire prevention and safety in the garment industry of Bangladesh illustrates how different stakeholders can work together to achieve common objectives.

### Fire prevention and safety in the garment industry – Case study of Bangladesh

The garment industry in Bangladesh has come under international criticism following a number of serious accidents and difficult labor and fire safety conditions in factories. In November 2012, more than 110 people were killed in a fire at a textile factory in Ashulia. A year ago, on 24 April 2013, more than 1,100 people died and 1,700 were injured in the collapse of a tower factory in Savar. Both disasters could have been avoided if the factory owners had complied with the safety regulations. Dhaka is lacking a decentralized operating network of fire stations. Poor infrastructure hinders rapid response in case of emergencies and fire prevention, and safety measures are not being addressed adequately.



Factories are poorly equipped with hydrants and fire extinguishers, and the water hoses are mostly in worn out condition. Fire alarms are faulty and first responders in the factories are poorly trained or non-existent.

Bringing the garment industry and the Bangladesh Fire Service together was seen as a way out of this situation. With financial support from the German Federal Ministry of Economic Cooperation and Development (BMZ), GIZ (Deutsche Gesellschaft für Internationale Zusammenarbeit) has initiated a



Photo © GIZ / Anne Kathrin Mohr

close exchange between public and private Bangladesh stakeholders with German fire brigades and specialized German companies to jointly and more effectively tackle the challenge of fire prevention and safety in the Bangladesh garment industry.

### **Integrated fire safety and response units as key priorities**

The training of fire inspectors as well as the development and implementation of decentralized fire safety and response units, located

nearby the garment production centres are now deemed key priorities to ensure an optimal protection of industrial enterprises while also benefiting the whole community. Such decentralized fire safety and response units will serve as an awareness and resource centre for fire prevention and safety measures, and rescue personnel of the factories affected by fire or building collapse. They will also delete incipient fires and prevent the spillover of flames on adjacent buildings, and act as first responders to incidents and disasters in the defined target area.

### **Garment industry under scrutiny**

*The garment industry in Bangladesh has come under international criticism following a number of serious accidents and difficult labor and fire safety conditions in factories.*

The fire safety and response units will work under the command of the Bangladesh Fire Service and Civil Defence Directorate, but will include fire safety focal points of the factories and trained volunteers from the surrounding community.

A suitable and economically viable concept will be developed and implemented under a public private partnership program, including the Bangladesh Fire Service and Civil Defence Directorate, the local garment industry and international wholesalers. The public-private partnership program will be facilitated by the *Global Initiative on Disaster Risk Management (GIDRM)*, which is being coordinated by GIZ. The aim of the initiative is to facilitate mutual learning of regional and German experts from the public and the private sector, academia and civil society, and to pilot innovative disaster risk management solutions across regions. ■



*Mr. Stephan Huppertz serves as Disaster Risk Management Expert at GIZ and Regional Coordinator for the Global Initiative on Disaster Risk Management in Asia, based in Bangkok, Thailand.*

### Preparing SMEs for disasters

In the wake of Typhoon Haiyan, small and medium-sized businesses in the Philippines from farms to fisheries were impacted by the devastation. Amid the wreckage of flooded crops and broken boats, small business owners struggled to rebuild their livelihoods.

**“T**YPHOON HAIYAN HIT many micro, small and medium-sized businesses (SMEs) hard, seriously affecting lives, livelihoods and communities,” said Ray Chambers, the United Nations Special Envoy for Financing the Health Millennium Development Goals and for Malaria. “In the Philippines, SMEs provide a living for 65 percent of the labor force, and as such, they play an essential role in the region’s recovery.”

In the aftermath of Typhoon Haiyan, SMEs suffered from delays in operation, losses in inventories and decline in sales. Overall damages to the economy are estimated to be around 15 percent of the Philippines’ GDP in 2013.

Unfortunately, this story is all too familiar in the Asia-Pacific region, which accounts for 70 percent of global natural disasters, based on United Nations 2010 data. Small and medium-sized enterprises (SMEs) represent the backbone of the region’s economy, making up 90 percent of all businesses operating in the Asia-Pacific region.

“Back in 2011, large-scale emergencies in the region from the earthquake and tsunami in Japan to the floods in Thailand put the vulnerability of SMEs and

entrepreneurs into greater focus on the APEC agenda. As a result, APEC launched a multi-year project in 2011 to assist SMEs with business continuity planning to strengthen their ability to endure natural disasters,” said Dr. Wimonkan Kosumas, Chair of the APEC Small and Medium Enterprises (SME) Working Group.

#### **SMEs are more vulnerable to disasters**

Compared to large international companies, small and medium-sized businesses are more vulnerable to natural hazards due to resource, knowledge, planning and experience gaps. For example, as a result of the earthquake and tsunami that struck Japan in March 2011, 90 percent of surveyed small businesses went bankrupt due to damage to production and supply chain disruption, according to Asian Disaster Reduction Center. The 2011 floods in Thailand affected 557,637 SMEs and 2.3 million workers lost their jobs, according to the Office of Small and Medium Enterprises Promotion in Thailand.

Moreover, global supply chains were disrupted. For example, the SME manufacturer of a pearl-lustre pigment that makes car paint sparkle was temporarily shut down by the 2011 Japan earthquake and tsunami. This closure impacted

the world’s major auto companies including Toyota, Nissan, Ford, Chrysler, Volkswagen and General Motors as they scrambled to identify another supplier.

#### **SME Business Continuity Planning**

SMEs lack the capacity to cope with natural disasters due to limited resources, expertise and awareness.

“The main goal of the APEC project is to promote SMEs to establish business continuity plans (BCPs) for sustainable global supply chains,” said Johnny Yeh, Executive Director of the APEC SME Crisis Management Center in Chinese Taipei, who is overseeing the APEC project.

“This is accomplished by training related government, non-profit and private sector organizations in APEC member economies, so they, in turn can train SMEs in their respective economies,” Mr. Yeh added.

As part of the project, experts have developed a simple step-by-step APEC Business Continuity Planning Guidebook for SMEs.

“There are three stages of business continuity plans. These include pre-disaster measures, emergency response during a disaster and continuity strategies post-disaster,” explained Shinichi Okabe, Adviser from Tokio Marine & Nichido Risk Consulting, who helped write the APEC Business Continuity Planning Guidebook.

“A key element of a business continuity plan is to be able to resume disrupted operations as quickly as possible,” added Mr. Okabe. “This could involve a contingency plan to relocate operations to a safer venue.”

SMEs can develop their own business continuity plan tailored to

## Regional Outlook



their unique company needs and size and many measures can be implemented cost-effectively. The focus of business continuity planning is for all employees to be able to continue to execute their roles in emergency situations.

### Benefiting from the APEC project

Chiao Fu Group, a medium-sized manufacturer of plastic compounds, cable ties and wiring accessories with global supply chains, received counselling on how to develop a business continuity plan.

“We set up our business continuity plan with counselling from the Small and Medium Enterprise Administration in Chinese Taipei,” said CEO Frank Ni of Chiao Fu Group. “The APEC project was very helpful for us. The guidebook provided charts and tables that led us along the process of drawing up our own business continuity plan.”

As part of its business continuity planning, Chiao Fu assessed potential risks and developed recovery protocols for different

scenarios. For example, if there was a disruption in Thailand, Chiao Fu has made arrangements to immediately produce and ship from their Taichung factory in Chinese Taipei.

ADPC and Asian Disaster Reduction Center in Japan are also using the APEC Guidebook as a teaching tool to train SMEs on business continuity planning.

“The APEC project laid out the framework for how organizations like ours in Thailand can assist local SMEs develop business continuity planning. We are actively disseminating information and providing SME training workshops. Business continuity plans have already helped SMEs’ weather demonstrations in Bangkok,” said Aslam Perwaiz, Head of Disaster Risk Management Systems at ADPC.

Private sector insurance companies such as WeatherRisk Explore and Fubon Insurance have also adopted the APEC Guidebook to help promote business continuity planning among SMEs.

**A vulnerable majority** Of businesses affected by Typhoon Haiyan, SMEs were the most severely hit. SMEs represent 90 percent of all businesses operating in the Asia-Pacific region.

### More issues to address

Companies like Chiao Fu are using the APEC Business Continuity Planning Guidebook to help strengthen their business continuity management system. However, challenges remain for the company to feel confident in a disaster.

“Because we don’t have many experiences with natural disasters, we still worry we will be under-prepared,” explained Mr. Ni. “For example, in the scenario of a broken supply chain, we plan to increase the quantity of raw material in our safety stock for sole source suppliers and look for replacement suppliers.”

“However, as we have no experience in such circumstance, we are unsure if the level of our safety stock would be sufficient or if our replacement supplier will be exempted from the disaster,” he added.

APEC is addressing these and other issues. SME training workshops are planned in other APEC member economies throughout the region to continue efforts accomplished in the first *train-the-trainer* workshop in Chinese Taipei in 2012. ■

*The APEC Secretariat (www.apec.org) operates as the core support mechanism for the process of Asia-Pacific Economic Cooperation.*



## The case of Hurricane Sandy

Resilient communities need public private partnerships to survive

On 29 October 2012, Sandy came ashore in New Jersey as a strong, slow-moving Category I hurricane. At the time, Bryan Strawser was Head of Global Crisis Management and Business Continuity for one of the world's largest retailers.

**O**N SANDY'S PATH THAT DAY, LAY more than 200 of our stores, multiple distribution centers, and the two datacenters powering our e-commerce website. Most importantly, tens of thousands of our employees were in harm's way as the storm rushed ashore.

We knew, however, that we were not in this fight alone.

Over the past decade, we have come to realize that for a community to truly be resilient against a natural disaster, public and private sector entities must work together and share information in a collaborative and transparent manner.

### Resiliency before Hurricane Sandy

For the three years leading up to Hurricane Sandy, local, state, and federal emergency management agencies had embraced outreach and joint planning with the private sector. The private sector, particularly the retail and utility sectors, had embraced this new approach with open arms. The result has been a strong set of partnerships between the public and private sectors that was apparent throughout the preparation, response, and recovery

for Hurricane Sandy.

For example, for several days prior to landfall, public and private sector entities were exchanging information through pre-defined channels. Emergency management agencies were sharing situational updates, storm path updates, and plans for road closures and evacuation areas long before landfall. Private sector companies were sharing their plans for facility closure, employee evacuations, positioning of recovery supplies, and post-landfall response plans.

This collaborative and transparent approach provided broader situational clarity for both the public and private sectors and helped avoid confusion later during the more chaotic response phase.

### Coordination in the wake of the hurricane

As the storm began to dissipate and its impact in New Jersey, New York, and other states became clearer, public and private sector entities remained in close contact. The Federal Emergency Management Agency (FEMA) had activated their new National Business Emergency Operations Center (NBEOC) as a



component within FEMA's National Response Coordination Center (NRCC). The NBEOC consolidated a number of federal and state agency reports into one, easy-to-read report for the private sector to digest.

At the same time, private sector entities were sending information to the NBEOC that was consolidated and shared at the highest levels of state and federal government. This information helped provide an understanding of the storm's impact on the private sector. More importantly, this information helped FEMA and other public sector emergency management agencies make decisions on the distribution of supplies and other resources.

For example, as a major retailer, my employer at the time was



Photo © Jocelyn Augustino/FEMA

**Washington, D.C. FEMA**

Administrator Craig Fugate, left, and Department of Homeland Security Secretary Janet Napolitano, center, participate in a briefing on Hurricane Sandy at the National Response Coordination Center at FEMA headquarters on 30 October 2012.

able to quickly bring in significant amounts of ice, water, and recovery supplies for both donation and sale at nearly two hundred locations within 24–48 hours after landfall. Emergency management agencies could distribute supplies elsewhere strategically with this information in hand, knowing that needed supplies were available at several locations already. This made for more efficient decision-making and a more coordinated response process.

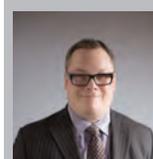
**Importance of close cooperation**

This close coordination between the public and private sectors throughout all phases of business continuity and emergency management was shown to be effective during Hurricane Sandy in the United States. The approach allowed for a

"Emergency management agencies were sharing situational updates, storm path updates, and plans for road closures and evacuation areas long before landfall."

faster and more efficient response and recovery of private sector capabilities, helping to ease the burden on emergency management agencies in the public sector and leading to faster economic recovery at the impacted areas.

While opportunities exist to continue developing the interaction between public and private sector entities, this close coordination and transparent communication will be a requirement to build resilient communities, companies, and nations. ■



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# Everybody's business

Experts are facing an enormous task in looking for ways to integrate the private sector in disaster risk reduction.

**D**ISASTER RISK REDUCTION CONSISTS of the steps taken to minimize the destructive effects of disasters and ensure the readiness of a society to plan, forecast, take precautionary measures, and respond to impending disasters.

The number and range of disaster risk assessments undertaken under the auspices of the Hyogo Framework for Action – the international agreement for reducing disaster risk – has increased over the years. However, assessments seem not to have been effective in reducing disaster risk, or in impacting developmental plans, and other public and private sector decisions.

Risk reduction activities seem to have largely been ignored by key players in the private sector, and as such contributed to their minimal effectiveness. Poor take-up by the private sector may be a result of disaster risk reduction not having the allure and visibility of directly *saving lives* such as disaster relief, nor of providing an *escape* from poverty in the same way as longer-term developmental efforts do. Some companies may also underestimate their own capability in disaster risk reduction, which can make it difficult to “sell” disaster risk reduction to them as part of corporate social and environmental responsibility.

## Engaging the private sector and market mechanisms

Increasingly, analysts are suggesting

that deliberately engaging the private sector in disaster risk reduction efforts may be the best strategy going forward in regard to the forthcoming Hyogo Framework for Action (HFA 2).

Experts have wondered about the most effective strategies to adopt in order to engage the private sector in disaster risk reduction. This is an enormous set of tasks. It has for example been suggested that the insurance industry may provide a feasible pipeline of resources for both dealing with the impact of disasters, and for promoting risk mitigation through market mechanisms.

Other schemes have included the World Bank's project on market incentives for mitigation investments, new loan guarantee schemes (i.e., partial risk guarantees), and exploratory weather insurance mechanisms. There is not much information on the success of these schemes.

## Disaster risk reduction as part of ongoing discourse

In order to face increasing hazards, they must be perceived from a systems perspective, as part of everyday life, with the potential to impact every organization regardless of public, private or non-governmental; and profit or non-profit; as well as individuals. Disaster risk reduction is not “*somebody else's business*”. It must become part of the private sector's ongoing



“Disaster risk reduction is not *somebody else's business*. It must become part of the private sector's ongoing discourse.”

discourse through information and awareness programs as well as training and development schemes.

There should be regular interchange of ideas among different actors – including members of the private sector – to bridge the different perspectives, and restructure the incentive system for private sector actors in order to create a clear understanding of the benefits of successful risk reduction for involved parties. Active participation in initiating or engaging with risk reduction discussions and strategies may be ultimately classifiable as corporate social responsibility with incentives such as tax reduction thrown in as a sweetener.

Disaster risk reduction and engagement of the private sector must be made to fit into the value systems, stakes, interests and incentive structures of all public and private actors as well as NGOs, and the means through which each of them constructs their policies and strategies. ■



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## Business continuity planning for supply chains

The variables that can affect the resilience of a supply chain are immense. While some of the disruptions are foreseeable, it is impossible to prepare for everything.

SOME DISRUPTIONS THAT AFFECT businesses occur regularly and can be planned for: credit risk, transport delays, manufacturing backlogs, and seasonality to name a few. While it is impossible to prepare for every possible disruption, it is necessary to plan for a number of different scenarios and try to analyze where things can go wrong.

A variety of different supply chains are employed by businesses usually based on cost or demand. A single sourcing supply chain may suit a smaller company's leveraging volumes to reduce production costs, but it also stacks risk against the company should something go wrong. A large company may spread risk over multiple suppliers, but may lose out on priority due to minimal margins or poor communication.

The trade-off to consider is a *lean supply chain* (efficient) vs. a *resilient supply chain* (effective), and companies are starting to work toward a hybrid of the two in order to spread the risk while still considering the cost. However, what happens when a company receives an interruption such as typhoons, earthquakes or other natural phenomena that occur almost at random? The devastating floods that affected Thailand in 2008, caused several days' production stoppage for a manufacturer who made small plastic screws for Intel.

Such a seemingly small part of the process unpredictably caused a global stoppage in the delivery of Intel computer chips.

### Planning for the risk

There is no perfect business continuity plan to encompass all probabilities, nor is it recommended to implement a supply chain with a "prepare for the worst"-mindset. What is important is to develop closer relationships with third party logistics, manufacturers and suppliers to ensure that any disruption that may occur can be dealt with.

For example, the ash situation after the Eyjafjallajökull volcano eruption in Iceland in April 2010 that caused all European flights to be grounded, was estimated to have cost US\$200 million per day (source: International Air Transport Association) to the airline industry.

"The trade-off to consider is a *lean supply chain* (efficient) vs. *resilient supply chain* (effective), and companies are starting to work toward a hybrid of the two in order to spread the risk."

In addition to this were the bottlenecks of cargo for example in Hong Kong and Shenzhen where a significant number of manufacturers were shipping their products from. Naturally, DHL Global Forwarding was not able to make use of flights either, and the planning team worked hard to prepare for when the airspace re-opens. Charter flights were planned, but the team also needed to focus on the backlog generated at the receiving warehouses and how to decrease the volumes. To this end, DHL worked with their customers and was able to shift some cargos by adjusting the transport type to combined methods such as *Sea Air* which is moved as ocean freight to Dubai and then flown to onward destinations, and *Rail Air* which is moved by rail to Urumqi in China and then flown to the final destination.

The calculated risk of these methods was that the air space would re-open shortly – it takes approximately eight days to move cargo to Dubai and two to three days to move to Urumqi, but the additional benefit was alleviating part of the huge backlogs in Hong Kong and South China.

Risk management and business continuity plans are highly important to ensure smooth, continuous operations for any supply chain. Developing relationships with reactive and flexible partners goes a long way to support this process. ■



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# Optimizing supply chain operations by creating elastic capacity

Intelligence-driven and informed decision-making processes are crucial in mitigating the adverse impacts of disasters and addressing emergency needs – especially to minimize the risks for supply chain operations.

**T**HE LACK OF ORGANIZED INFORMATION systems to match the specific post-disaster needs related to emergency response, rehabilitation and recovery, provides opportunities for disaster risk reduction practices to converge and become operational with a focus on information, resources and personnel.

Fluent information dissemination as well as correct resource allocation and personnel placement require a stable pre-planned process. Pre-defined command strategies are of great importance in times of disasters when there will be an increased demand for communications, technology and resources involving several stakeholders. Operational collaboration with surge capacity is needed to implement efficient and effective incident response. This can be referred to as an optimization process with elastic capacity that is built within multi-stakeholder teams.

Until recently, the process of supply chain management has been ad hoc and slow. However, new technologies and adopted practices have helped mitigate operational risk in supply chain management. This has also helped improve the efficiency of communications through centralized planning and implementation of information management systems at Emergency Operation Centers.

### Communication technology and the importance of the private sector

Simple concepts such as providing efficient rescue and rehabilitation services for those in need, can often be the most challenging to execute. A defined and operational supply chain management process with a focus on communications, technology and partnerships with diverse stakeholders provides the answer to this challenging issue. It is crucial that the leadership and ownership for the supply chain roles and responsibilities are driven and enabled by the national and state governments.

An efficient supply chain together with clearly defined and well-communicated needs helps the private sector provide relief and services to supplement the government interventions. Having the private sector as a stakeholder and member of inter-agency groups further enhances the surge capacity planning and mitigates the challenges related with supply chain operations in times of disasters and emergencies.

An engaged private sector with functional roles predefined in the supply chain mechanism during non-emergency times will ensure that



appropriate coordination is executed – thereby strengthening the elastic capacity to mitigate the supply chain operational risks. This private sector engagement further helps to provide a special emphasis on strengthening disaster preparedness and disaster mitigation in susceptible areas – and creates an ecosystem for disaster risk reduction and climate change adaptation.

### The plan in action

The need to strengthen contingency planning for disruptive events was envisaged by National Disaster Management Authority of the Government of India. They wanted to create a public domain standardized process through the Corporate Disaster Resource Network. The aim of the system is to pro-actively engage stakeholders



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including the government, relief agencies, product and service suppliers, and other private sector actors to develop a supply chain management solution for real time information on needs and offers. One success of the platform is the provision of a transparent supplier-based procurement process where suppliers can match needs and offers. Through this process, they can identify the need of a certain product and deliver it to the specific location.

The Corporate Disaster Resource Network has responded to 16 disasters across India, and has over 6,000 private sector companies registered along with 2,370 civil society organizations. It is used as a supply chain management solution for ongoing humanitarian interventions and enables a surge

"An efficient supply chain together with clearly defined and well-communicated needs helps the private sector provide relief and services to supplement the government interventions."

**Resilient supply chains** *New technologies and adopted practices have helped mitigate operational risk in supply chain management.*

capacity in times of disaster and emergency response. NGOs and civil society actors identify the needs of the disaster-affected communities and display these needs on the Corporate Disaster Resource Network website, thereby enabling the corporate sector, donors and other entities to ensure that these prioritized demands are addressed through the supplier databases in the network.

This engagement with the private sector strengthens the emergency operation centres' integration, providing an opportunity to build elastic capacity to mitigate supply chain operational risk with the private sector being an active stakeholder. ■



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# What is our game plan?

Against the backdrop of the global financial meltdown that affected almost every nation, there is worrying news of a number of economies that have economic issues and soaring numbers of unemployment resounding in Europe and the United States.

**W**HILE THERE HAVE BEEN media reports about the possibility of bailing out some of the countries, fears were set in further when unconfirmed economic analyses were published stating that China, the world's largest manufacturing country, was overheating.

The long awaited announcement of the Trans-Pacific Partnership (TPP) is expected to bring tremendous benefits to many countries in the Asia-Pacific region. Another exciting integration of economies, the ASEAN Economic Community (AEC) will be created by the year 2015. These types of cooperations bring about many economic benefits that ripple across the region. The ASEAN countries especially benefit due to the plentiful business opportunities, bigger consumer markets, higher employment opportunities, lower business costs, and lower trade barriers.

## Connectivity and interdependency at play

With more economic activities at closer proximity and the forging of more interdependency between governments, businesses and social circles, we are now virtually right next to each other. Businesses are drawn by several factors to

operate in different countries and they are not restricted by economic boundaries.

However, being closer has its pros and cons. From the risk analysis perspective, the major concern would be the possibility of a ripple effect felt by neighbouring countries when human-made or natural disasters occur. The situation could worsen still if that interdependency happened to be the only link supporting a series of business activities.

## Interdependency and risk at play

The aspiration of many economies and large economy groupings such as the Asia-Pacific Economic Cooperation (APEC), United Nations International Strategy for Disaster Reduction (UNISDR) and International Monetary Fund (IMF) to rally various economies to come together and understand the interdependency in building sustainable and resilient economic activities, comes with the need to straddle between the differences between economic agendas and health of the respective economies.

From a business perspective, there has been tremendous pressure over last few years when businesses have needed



to restructure and adapt to this new economic era and re-analyse their business operating model. However, risk management, which includes business continuity planning, is always missing in the strategy planning phase and businesses end up struggling when an unexpected incident arrives at their doorstep.

## What is our game plan?

From the standpoint of a nation, a country's wealth and economic performance depends largely on businesses and social communities together with the right government policies. The need to promote community resilience must resonate with every stakeholder right down to the individual.



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Businesses will continue to be cost-sensitive and prioritize their business objectives. Addressing the ‘*what if*’-question will always be on the bottom of a businesses’ to-do list. Thus, governments will have to play the active role as a facilitator and motivator to enlighten businesses to play their part.

Without a strong mandate, businesses are free to prioritize their commercial objectives and continue to do nothing or only the minimum to demonstrate their active role in the community.

### **What can we do as risk professionals?**

As risk professionals, we have an

“The need to promote community resilience must resonate with every stakeholder right down to the individual.”

**What if?** Addressing the ‘*what if*’-question will always be on the bottom of a businesses’ to-do list. Thus, governments will have to play the active role as a facilitator and motivator.

important role to play in helping preserve and protect not just our employers, but also the large communities – especially on the social front – who depend on our expertise. We can act as advocates and continue to lobby the businesses to contribute their share.

This is not a new concept in our line of work. We have been helping senior management identify business risks for a long time, but we can go further by identifying these risks and sharing resources on how to overcome the common issues.

As a risk expert, I believe we can make a great difference in molding a more resilient and caring world. We have to make an effort to simplify and explain the risk management process. To be an effective facilitator, is to persuade every stakeholder to come onboard and construct an effective response plan. This is for the benefit of the future generations. ■



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# The role of the private sector in a civil society

The roles of each actor in a civil society are interdependent and closely intertwined. The private sector has a major role in supporting the local economy to create jobs and ensure the sustainability of the region. They also play the role in emergency situations to help communities to recover.

**W**HEN DISASTERS CAUSE BUSINESS activity to stagnate, the impacts are felt not only by individual enterprises, but also in the employment levels and the overall economy of the stricken region. And when trade and commerce are conducted with businesses in other areas, the economic damage can also affect distant regions through supply- and value chains.

The Great East Japan Earthquake in 2011 suspended business production in the affected regions, disrupting supply chains and affecting businesses across Japan. The disaster caused 656 small and medium-sized enterprises (SMEs), which employed 10,757 workers, to go bankrupt within one year. But only 79 of those SMEs (12%) were located in the severely affected region; the others came from all over Japan. The bankruptcies were attributed to indirect losses or damage caused by disruptions in their supply chains.

The Thailand flood of 2011 also affected many manufacturing enterprises outside of Thailand through supply chain disruptions. This event demonstrated that when supply chains are closely intertwined, a single disaster can affect the

economic activities throughout the globe.

With these experiences, the enterprises recognized the need for incorporating supply chain -consideration into their business continuity management planning as one of the strategic issues.

### Recognizing the need for resilience

In the Great East Japan earthquake, many local governments were hit by tsunami and consequently their disaster response activities were halted – which slowed down the recovery processes of the communities including private sector enterprises. As a result, the need for improving the resilience of both the private sector enterprises and local governments, as well as their collaboration, were highlighted.

Considering the interconnectedness and interdependence of different actors and social functions in the region, any disruptive incidents can have region-wide impacts. In the event of a disaster, the role of the private sector becomes even more important in this respect. Effective cooperation among disaster-resilient private sector players helps

ensure a resilient and sustainable civil society.

### The benefits of private sector cooperation

The role the private sector plays in emergency response operations when large areas are affected has not been commonly recognized. Private sector enterprises need to take into consideration that playing the role given for them in disaster risk management also leads to protection for themselves in case of a disaster.

In light of the past disasters, it is necessary for all actors in the community to recognize their respective positions, roles and responsibilities – once again – and move into action to develop disaster resilience in civil society. ■



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# INFORMATION AND COMMUNICATION SECURITY FOR SMEs

As trade across the Asia-Pacific region continues to grow, an increasing number of small and medium enterprises are becoming key suppliers.

**T**HIS IS PRIMARILY DUE TO INCREASED COMMUNICATION AND low-cost internet channels such as *Alibaba.com* and *Global Sources* connecting buyers with sellers. Alibaba's international marketplace, for example, has over 4.4 million registered users from more than 200 economies, the vast majority being small and medium enterprises (SMEs). In the Asia-Pacific Economic Cooperation region, SMEs account for around 90 percent of all businesses and employ as much as 60 percent of the work force.

This integration has been facilitated by the dramatic decrease in the cost of information and communication technology (ICT); from plunging hardware costs and ubiquitous broadband (although speeds do vary by economy) to innovative software and storage options. It is not an exaggeration to say that SMEs now have access to technology that only a large multinational company could access 15 years ago. With a longer supply chain, there comes increased risk from both natural and man-made disasters, including ICT security breaches via criminal malware.

### **Criminal breaches in ICT security – a major issue**

In the Great East Japan Earthquake, over 32,000 companies were affected with 22 percent going out of business. Whilst this is an extreme event, others, such as seasonal flooding or typhoons are not, and when you add in potential criminal breaches of an SME's IT resources, some form of affordable recovery plan is required. Luckily, the same technology advances that have allowed SMEs to integrate into the supply chain have provided the means for agile and low cost back-up of key data such as customer lists, accounting records, design and formula or recipes. Rapid recovery after physical or criminal damage has been further advanced.



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**IT era** *With a longer supply chain, there comes increased risk from both natural and man-made disasters, including ICT security breaches via criminal malware.*

This technology is now available via cloud computing services from major companies such as Microsoft and Amazon Web Services. Moreover, as major cloud computing service providers possess an extra layer of security, they may assist SMEs in preventing breaches due to malware.

Earlier this year, the U.S. Federal Bureau of Investigation (FBI) issued a warning stating that criminals, hackers and organized crime rings are installing malware on pirated software that could leave consumers exposed to criminal activity. The warning states that criminals' objective is to record key strokes that can reveal sensitive information as well as usernames and passwords, which opens companies at both ends of the supply chain to risks such as financial fraud. Safe, secure computing should be part of business continuity management and IT contingency plans.

Malware can spread to SMEs' customers' computers through e-mails people send to co-workers and clients. Most large-end customers in the supply chain will insist on safe computing practices. As thousands of SMEs work from home or other sites, the use of unsecured PCs results in an increase in cyber-crime. The use of genuine software for financial and banking transactions minimizes the potential for criminal activity. ■



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# PRIVATE SECTOR DRIVES TECHNOLOGICAL INNOVATION FOR DISASTER RISK REDUCTION

*Innovative Internet of Things* -platform  
*ReadyMIND* helps reduce flood risk.

INCREASINGLY FREQUENT AND INTENSE DISASTERS CAUSE LIVES, property and businesses to be destroyed. North East India is no stranger to this phenomenon. With annual flooding in multiple states, there is an urgent need for information, knowledge and stakeholder management, in addition to capacity building. Fortunately, as challenges have increased, so has the ability to address them with technological innovations from the private sector.

AGT International's integrated water resource management solution is based on *ReadyMIND*, an innovative *Internet of Things* (IoT) -platform that monitors, simulates and predicts floods and droughts. The same approach can be extended beyond water management to most other natural disasters.

### Strengthening public private partnership

Water-related crises are most effectively and efficiently managed when the public and private sectors work together. AGT's solution enables private sector participation in several ways. Because the solution can be cloud-based, the private sector can easily contribute to or access data, enriching it or using it for their own research.

Insurance companies could rely on the applications and data to conduct flood risk analyses while urban real-estate developers could use the same data to improve planning. In fact, in areas like North East India, which are entirely flood risk zones, the public and private sectors could jointly use the solution.

Corporations could take advantage of the application layers such as the Unified Situational Awareness Picture (USAP)

as well as modeling and simulation. They could also use the platform to interact more closely with the governments, academia and other public sector organizations during crises. The open architecture encourages third parties to develop applications to run on top of the platform as partners in innovation.

### Preventing floods

*ReadyMIND* helps mitigate the impact of floods and in some cases even helps prevent them through its innovation in information and knowledge management, stakeholder management, and capacity building. Its open architecture, applications and cloud accessibility facilitate public private sector cooperation and advances.

*ReadyMIND* is the first platform of its kind integrating data collection, aggregation, prediction, simulation, real-time visualization and crisis management. Its key advantages include the opportunity to reduce flood risk and minimize loss of life, property and commerce; facilitate public private sector collaboration resulting in a better, more coordinated response to floods; and drive operational efficiencies to reduce routine operations and maintenance costs. big picture and smaller details. ■



Figure AGT International



**Managing the water** *Public and private sector cooperation can result in a more coordinated response to floods.*

### **ReadyMIND 5-layer model**

The five-layer model highlights the key capabilities of the integrated water resource management solution *ReadyMIND*.

#### **Sensing & Information**

Real-time data is collected and monitored from all relevant sources including sensor and camera networks, SCADA (supervisory control and data acquisition) systems, satellites, weather forecasts, agency databases and the web. Because *ReadyMIND* is an open platform, it can integrate almost any type of sensor, database or third-party software.

#### **Unified Database**

*ReadyMIND* aggregates and standardizes the collected data into an integrated data warehouse which is optimized for data sharing, visualization and advanced analytics.

#### **Modeling & Simulation**

Decision support tools including simulations and “what if” -scenarios help officials evaluate different options. They also recommend preventative measures and best-case allocation of limited resources as well as highlight ways to optimize water infrastructure operations.

#### **Unified Situational Awareness Picture (USAP) & Decision Support**

A comprehensive, multi-layered picture of the overall water situation in real time is displayed on a geographic information system (GIS) map with layered views that enable users to see both the big picture and the details.

#### **Integrated Operations & Crisis Management**

By providing the right information to users in real time, this layer facilitates cross-agency collaboration. Operations can be directed using a hierarchical command structure to strategize a response to natural disasters.



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# ALL TOGETHER NOW FOR A SAFER HOTEL INDUSTRY

Public and private sectors are working hand in hand to improve Indonesia's resilience as a tourist destination.

**O**VER 17,000 ISLANDS MAKE UP THE REPUBLIC OF Indonesia. Indonesians lovingly call their country *Tanah Air* which translates to *water land*. The country's diversity, beaches and tourist attractions are world famous.

However, the attractiveness of the natural environment comes at a price. Sitting right on the *Ring of Fire*, Indonesia is also one of the most disaster prone countries in the world. The 2004 Indian Ocean Tsunami was triggered north of Sumatra, and earthquakes and volcanic eruptions are common occurrences.

Supported and driven by German International Cooperation's Integrated CIM Experts, the Indonesian Ministry of Tourism and Creative Economy and Bali Hotels Association (BHA), a private sector association of managers of 126 star-rated hotels, have cooperated to enhance the resilience and disaster preparedness of Indonesia as a tourist destination. The goal has been to create cost effective, pragmatic, hands on -solutions for an industry that often perceives security and safety as a costly liability instead of a competitive advantage.

### Integrated police radio community (IPRC)

In times of crisis, communication is key. However, traditional communication systems tend to break down during emergencies. That is why Bali Hotel Association and its partners set up an ultra-high frequency radio system together with Bali Police to coordinate and cooperate in times of crisis.

The system was the first of its kind, also being utilized

by embassies and consulates to keep track of their citizens. The equipment was donated by the hotels, and communication management was jointly conducted by the police and Bali Hotel Association.

### Early warning of tsunami

Timely and reliable tsunami early warnings are still a challenge in Indonesia. That is why Bali Hotel Association linked itself directly to the Indonesian Agency for Meteorology, Climatology and Geophysics (BMKG) in Jakarta.

The association receives raw data at Bali's Hard Rock Hotel where it is processed and interpreted by trained hotel staff on a 24/7-basis. In case of a tsunami, alarm, evacuation recommendations are sent out to Bali Hotel Association members and partners via email, SMS and IPRC.

In the aftermath of the 2009 terrorist attacks on the Ritz Carlton and Marriott Hotel in Jakarta, the system was utilized to coordinate hotel response.

### From *Tsunami-Ready Hotels* -certification to *'Hotel Resilient'*

To prepare hotels for tsunami, Bali Hotel Association and its partners created the do-it-yourself *Tsunami Ready Toolbox*, a compilation of self-assessments, standard operating procedures, practical advice and background information.

The toolbox was designed "cook book style" and is available in English and Bahasa Indonesian. It lists all "ingredients" and processes necessary to prepare for tsunami and was supplied to hotels nationwide. The ministry organized familiarization workshops throughout the archipelago and the response was enthusiastic. However, only a few hotels seriously implemented the recommendations.

The situation changed when Bali Hotel Association started to certify its member hotels on the basis of the *Tsunami Ready* -recommendations. Certified hotels were awarded with a logo and listed on the *Tsunami Ready* -website. The association supplied applicants with a complete set of all necessary standard operating procedures and backup, including ready-made training templates and on-site support for a small fee. *Tsunami Ready Hotels* are able to evacuate sometimes hundreds

“The toolbox was designed “cook book style” and is available in English and Bahasa Indonesian.”



Photo Shutterstock.com/ Arie v.d. Wolde

**Tsunami ready** *Tsunami ready hotels are able to evacuate hundreds of people within 15 minutes, 24 hours a day.*

of people within a time limit of 15 minutes, 24 hours a day. They are self-reliant for 48 hours and have signed memorandums of understanding to actively integrate the surrounding communities at risk into their planning.

Today, hotels and destinations around the world are utilizing the *Tsunami Ready* -approach. The program was recognized by United Nations office for Disaster Risk Reduction (UNISDR) and featured on CNN. Suddenly visible disaster preparedness became a requested competitive advantage and a marketing tool.

*Tsunami Ready* is the basis for the *Hotel Resilient* -certification initiative of UNISDR, Pacific Asia Travel Association (PATA) and German International Cooperation (GIZ). As *Tsunami Ready*'s concept already proved successful, *Hotel Resilient* could become a game changer if prepared hotels are listed on travel sites like Trip Advisor letting the consumer decide not

only about the level of comfort and luxury they wish to stay in but also about the level of preparedness in case of disaster.

The development of *Hotel Resilient* is ongoing. If successful, it will generate positive public relations and drive for change and could become a self-financing enterprise dedicated to tourism and travel following and proving the principles of the Hyogo Framework for Action with a focus away from reaction, and towards responsible and forward-looking preparedness. ■



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# MAKING SUPPLY CHAINS RESILIENT TO DISASTERS

Today's global supply chain has achieved cost savings through reduced inventories, shortened transit cycles, and streamlined production processes. However, it may be more susceptible to risks related to natural hazards.

**E**VEN THOUGH THE GLOBAL SUPPLY CHAIN HAS BECOME quite efficient, it is susceptible to systemic risk, or risk that originates from one node of a financial network, which then harms the entire financial market. Therefore, while a more efficient production and transportation system may be more capital-intensive and cost efficient, in the event of a natural disaster, a large part of the system may collapse if a disaster occurs, due to an undispersed supply chain. *The Economist* (2012) reported a decrease in death rates from natural disasters. However, the economic burden increased drastically reflecting the increased exposure of a globalized economy.

This phenomenon has emerged because of the increase in the value of economic asset and demographic density. Importantly, economic assets are increasingly interwoven worldwide by the global supply chain network, even if they are physically distant, which means effects of a collapse will also be felt in a wider area.

### **Interconnected supply chains cause catastrophic damages**

For the last four years, many disasters on one side of the globe, such as the Great East Japan Earthquake and floods in Thailand in 2011, affected factory operations in the other side of the globe. For example, the shortage of parts from Japan forced General Motors to stop operations at a factory that manufactures pickup trucks in Shreveport, Louisiana.

The same situation occurred during the floods in Thailand, which resulted in automaker supply chain disruptions that stopped work at factories in countries as far away as

Japan and the United States. The Japanese automakers compose more than 90 percent of automobile productions in Thailand, so their profits declined drastically on the global scale. For example, Honda lost more operating profits due to the Thai floods than due to the yen appreciation in April-December 2011 (Figure 1). Additionally, Hurricane Sandy in 2012 was the second costliest hurricane in the history of the United States (subsequent to Hurricane Katrina). The direct economic losses were estimated between USD78–97 billion. Furthermore, power outage disruption caused damage costs of USD16.3 billion, and total business interruption losses were between USD10.8–15.5 billion.

In terms of the number of loss events, disaster related to weather – such as floods and tropical cyclones – dominate (Figure 2). These events account for 45 percent of deaths and 79 percent of economic losses caused by natural hazards. Floods in particular are the most common disasters in the United States, and one of the most threatening disasters to the private sector in the current changing climate in Asia.

Both academia and industry have called for action to this issue. For example, an article published in *Nature* urged for the need to make supply chains climate-smart. In 2011, the World Economic Forum launched The Supply Chain Risk Initiative that explores the most critical threats facing supply chain networks and applies new risk response tools to promote efficient risk management, security, and resiliency. However, few researches have assessed and modeled the effects of adverse weather on supply chains. Our research strives to evaluate such effects based on modeling.

### **Findings from the flooding in Thailand**

To prepare for the Global Assessment Report 2013, which is a biennial paper of United Nations International Strategy for Disaster Reduction (UNISDR), we examined the effect of the Thai floods in 2011 to determine which features of supply chains are sensitive to systemic risks. Including other incidences of supply chain disruptions, we identified five important components to determine the resilience of supply chains. These questions relate to critical nodes and links, cascading failure, bridge ties, reliability in a network, tie degree (strong or weak), and network performance.

For instance, in the case of the 2011 Thailand floods, Honda's assembly plant, which is a critical node in the supply chain, was flooded and out of operation for six months. This example shows that the loss is greater if a factory that produces a unique component, or plays a critical role in the supply chain is damaged by a disaster

directly. In contrast, Nissan recovered more rapidly than Toyota and Honda because it had diversified its suppliers and owned alternative sources. This example illustrates that alternative bridge ties could increase a company's resilience in response to a disaster. Based on these preliminary findings, we plan to expand the model using a Bayesian network analysis to examine quantitatively which components contribute to the resilience of a supply chain.

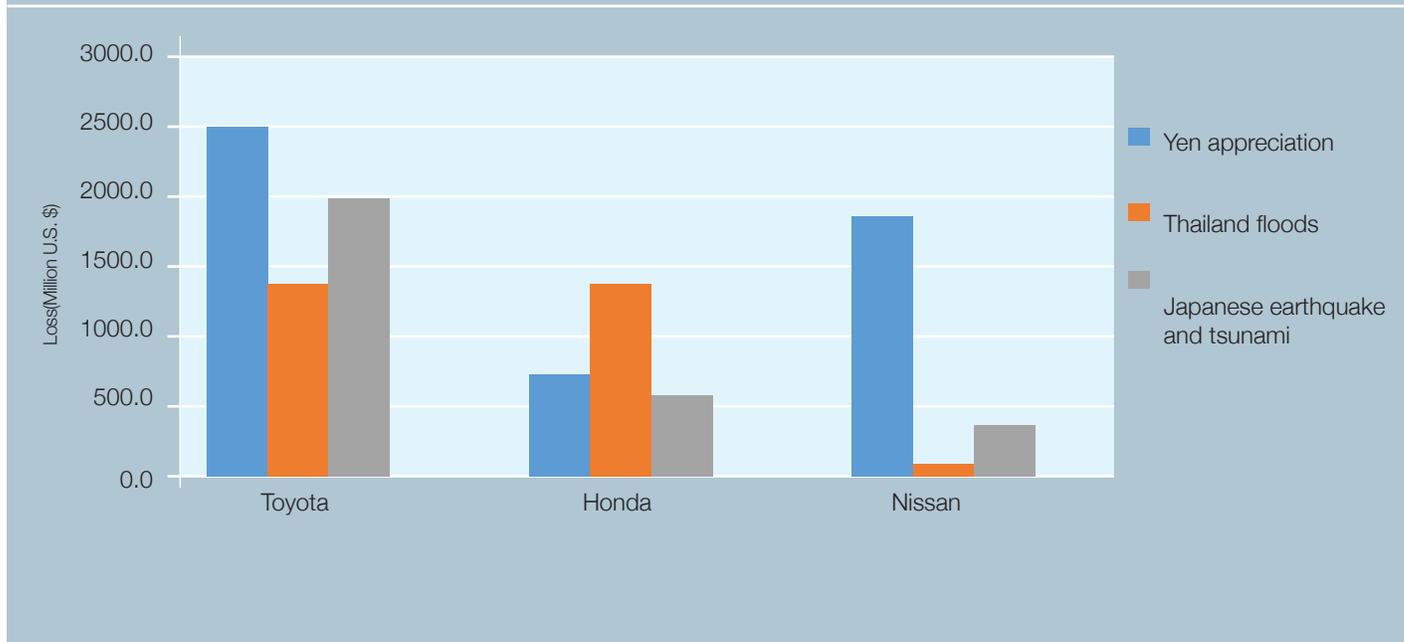
### Disaster management of small and medium enterprises is key

A study claims that only about one in six Global 2000 -companies apply sourcing solutions specifically to

their risk management programs. Most companies are overwhelmed with supplier information management because the typical Global 2000 -company has more than 20,000 suppliers in their supply network. However, multi-national companies can afford to invest resources into disaster risk reduction through the adoption of business continuity plans, and following standards of the International Organization for Standardization (ISO), for example ISO 22320 for Emergency Management and ISO 22301 for Business Continuity Management Systems.

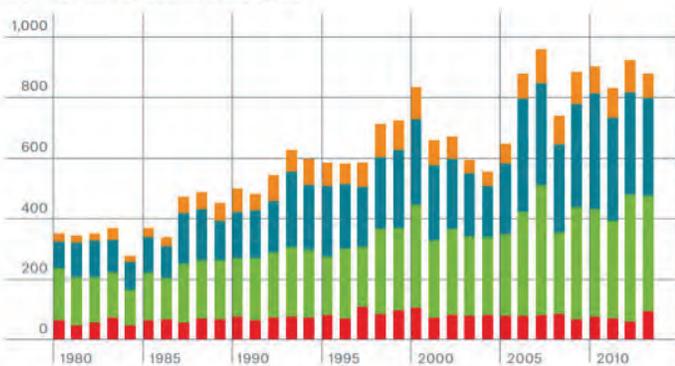
The fundamental challenge is equipping small and medium enterprises (SMEs) within these supply chains with resilience to disasters, as they may lack the resources

**Figure 1. Decreased Operating Profits of Japanese Major Automakers (April - Dec 2011)**



**Figure 2. Adapted from Munich Re Topics Geo 2013.**

Number of loss events 1980-2013



- Geophysical events:  
Earthquake, tsunami,  
volcanic eruption
- Meteorological events:  
Tropical storm, extratropical  
storm, convective storm,  
local storm
- Hydrological events:  
Flooding, mass movement
- Climatological events:  
Extreme temperatures,  
drought, wildfire

Source: Munich Re

**Table 1: Top Five Joint Resilience Measures**

	Asia	North America	Europe
1	Improved information sharing between governments and businesses	Harmonized legislative and regulatory standards	Harmonized legislative and regulatory standards
2	Building a culture of risk management across suppliers	Improved information sharing between governments and businesses	Improved information sharing between governments and businesses
3	Harmonized legislative and regulatory standards	Building a culture of risk management across suppliers	Building a culture of risk management across suppliers
4	Improved alert / warning systems	Trade resumption plans, protocols and lines of authority	Use of exercises to “stress test” assumptions and plans
5	Common risk assessment frameworks	Common risk assessment frameworks	Common risk assessment frameworks

Source: World Economic Forum (2013) Building Resilience in Supply Chains, Page 37

and knowledge to become resilient. According to a survey of businesses in 17 Asia and the Pacific economies, 67 percent of companies did not know about business continuity planning; this figure increased to 83 percent among SMEs. Capacity building of SMEs to prepare for disasters is critical. This need is clear when one looks at the survey results of the World Economic Forum, which found the top joint resilience measures between public and private sectors in Asia. The second wanted measure in Asia is building a culture of risk management across suppliers.

### What the government should do

To prepare the private sector for future disasters, governments should collect scientific data and improve access to existing scientific data so the private sector can make proper investment decisions and build resilient supply chains.

Most countries in Asia still need to build their capacities in meteorological and hydrological services to provide weather, climate, and water services to various socioeconomic sectors. Therefore, governments should promote data collection and access, particularly flood maps, precipitation data, river discharge data, and land use data. In addition, data collection of the supply chains must be facilitated.

Several initiatives have already begun. One such effort is *zeean*, a community effort of mutual benefit that attempts to cover 400 sectors and individual states, provinces, and cities to provide data on global supply chains. Because these initiatives have just started, additional effort to collect data of supply chains should be promoted. ■



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*Dr. Upmanu Lall serves as Director of the Columbia Water Center, and Alan and Carol Silberstein Professor of Engineering at Columbia University.*

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# SME RISK MANAGEMENT:

## ASKING “WHAT ELSE CAN GO WRONG?”

Volcanoes, riots, financial crises, oil-spills, terrorism, bankruptcy, earthquakes, strikes, floods – you name it. Small and medium enterprises (SMEs), which represent 80 percent of all service providers, have to face it.

**T**O BECOME BETTER PREPARED TO FACE EXTREME EVENTS AND also the many every-day challenges to businesses, SMEs should begin by answering a few simple and very realistic questions:

- Can you reach all your essential staff on a Sunday morning at 4 am? Crises, more often than not, happen outside office hours.
- Do you have a computer back-up system for your company? Can you access it from the distance or without electricity?
- What does your insurance policy cover? Is it for water and/or wind damage or does it include other risks?
- How large is your emergency fund and where is it located? Can you access your bank account in case of political unrest or natural calamities?

The answers to these challenges can be found whilst implementing these three phases:

1. Consider what your SME can do to reduce disaster risk.
2. Initiate business contingency planning systems.
3. Establish preventive crisis management systems.

Disaster risk reduction is a process used for pro-active decision-making that:

1. Continuously assesses what risks can occur.
2. Determines the risks that are most significant.
3. Formulates and implements strategies and tactics to deal with those risks.

### Business contingency planning in a crisis

A business contingency plan (BCP) is a documented set of procedures and information intended to deliver continuity of critical functions in the event of a disruption.

A BCP manual for a small organization may be simply a printed manual stored safely away from the primary work location, containing the names, addresses, and phone numbers of the management staff, general staff members, clients, media and vendors along with the location of the offsite data backup, copies of insurance contracts, and other critical materials necessary for organizational survival.

At its most complex, a BCP manual may outline a secondary work site, technical requirements and readiness, regulatory reporting requirements, work recovery measures, the means to re-establish physical records or the means to establish a new supply chain or new production centers.

Crisis management can be broken down into four distinctive phases, the 4 Rs:

- Reduction: detecting early warning signals
- Readiness: preparing plans and conducting exercises
- Response: executing operational and communication plans during a crisis
- Recovery: returning the organization to “normal” after a crisis

### Developing worst case scenarios

In any SME, the most senior executives must be responsible, have the corporate will and take the time to put risk management into practice.

Through development of risk scenarios, the potential damage caused by each scenario will be evaluated, and based on these evaluations the SME can proactively start planning how to avoid high probability risks. Being prepared is common sense and mainly a “do it yourself” exercise with some outside coaching on the basic structure of the business continuity plans.

Choose to be ahead of the next challenge that undoubtedly will take place and expect the unexpected. ■



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# HOW TO GET READY FOR THE NEXT DISASTER?

**A**RE YOU A REPRESENTATIVE OF a retail business, tourism operator, local council, accountants' firm, manufacturer or an SME? Have you done anything to improve your readiness for the next flood, power outage, tsunami, fire or flu outbreak? Have your customers or regulators already asked you for your business continuity management or disaster recovery plan? If not – they will soon.

## ISO 22301 – what is it?

ISO standards are auditable requirement documents that enable organizations to achieve better control over their processes, better quality internally and improved services to their external stakeholders. ISO standards are accepted and encouraged across a wide range of industries and countries all over the world. ISO 22301 for business continuity management is one of the more than 18,000 ISO standards.

Apart from organizations being able to obtain the ISO 22301 certificate – after being objectively assessed by an independent institute – individuals can obtain certification by passing relevant exams.



Photo Shutterstock.com/ Michal Mrozek

## What are the benefits of the ISO 22301 -certification?

Being certified with the standard ensures that the following activities are conducted in accordance to the global best practices:

- Identifying and managing the threats to the organization's operations.
- Being proactive in minimizing the impact of incidents on your time-critical processes.
- Continuing to provide time-critical functions during times of disaster or disruption.

**Better preparedness** *One easy low cost way for your SME to better prepare for disasters is to have all contact details available from various sources.*

- Minimizing downtime and shortening recovery timeframes.
- Achieving better, cheaper insurance arrangements; in particular business interruption insurance.
- Demonstrating resilience to the current and prospective customers, regulators, suppliers and partners.

### The top ten low cost tips for SMEs for better preparedness

**1) Ensure you have dual supplier** arrangements and manual work-arounds in place.

**2) Make all contact details** available – including internal (staff and shareholders) and external (supplier, customer, media, next-of-kin) contact information – and make sure they are accessible from various sources (web, pre-populated SIM-cards, hard copy, USB etc.)

**3) Make sure you know who in** your organization will make key decisions when an incident occurs and when the top manager is not immediately available. Be as efficient as possible in your crisis response, and have the courage to act ‘outside the square’ and completely change your business direction if need be.

**4) Be proactive in your** notification of customers, the community and the press. Don’t wait for them to ring up and find out that your business is no longer in normal operation. Ask your

suppliers, banks, leasing company, landlord or the government (e.g., the tax office) for delayed payment terms, rather than wait them to chase you for the money.

**5) Make sure you know which** are your key time-critical functions, services and activities, and your biggest customers who bring in the largest chunk of your sales. Make plans to focus firstly on recovering activities, instead of wasting time on less important things.

**6) Make plans for your staff** to work from home or alternate locations. Use a virtual or shared office as an affordable continuity solution or set up a reciprocal arrangement with a business that has similar requirements to yours. Ensure you are able to divert services remotely (e.g., IT, phone, supplier deliveries etc.) and make sure you always have the necessary passwords and contact details available.

**7) Ensure your employees are** able to perform several roles in case

of illness or resignation. In particular in SMEs, you don’t often have multiple “extra staff” for every key roles.

**8) On the preventative side:** Understand and mitigate your security weaknesses (e.g., theft of your mail server) and have proper hygiene and infection management procedures in place (e.g., in case of a flu outbreak).

**9) Take out insurances relevant** to your business, apart from fire or damage, general property, glass, accidental damage, money, liability, burglary, goods in transit, tax audit, equipment breakdown and fraud or dishonesty insurance. In addition, consider key persons’ insurances and business interruption insurance for a small business.

**10) Use a smart best-practice** template for your business continuity plan – it will save you weeks of preparation. ■

### Nudie’s quick response to a fire

Australian juice manufacturer Nudie responded quickly when a fire struck their factory in 2004. The company immediately moved to pre-agreed alternate premises, started production and offered products to customers again within weeks.

“It was the best thing that has ever happened to us, as the media was all over our story and now everyone knows the brand. We would have never been able to pay for that type of marketing,” the staff comments.

To add to the media interest, Nudie management even decided to manufacture special bottles for a one-day stunt whereby they offered free juice to all firemen in their city, as a thank you for trying to put out the fire when it happened.



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# WHAT'S THE POINT IF THERE IS NO EMPLOYMENT?

In today's world, we seem to have more natural disasters than ever before. It may just appear to be true because we have faster news services covering the world in seconds, or it could be related to climate change.

**W**HAT IS CERTAIN IS THE perception that natural disasters are increasing, and the cost of natural disasters is going up. It is aid agencies and donors, both government and private, that provide the funds for the emergency response.

In most cases the emergency response is good and effective; in others not so good. However, fewer lives are lost, and fewer injuries result in long-term disabilities due to these efforts. The earthquake in Christchurch in 2011 is an example of an excellent response resulting in fewer deaths and injuries than there would have been many years earlier. There are still many events that occur in remote locations or in less prepared countries. The tsunamis of 2004 in South-East Asia, Japan in 2013, and the Haiti Earthquake in 2010 are examples of this.

## Target at wrong activities

Despite the rapid or slow emergency response and the level of damage suffered, a common thread through all these natural disasters, and many man-made events, is that the recovery process is often inadequate and targeted at the wrong activities. Governments and aid agencies focus on the individuals

and the infrastructure, and almost by definition they cannot assist companies that are affected. The focus is on providing food, clothing, shelter and health care in the emergency phase, and then on the same areas (less in health care) in the longer recovery period.

During the Great Floods of 2011 in Thailand, some 14,000 factories were inundated at the same time by up to three meters of water, which remained for more than a month. In this case, there was also damage to many houses, schools and community facilities. It was these that the governments and aid agencies focused on, not only during the emergency response, but also during the recovery period.

## Insurance doesn't bring back old customers

The normal assumption is that the factories would have had insurance, and that this will ensure the company's rapid recovery. However, during the floods in Thailand, it was discovered that fewer than half of the factories had insurance, and many had insufficient flood coverage. Insurance companies also struggled to cope with the number of claims, resulting in significant payout delays. Insurance coverage for natural disasters normally covers only

physical damage, and so factories that were able to protect themselves physically received no payments. Very often, during an extended operational interruption, the customer of a factory affected by a disaster, based in another location, receives no assistance, and therefore needs to source alternative suppliers to continue operating. In many cases, the damaged factory – once restored – may find that they have lost their customers forever. Insurances do not cover such losses. In other cases of natural disasters, a business may lose a number of key staff with certain skills, either as a direct result of the event, or by some relocation need after the event. If these people cannot be replaced, a business will not continue to operate and meet the demands of customers. Again, insurances normally do not cover such complications.

What is the result of these companies being unable to continue? Time after time we see this situation leading to:

1. Qualified and physically fit individuals (and often with families) leaving the affected areas to find work, and often not returning, or only after many years.
2. Lower levels of income within the affected areas and communities as less salaries (and profits) are made,

## Business Continuity



Photo Shutterstock.com/ Thor Jorgen Udvang

**Great floods** *The Great Floods of 2011 in Thailand left schools and factories under three meters of water.*

leading to lower spending on all goods and services in the area. This in turn leads to a downward cycle of unemployment and spending.

3. An inability for local companies to provide services and products for the recovery efforts, and an increased use of external entities.

4. A reliance on government and aid agency hand-outs for a longer period than should have been the case. This is exacerbated by *aid fatigue* as focus is removed by the media.

5. An increase in poverty for local affected regions, which in turn leads to parents being unable to afford the costs of schooling, which creates an inter-generational effect of disasters.

### Cutting down the recovery period

It is our firm belief that there are a number of solutions to these situations. If governments and aid agencies were able to contribute to the recovery efforts of affected companies after the initial emergency response period and focus on ensuring that businesses

are restored as quickly as possible, overall recovery periods and costs would dramatically reduce, with many ongoing benefits. This support may take the form of direct financial assistance to companies, or occur through funding of corporate crisis management assistance, or in many other ways.

More emphasis should be placed on risk minimization and crisis management preparations by companies that operate in disaster risk zones, particularly where a small number of employers form the financial core of a community. This should be enforced with expert assistance provided by corporate crisis management experts.

Aid agencies and governments can target recovery and renewal of industrial activities following disaster events through assistance or incentive schemes targeting specific activities from within and from the surrounding zone of the affected areas. There is an opportunity to “jump start” whole new industries, technologies and communities. Examples may include the rapid creation of 3G mobile telephony networks where previously a

legacy land line network existed, or the initiation of new solar power generation in the case that electricity grid networks are damaged significantly, or the funded creation of an aquaculture business where fishing boats and infrastructure have been demolished.

Overall, there is currently a clear lack of focus on the importance of the need for business operations to recommence within disaster affected areas, as it is seen not to be the role of governments or aid agencies. Our position is that it is the re-establishment of businesses and the ensuing benefits to local communities that support the most rapid and sustainable recoveries, and therefore lower the overall costs to all parties, and they should therefore be within the active scope of both governments and aid agencies. ■



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# WHAT IF AND IF ONLY

Without supply chains, consumers would be stuck using products that they had to make or grow with their own hands. Logistics have been with human civilization for millennia as cumbersome supplies of food, water and structural resources need to be transported across vast distances and challenging terrains for cities to grow and empires to rise or, in the obverse, to fall.

**A**NGKOR IS ONE OF THE GREATEST vanishing acts of all time. The Khmer Kingdom lasted from the ninth to the 15th century, and at its height dominated Southeast Asia. But then, as its control of water declined, so did its influence and eventually the empire. To serve the capital and its populace, several thousand tons of rice needed to be grown, harvested, transported and stored.

Making this possible was an ancient marvel; sophisticated systems of canals and reservoirs that allowed the city to preserve water in dry months and disperse excess water during the monsoon. Angkor's hydraulic system was a development of foresight, a response to the posited "What if the water supply can be regulated". For six centuries, the system was kept running and in turn the empire was kept thriving.

But, in the end, nature overwhelmed them. From a study performed by the *National Geographic*: trees with annual growth rings, the *Po Mu* trees, told a story. Sets of constricted growth rings showed that the trees had endured back-to-back mega-

droughts from 1362 to 1392 and again from 1415 to 1440. During these periods, the monsoon was weak or delayed, and in some years it may have failed completely. In other years, mega monsoons lashed the region, severe weather pattern not uncommon in recent times.

## History may not repeat itself but it often rhymes

Researchers suggested the most likely trigger of the Angkor mega-droughts was intense and persistent *El Niño* -warming of the surface waters of the central and eastern tropical Pacific Ocean. Prolonged and severe droughts, punctuated by torrential downpours would have overwhelmed a water system designed for the conventional weather pattern. And as crops failure rise and populations exceed the carrying capacity of the land, trouble begins. If inhabitants of part of Angkor were starving while other

“ Climate change is likely to be one of the **global mega-trends impacting sovereign creditworthiness**, in most cases negatively. ”

parts of the city were hoarding rice, the stage would have been set for severe unrest and eventually collapse of an empire; a scene not dissimilar to ones that may have occurred in the declining years of the Roman, Mayan and Pharoahnic Empires.

Quoting from a recent S&P rating report:

*“Climate change is likely to be one of the global mega-trends impacting sovereign creditworthiness, in most cases negatively.”*

*The impact on creditworthiness will probably be felt through various channels, including economic growth, external performance, and public finances.*

*Sovereigns will probably be unevenly affected by climate change, with poorer and lower rated sovereigns typically hit hardest, which could contribute to rising global rating inequality.”*

## Business Continuity

So where does preparedness of the supply chain come into the consideration? Businesses have to consider six key parts of a supply chain:

**Production** – What should be produced in what quantity and quality?

**Supply** – How and where the goods are to be made or sourced?

**Inventory** – How much to maintain?

**Location** – Where to site plants and warehouses?

**Transportation** – Ground, air, or sea?

**Information** – How to obtain, organize, and manage all the information related to the business?

In the 21st century, has the quest for lowest-cost production and hyper-lean supply chains overridden and exposed vulnerability to significant business risk?

The lean supply chain has completely decentralized manufacturing. Naturally, when things go as planned, the system benefits everyone in the chain, but when things go wrong, because of the interconnected nature of supply chains, the economic impact of these disasters

will be felt well beyond the disaster-affected locale. Witness the effects on the global automotive and hard disk drive supply chain from the 2011 flood in Thailand.

So perhaps, the real cost advantage may not go to the manufacturer with the nimblest supply chain but the company with the most robust one. Preparing for currently unforeseen events may not necessarily be a stretch to the imagination. Much of business practice already premise on asking oneself ‘what if’, but the gap may come if the answer is simply an extrapolation of the status quo and more of the same.

### Mapping global supply networks

From a strategic perspective, companies need to map their global supply networks. Tactically, they need to understand implicitly the end-customers’ demand, and how a fall or rise in supply will impact service. Operationally, they need to be executing flawlessly on logistics like warehousing and transportation. In order to deliver on the above, the supply chain management must have agility to react speedily to sudden changes in demand or supply; adaptability to remain well in-tune with market structures and strategies, and finally to have synergy of the interests between all

the parties in the supply network to optimize the chain’s performance. Out of this comes resilience and sustainable competitiveness in a stable environment.

But if high-speed, low-cost supply chains are unable to respond to unexpected changes in demand or supply because it lacks the agility to retool, augment or re-task capacity; if demand for a particular brand, pack size, or assortment rises without warning; if companies’ obsession with speed and costs also causes supply chains to break down during the launch of new products, is it time to ask ourselves “What if” as we plan rather than “If only we had...” after the event. Then perhaps empires can be built, maintained or saved.

The most effective method of managing supply risk is to make certain it never occurs and the work needed is only an extension of good business planning in any event. The Siam Cement Group of Thailand can certainly say a thing or two on the matter. ■



*Dr. Thavirap Tantiwongse leads the development of local access policies and program implementation in the public sector as well as enhances GlaxoSmithKline’s reputation and trust among external stakeholders.*



**When things go wrong** Due to the interconnected nature of supply chains, the 2011 floods in Thailand had implications that reached well beyond Thailand’s borders.

# Information on **capacity building** for SMEs in Thailand



## **The Office of National Standardization Council of Thailand:** Accrediting business continuity management systems

The Office of National Standardization Council of Thailand (ONSC) is the national accreditation body that provides accreditation for laboratories, inspection bodies and certification bodies.

ONSC is a signatory of to the International Accreditation Forum Multilateral Recognition Arrangement (IAF MLA) for quality management systems, environmental management systems and product certification. It is also a signatory to the International Laboratory Accreditation Cooperation Mutual Recognition Arrangement (ILAC MRA) for testing, calibrating calibration and inspection.

For certification body accreditation, the council has launched 12 schemes, including business continuity management (BCP), to serve the market needs. The accreditation by ONSC demonstrates the competence, impartiality and performance capability of the company.

ONSC looks forward to enhancing the industry capability, global competitiveness and quality of life through companies by promoting and facilitating the integrity of the conformity assessment system in Thailand. ■



## **Business Continuity and Productivity Asia-Pacific Institute:**

Building organizational resilience

Business Continuity and Productivity Asia-Pacific Institute (BCPAI) is an independent non-profit organization, founded in 2012 by a group of scholars and business professionals in the field of business continuity and productivity. Its establishment was supported by various international professional and educational institutes, aspiring to increase awareness of business continuity management including risk management and productivity improvement of organizations in the Asia-Pacific region.

“The ability of an organization to survive a crisis relies frequently on the field of operational contingency planning and crisis response – or business continuity management”, says Executive Director, Pol. Maj. Dr. Komsan Sanongpong from BCPAI.

“Our goal is to assist organizations in developing their business continuity management including risk reduction and building the organizations’ resilience and capability to effectively respond to their potential threats as well as improve their productivity.” ■

[www.thebcpai.org](http://www.thebcpai.org)

## SCM International Training Center:

Professional qualifications in logistics, purchasing and supply chain management

SCM International Training Centre For Professional Qualifications (SCM-ITC) is dedicated to providing high quality, cutting edge professional supply chain management education and training programs in the Greater Mekong Sub-region and the Association of Southeast Asian Nations (ASEAN). The center is the official authorized partner for top tier global certification bodies involved in supply chain research, education and certification programs for globally recognized professional credentials.

The executive education and training programs such as the Certified Production and Inventory Management (CPIM) and Certified Supply Chain Profession (CSCP) of APICS; the International Certificates and Diploma Programs in Purchasing and Supply Chain Management of the International Trade Centre (ITC), joint agency of the World Trade Organization and United Nations; and the Professional Designation in Logistics and Supply Chain Management (PLS) of the American Society of Transportation and Logistics (ASTL), are global premier professional credential programs in the logistics and supply chain professions in the manufacturing and service industries.

The SCM International Training Centre for Professional Qualifications is also in the forefront of providing the National Occupational Standard and Professional Qualifications -training in the area of logistics management. The organization's goal is to raise the competencies of management professionals and frontline workforce of organizations involved in strategic global supply chain, operations, procurement and logistics management in Thailand, Greater Mekong Subregion, and the ASEAN region, to meet international standards, global best practices and sustainability. The unique multi-facet qualification training approach has made the organization a valuable regional training hub under the new ASEAN Professional Qualification Framework. ■

[www.scm-education.com](http://www.scm-education.com)



## OSMEP: Enhancing business continuity planning and insurances

Office of Small and Medium Enterprises (OSMEP) is a government agency under the governance of the Ministry of Industry of Thailand. The core mission of OSMEP is to develop a master plan and an action plan to support small and medium enterprises (SMEs) in Thailand, which are regarded as the backbone of the country's economy. With 2.65 million enterprises in Thailand, SMEs robustly contribute to the creation of 11.7 million jobs, which is equivalent to 78 percent of total employment. The Economic Value Added (EVA) generated by SMEs also adds up to THB3.86 million.

Recently, OSMEP's works have involved providing assistance to SME entrepreneurs affected by the THB300 minimum wage policy, particularly those who received a direct impact from higher cost of labor.

With regard to the political unrest in Thailand, OSMEP has strongly recommended SMEs to apply for Business Interruption Insurance in order to cover plausible financial losses. OSMEP has also encouraged SMEs to consider certain issues such as alternate warehouse, temporary employment, cloud backup and financial management.

In addition, OSMEP has prepared SMEs for the upcoming droughts by promoting the use of business continuity planning (BCP) among them. By organizing BCP trainings nationwide, OSMEP aims to increase awareness on the importance of BCP among Thai SMEs. This effort is to ensure that SMEs can continue their businesses without closure or disruptions despite facing disasters. ■

[www.sme.go.th](http://www.sme.go.th)



# In Brief

## Shane Wright appointed Executive Director of ADPC

Shane Wright, AFSM, has been appointed Executive Director of ADPC starting from 1 January 2014. Previously, Mr. Wright served as Chief Officer and Executive Director for Emergency Management at Metropolitan Fire and Emergency Services Board (MFB) in Australia.

“We recognize that there are competing interests across the region for community services. However, we will continue to focus on sustainability in building the capacity of countries as well as on the institutionalization of improved public safety,” says Mr. Wright. ■



## Promoting investments for resilient nations and communities

The Royal Thai government in collaboration with United Nations Office for Disaster Risk Reduction (UNISDR) organizes the 6th Asian Ministerial Conference on Disaster Risk Reduction in Bangkok on 22–26 June 2014 with the main theme *Promoting investments for resilience nations and communities*.

The conference will be a venue for countries, organizations and individual practitioners to meet and discuss the way forward in reducing disaster risk in the region. As it is the final regional inter-governmental meeting in Asia before the completion of the Hyogo Framework for Action 2005–15 and the Third UN World Conference on Disaster Risk Reduction (3 WCDRR) in 2015, the meeting will consolidate the outcomes of extensive consultations on the post-2015 framework for disaster risk reduction for a coherent Asia-Pacific Inputs for the HFA2 -documents, which will serve as reference for regional governments in the global discussions and negotiation toward the adoption of the framework at the world conference.

The focus on private sector engagement will be highlighted during the 6th AMCDRR as private investments constitute 70–85 percent of development investments– globally and also in Asia-Pacific. Resilience of private investments is instrumental for the resilience and competitiveness of national economies. The ways in which private investments are made will either increase or reduce future disaster and climate risks. The new dynamics in building public private partnerships for disaster risk reduction will need to be captured to guide future actions, especially for the implementation of the post-2015 framework. ■

For more information, visit: [6thamcdrr-thailand.net](http://6thamcdrr-thailand.net)

## The RCC calls for investments in risk-sensitive development to prevent disaster losses

The costs associated with the efforts to mainstream disaster risk reduction into development should be recognized as savings against future losses caused by disasters, states the Regional Consultative Committee on Disaster Management (RCC).

In the official statement released as an outcome of the RCC's annual meeting on 1–3 April 2014 in Nay Pyi Taw, Myanmar, the member countries emphasized the need to incorporate climate change adaptation into future development planning.

“Considering the growing role of climate change as a driver of disaster events (...) and in response to the ongoing growth and development of our societies and economies, and the growing urbanization in our countries, we firmly believe that sustainable development has to be risk-sensitive”, the delegates of the meeting stated. For more information visit: [rccdm.net](http://rccdm.net) ■

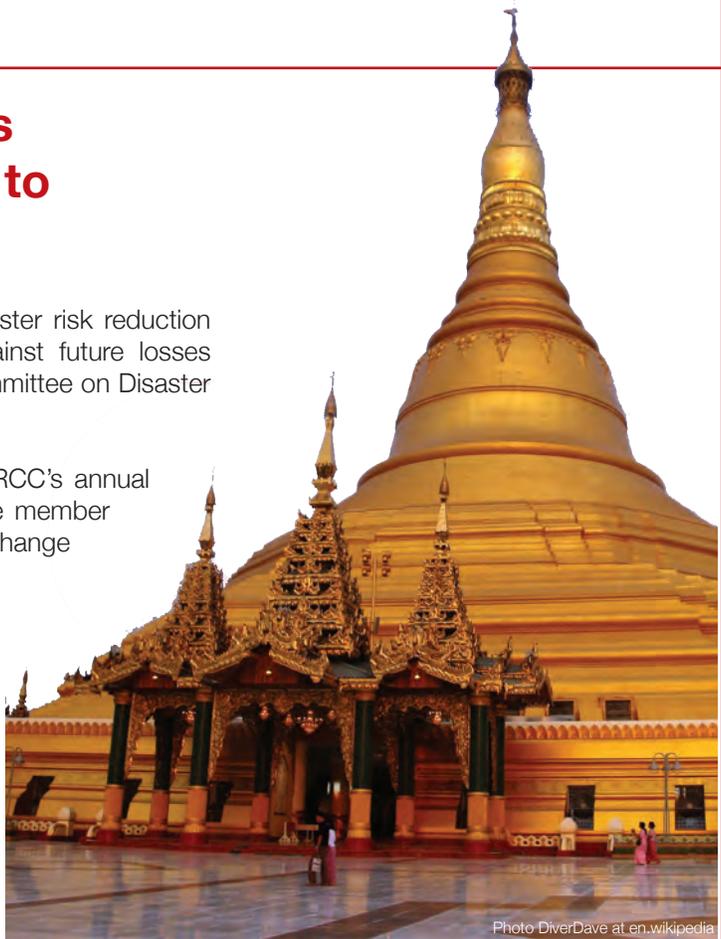


Photo DiverDave at en.wikipedia

## iPrepare: Increasing students' knowledge of disaster risk reduction

ADPC has launched a new initiative, iPrepare, to raise public awareness of the importance of preparing to natural hazards. The campaign was piloted at Hanoi School of Public Health and Vietnam National University in Vietnam this spring, inviting students to create news stories about their local community's preparations for natural hazards.

“Through this campaign, we want to build students' capacity to understand disaster resiliency and how they can contribute to better preparing their communities for disaster”, says Bill Ho, Head of Department of IT and Communication at ADPC.

The iPrepare launch lectures with introduction to disaster risk reduction in March attracted over 300 students to improve their knowledge about disaster preparedness. The stories submitted by the students during the spring can be read online at: [adpc.net/iprepate](http://adpc.net/iprepate). ■

iPrepare?  
do you i

**Since 2007, you have strived to enhance public private partnerships in the Greater Mekong Subregion. How would you describe the current progress?**

The initiative has made a lot of progress since 2007. I remember an event where a Vietnamese Vice-Minister and Vietnam Chamber of Commerce and Industry signed an agreement on long-term partnership to work together on disaster preparedness. It was a satisfying moment for me personally.

**It must have been difficult to bring the two strong partners together?**

Already back then, ADPC supported the idea of private enterprises' engagement in disaster risk reduction. Public private partnerships in the Greater Mekong Subregion offered a framework and an innovative method for the cooperation in Vietnam. The framework brings together government agencies and private sector entities that share aims and responsibilities, with mutual benefits to both parties.

**Asia-Pacific Economic Cooperation (APEC) promotes private sector engagement in disaster risk reduction. What was APEC's role in Thailand following the 2011 floods?**

I was involved in the flood response and can imagine the extent of losses of industrial estates. The APEC initiatives on business continuity planning and supply chain management played an important role.

**Business continuity planning is a relatively new concept in the developing economies. Will SMEs be willing to have one?**

The Government of Thailand is increasingly promoting incentives for SMEs to adopt measures leading to resiliency. Businesses take it for their own benefit and for the safety of their employees. I am sure that SMEs will be willing to have a business continuity plan (BCP) as part of their business plan.

**You are known as an advocate of community-based approaches in disaster risk reduction. Does the private sector benefit from such initiatives?**

Yes. Private sector enterprises aim to build a good image, and by contributing to community-based activities, they can win the hearts of the community members. The business community needs to participate in disaster risk reduction efforts

# Q&A

**An interview with  
Dr. Bhichit Rattakul.**



Photo Suchakrey Kongpila

in the communities, but securing business continuity during emergencies is the priority.

**What is the private sector's role in disaster risk reduction?**

Realizing that business entities are essential partners in reducing economic and human losses, they need to be more engaged in the disaster risk reduction dialogue. Industries such as telecommunications, logistics, transports, engineering, construction and insurance business are at the heart of sustainable development.

**ADPC works with the Office of Small and Medium Enterprises Promotion Office (OSMEP) of Thailand to enhance the resilience of the private sector.**

**What has been achieved thus far?**

There has been increased awareness of the importance of SMEs' BCPs among the participants attending the national consultations. The Thai Chamber of Commerce also expressed their interest in promoting BCPs for their members. The trainings have built the capacities of SMEs in preparing their plans.

**ADPC is launching an initiative called *iPrepare Business*. What is this program about?**

Learning from the past experiences and stressing the importance of private sector resilience, the multi-year program will focus on creating awareness of resilient investment among the governments and the private sector. The main feature will be a single-window facility to provide technical advisory on risk assessment in the business sector. We are going to create an enabling environment and demand for disaster resilience in the private sector. The services will be free of charge but contributions from the private sector will be raised.

**What do you expect from the 6th Asian Ministerial Conference on Disaster Risk Reduction?**

A dedicated technical session and several side events will foster a partnership between the public and private sectors. I am convinced the discussion will lead to a roadmap, which helps to increase knowledge and capacity in resilient business practices. ■



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