In this issue of the APEC SME Monitor, a variety of topics were discussed through the experts of APEC SME Crisis Management Center. Under the first section, "SME Development", the need to build disaster resilient societies has been widely reiterated due to the serious damages from natural disaster. Expert refers to the statistics of Thailand flood impact on the local automotive production and supply chains during 2011, where considerable emphasis was placed on the importance of developing public-private partnerships within our own economies to ensure long-term sustainability of businesses.

In the "SME Challenges" section, experts continue to address the Canterbury earthquake and summarize the impacts the earthquake had on agricultural industry. Experts also outline how earthquakes are the threats undermining the agricultural industries. For instance, the disruptive impacts of earthquakes may have on agricultural industries are such as the interruption of electrical and water service, structural damage, and non-structural damage. The greatest operational challenges the industry face after the earthquake were stress, wet ground conditions and physical damages sustained on-farm. Experts, in this section, identify the factors helped mitigate earthquake-related impacts.

In the "SME Policy" section, in accordance with the program, "Three Industries, Four Reformations", from Chinese Taipei, which focuses on developing a service-oriented manufacturing industry, an internationalized, high-tech service industry and a uniqueness-oriented traditional industry, the expert takes the "internationalized and high-tech service industry" for example to assess and recommend strategies for expanding new customer segments and potential markets in the future.

In the "Expert Perspective" section, due to changes in the global consumption market and manufacture bases, product competition becomes more intense. In the expert’s view, an enterprise’s overall brand experience can truly be established only when the design and user-oriented mindset is carried out in the strategic planning and design implementation. If Chinese Taipei’s true cultural characteristics is put into products and services that create a new Eastern aesthetic, this would no doubt be a new opportunity to promote Chinese Taipei’s brands on a global platform.

In the "SME News" section, the 35th APEC Small and Medium Enterprise Working Group (SMEWG) Meeting and the 19th APEC Small and Medium Enterprises Ministerial Meeting (SMEMM) were held in St. Petersburg from 1 to 3 August. A complete report on the meetings included is the monitor.

Under section "Global Trend", we are glad to cooperate with "Risk + Insurance Quarterly" issued by the international insurance broker Aon Risk Solutions. The main purpose of "Risk + Insurance Quarterly" is to provide the information of business risk management and risk transfer, which is similar to this monitor. Therefore, we would like to offer much useful information about risk management to the SMEs by exchanging articles with each other.

Johnny Yeh
Executive Director
APEC SME Crisis Management Center
Resilient Economies and Business Continuity Planning for Natural Disaster Risk Reduction

The year 2011 has been the costliest ever in terms of natural disasters with nearly USD 380 billion lost globally. Asia and Pacific shared the majority of direct loss due to the Great Eastern Japan Earthquake and Tsunami as well as the unprecedented flooding in Thailand. The recently held “The World Ministerial Conference on Disaster Reduction in Tohoku” in Japan between 3-4 July 2012 reiterated the need to build resilient societies to disasters, the critical importance of realizing human security as a basis of such resilient societies, the long-term economic efficiency of investment in disaster reduction, the importance of disaster preparedness and sustainable recovery, and the call for mainstreaming disaster reduction at every level of public services and international efforts for that end.

Business community need to respond to the ever increasing disaster risks that in recent years have significantly raise the cost of disasters, for example the concentration of industries in disaster-prone areas, urbanization, and climate change. Resilient economics are crucial elements for resilient societies. The private sector need to acquire acute sense of the importance of establishing effective Business Continuity Plans (BCPs) for individual companies and production/commerce networks as part of their preparedness, considering possible wide-spread consequences of natural disasters to their globalized economic activities.

Both the mega disasters in Asia last year, not only had a major effect on local automotive production and supply chain disturbances but also caused short-term effect on regional and global supply of automotive parts and vehicle exports. The severe effect on auto parts makers caused a serious disruption in the supply chain structure. This situation had a cascading effect on automotive assembly and production felt almost globally. Disruptions in the supply of parts have been the main reason for many carmakers’ plants having to stop their assembly lines. During the Thailand floods, Honda, one of the leaders in Original Equipment Manufacturers (OEMs), had to stop its production mainly because the plant is submerged with water while Toyota stopped production due to supply chain issues.
chain disruption at their prime assembly locations. The overall impact of the floods on different OEMs is presented below:

### Table 1: Organisation revenue changes following the February 2011 earthquake

<table>
<thead>
<tr>
<th>OEM</th>
<th>Plant Location</th>
<th>Severity of Impact</th>
<th>Production Status during Floods</th>
<th>Production Loss (In Thousands)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toyota</td>
<td>Chachoengsao</td>
<td>Medium</td>
<td>Halted- Supply Chain Disrupted</td>
<td>30-35</td>
</tr>
<tr>
<td>Honda</td>
<td>Ayutthaya</td>
<td>High</td>
<td>Halted- Assembly Plant Flooded</td>
<td>10-15</td>
</tr>
<tr>
<td>Nissan</td>
<td>Samut Prakan</td>
<td>Medium</td>
<td>Affected –Supply Chain Disrupted</td>
<td>10-12</td>
</tr>
<tr>
<td>Mitsubishi</td>
<td>Chonburi</td>
<td>Medium</td>
<td>Halted- Supply Chain Disrupted</td>
<td>12-15</td>
</tr>
<tr>
<td>Ford &amp; Mazda</td>
<td>Rayong</td>
<td>Medium</td>
<td>Halted- Partial Production Disruption</td>
<td>05-08</td>
</tr>
<tr>
<td>ISUZU</td>
<td>Chachoengsao</td>
<td>Medium</td>
<td>Halted- Supply Chain Disrupted</td>
<td>10-15</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>80-100</strong></td>
</tr>
</tbody>
</table>

Due to the above impact on the larger OEMs, more than 570,000 SMEs in Thailand were directly affected. These SMEs were mainly from manufacturing, trade and maintenance and service sector. More than 2 million jobs were lost with monthly business loss of more than USD 2.5 billion. Some of the factors that are likely to be considered by the carmakers in future are to increase the stockpile; multi sourcing strategy as well as climatic de-risking of the supply chain that involves carmakers investments at geographical locations that are least impacted due to natural disasters. This will have direct impact on the SMEs operation.

Thailand' s economy was broadly affected, experiencing temporary halt in some production sectors; it recovered by the first quarter of 2012 at a favorable rate of growth. The overall economy unexpectedly expanded in the first quarter as factories resumed production and domestic consumption revived after last year' s floods. The gross domestic product increased 0.3% in the three months through March 2012 from a year earlier, after contracting a revised 8.9% in the previous quarter as per the National Economic and Social Development Board (NESDB). Foreign investors have expressed confidence to continue their businesses and maintained production base in Thailand. This certainly shows the resiliency of Thai businesses as production base and strong supply network. However, both Thai and foreign investors strongly felt the need of a convincing disaster risk management strategy from the government so that they can make a decision on future business operation and investment expansion. While the government' s disaster risk management strategy will be undoubtedly essential factors contributing to economic growth in future, business have to be prudent regarding other risks factors as well.

The APEC High Level Policy Dialogue on Disaster Resiliency in 2011 emphasized the need to develop public-private partnerships within their own economies as the private sector owns and operates a great deal of an economy’ s critical infrastructure and has experience and knowledge regarding resilient construction techniques, the development of sustainable urban areas, energy
safety, and the protection of critical resources. It encourages a "Whole of Society" approach to developing and strengthening public-private partnerships that support business and community resilience to disasters. This includes involving all levels of government, non-government, and the private sector for protection of both their own assets and the surrounding community to ensure long-term sustainability of their businesses.

The BCP for the major companies as well as the SMEs are the key elements in protecting the business as well strengthen recovery capabilities after an extreme situation. Having Business Continuity Management (BCM) in place demonstrates a duty of care to customers and suppliers. Preparedness is the key because we are not sure that the disaster we preparing is the one that will occur. Business continuity is not just about the high profile disasters such as the Thailand floods in 2011 but being ready for any incident that may cause a disruption to business. With the compounding risks from natural hazards that we are facing as well as the impact of climate change, it is essential that the business community, particularly the SMEs in Asia and Pacific region prepare for themselves and enhances its own capacities to deal with for future disasters.
The Canterbury Earthquakes: The Impact on Farming Organisations

Introduction

On 4 September 2010 the Magnitude 7.1 "Darfield" Earthquake marked the beginning of the Canterbury earthquake sequence. The Darfield earthquake produced strong ground shaking throughout the central Canterbury Plains, affecting rural areas, small towns and the city of Christchurch. The event produced a 29 km long surface rupture through intensive farmland, causing localised flooding and liquefaction. The central Canterbury Plains were subjected to a sustained period of thousands of aftershocks in the months after the Darfield earthquake.

The primary sector is a major component of the in New Zealand economy. Business units are predominantly small family-run farm organisations, though there are increasing levels of corporate farming. The agribusiness sector contributes 20% of real GDP and 47% of total exports for New Zealand. Of the approximately 2,000 farms that are located in the Canterbury Plains, the most common farming sectors in the region are Mixed farming (mostly comprised of sheep and/or beef farming), Dairy farming, and Arable farming (cropping). Many farms on the Canterbury Plains require some form of irrigation and are increasingly capital intensive, reliant on built infrastructure, technology and critical services.

Farms are of great significance to their local rural economies, with many rural non-farming organisations dependent on the health of local farming organisations. Despite the economic significance of the sector, there have been few, if any studies analysing how modern intensive farms are affected by earthquakes.

The aim of this report is to (1) summarise the impacts the Darfield earthquake had on farming organisations and outline in general terms how farms are vulnerable to the effects of an earthquake; (2) identify what factors helped mitigate earthquake-related impacts. Data for this paper was collected through two surveys of farming and rural non-farming organisations following the earthquake and contextual interviews with affected organisations. In total, 78 organisations participated in the study (Figure 1). Farming organisations represented 72% (N=56) of the sample.
Observed Impacts of the Darfield Earthquake

Immediately after the Darfield earthquake there were significant concerns of widespread impacts to the Canterbury agricultural sector and rural communities. The effects of the earthquake varied significantly between different farming sectors, the level of ground shaking or liquefaction experienced and pre-existing state of individual organisations.

Farming organisations were most affected when the core base of production was impacted (e.g. damage to crops or livestock). Attention immediately focused on farms located on the 29 km fault scarp, who had to contend with damage to land and farm infrastructure due to the ground deformation. Farms impacted by liquefaction ejection to the south-west of Christchurch were also seriously affected.

In the months following the Darfield earthquake, farming organisations identified the most disruptive impact to be the interruption of electrical services. For dairy farming, dairy sheds (the structure where the cows are milked) are only operable with electricity and the health of the cows is compromised when they are not milked at least once a day. Other disruptive impacts cited by the majority of farms were the interruption of water service (either due to well damage or breaks in water lines), structural damage, and non-structural damage. Some examples of these damages can be seen in Figure 2.

The majority of farming organisations reported being "affected in some way" were located approximately 20 km from the fault surface expression. On-farm infrastructure that sustained
structural damage included grain silos, residential houses and milking sheds (Figure 2). In some cases, structural damage was a direct result of liquefaction, but was usually isolated. Non-structural damage was generally attributed to ground shaking, as was damage to irrigation lines. Fence-lines were damaged in areas where surface deformation or fault offset were observed. Damaged fence-lines created significant livestock management issues, and also threatened crop for arable farming. Farming organisations located proximal to the fault scarp observed new hills, scarps or cracks. Only 13% of farms sampled reported observing liquefied material deposits. Importantly however, liquefaction reduced farm performance by damaging topsoil, which limited dry matter production capacity and available feed for livestock. Other patterns of deformation reported were changes in the water table which caused flooding in localised areas, surface cracking, changes to farm boundary lines, and in one case, surface flooding caused by the fault scarp’s vertical displacement of a river channel. Localised flooding has been shown to decrease paddock productivity, reduce access to feed, and threaten livestock. One-third of the farms that experienced ground deformation found that the ground deformation continued to change one month following the event.

While the effects of an earthquake can vary between different farming sectors, all farming sectors exhibited similar levels of disruption. Dairy farms reported to be most affected by electricity disruption and structural damage. Mixed and arable farms were most significantly affected by the interruption of water services. The degree to which farms were affected by water interruption, or natural disasters in general, is time-sensitive as farming vulnerabilities change significantly over the course of a year; at particular times of the year, such as during lambing or the spring growth period, disruption of farming operations can be devastating to profitability. However, irrigation was not necessary at the time of the event and therefore the effect was potentially lessened.
Dairy farms were able to mitigate the impact of electricity disruption with the use of a generator, though few farms had generators available. Dairy farms that suffered catastrophic structural damage to their milking shed used the facilities of neighbouring farms, often without prior arrangement or compensation. Livestock are not especially vulnerable to strong ground shaking, however cows may be injured during ground shaking if they are being milked or are standing on concrete pads.

In general, farms in areas that experienced higher intensity shaking based on the Modified Mercalli Intensity Scale (which is a subjective assessment) were more likely to be affected. Furthermore, the degree to which the farm was affected was loosely correlated to the strength of the shaking.

**Greatest Challenge**

As shown in Figure 3, the greatest operational challenges most frequently cited by farmers after the earthquake were stress, wet ground conditions (relating to earthquake induced changes to the water table), and physical damages sustained on-farm. Stress was commonly associated with sleep deprivation compounding the challenges of managing day-to-day activities. Irrigation concerns were also raised as a significant issue, commonly regarding the increased turbidity of well water. For dairy farmers, stress levels were often identified with concerns around livestock welfare and the ability to milk livestock in the face of electrical disruptions. Livestock management was also of concern as many fence lines were damaged and farmers found difficulty accessing damaged areas due to the wet conditions.

**Figure 3.** Word cloud illustration of the greatest challenges as reported by affected farming organisations.
Interestingly, the psychosocial trauma sustained by the event was of equal if not greater significance to the farmers' ability to maintain operations, than were the physical impacts incurred on-farm. Some of the self-reported psychosocial products of stress were:

1. sleep deprivation;
2. noticed decreased mental acuity; and
3. feelings of uncertainty.

Sleep deprivation was a common issue for many Canterbury residents in the aftermath of the earthquakes, with ongoing frequent aftershocks disrupting sleep. The earthquake and subsequent aftershocks were also the cited cause for decreased mental acuity, which was described as an inability to focus. Similar results were observed in a clinical study, which concluded that the earthquakes led to an increase in the likelihood of errors of omission. Feelings of uncertainty were commonly associated with managing earthquake impacts, such as un-milked cows and potential damage to irrigation infrastructure. Overall, sleep deprivation and feelings of uncertainty were the most commonly cited products of stress.

Mitigating Factors

The three most commonly cited factors by responding farm organisations in mitigating the effects of the earthquake were:

1. well designed and well-built buildings (76%);
2. relationships with their neighbours (71%);
3. insurance (71%).

The use of neighbours as an effective means to mitigate the effects of the earthquake was found to be unique to farming organisations. Comparatively, rural non-farming organisations cite their relationship with banks or lenders (72%), relationship with suppliers (68%), and the availability of spare resources (56%) as mitigating factors. "Relationships with neighbours" was only cited by 17% of rural non-farming organisations.

Neighbour relationships were used for both psychosocial support purposes as well as for organisational purposes. As shown in Figure 4, the use of these relationships was found to be most helpful amongst farms that were either most affected, or in the areas that experienced the strongest shaking intensities. Examples of farmers' use of neighbour relations include the sharing of organisational resources, such as dairy sheds, or simply speaking with one another. These results are illustrative of the importance of social networks in rural farming communities.

Figure 4 - Illustration of the relationship between total organisational disruption, MMI and the use of neighbours to mitigate the effects of the earthquake. The likelihood of the farming organisation to find the relationship with their neighbour helpful in mitigating the effects of the earthquake is shown using the grayscale gradient.
Conclusions

From the results, three major conclusions stand out. The first is that farming organisations reported being most vulnerable to disruptions in electricity and water supplies. However, no single farming sector was found to be more disrupted than any other by the Darfield earthquake.

Secondly, farming organisations are very reliant on their informal network as a means to mitigate the effects of an earthquake. Neighbour relationships were used to decrease earthquake-related stress, even when the organisation was not very affected. Comparatively, rural non-farming organisations found their relationships with their banks, lenders and suppliers more helpful in mitigating the effects of the earthquake.

Lastly, stress was most commonly cited as the greatest challenge for the organisation in the aftermath of the earthquake. The importance of the farmer’s psychosocial health is likely to be the most critical vulnerability for farming organisations, and there is value in providing psychosocial support to rural communities in the event of an earthquake.
The Innovation Policy Challenges of the "Three Industries, Four Reformations": A Case Study of Developing an Internationalized and High-tech Service Industry

The Executive Yuan held an operational meeting on 9 May 2012, in which Premier Chen stressed the importance of continuously promoting the nationwide program called "Three Industries, Four Reformations", which focuses on developing a service-oriented manufacturing industry, an internationalized, high-tech service industry and a uniqueness-oriented traditional industry. Chen also expected government agencies to increase their sensitivity towards industrial development and to be proactive. In addition, government agencies were required to propose "model highlights" for industrial development.

Therefore, the Ministry of Economic Affairs (MOEA) decided to use "Three Industries, Four Reformations" as the main strategy for transforming Chinese Taipei’s economy and boosting industrial innovation. MOEA’s subordinate agencies would also need to adapt their industry and technology policy accordingly. Developing the "Three Industries, Four Reformations" strategy under the existing Innovative Technology Incentives Program is not enough; changes in industry and technology policy, innovation policy design as well as operation mechanism are also essential for overcoming Chinese Taipei’s long-standing obstacles to industrial innovation.

For instance, developing an internationalized and high-tech service industry poses challenges to existing policy design and concept. Obvious differences between R&D innovation in the manufacturing industry and service innovation are as follows: 1. R&D innovation in the manufacturing industry has a clearer structure while service innovation is the result of a logical deduction in a certain context. 2. Service innovation relies more on external circumstances than R&D innovation in the manufacturing industry. However, service sector development policy used to focus more on strengthening supply (value-added technology) capability and less on deregulation and guiding strategies for the demand side, which are indispensable for educating the market. 3. Clear relationship between upstream and downstream firms can be observed in R&D innovation in the manufacturing industry, while service innovation is characterized by a diversified innovation network. Additionally, regarding innovation opportunities in the service industry, types of operation (creating new market segments/customers) are more than kinds of business, yet it is more challenging to promote service innovation in terms of kinds of business (types of operation and kinds of business may vary due to different units or methods of analysis).
In order for service innovation to create new kinds of business and new highlights, industrial clusters have to be utilized to initiate the snowball effect and further educate and expand the market. To achieve this objective, innovation platforms need to be provided. For example, foundry serves as an innovation platform for IC design, and Apple’s iTunes and App Store facilitate software companies and individual developers to invest in and develop new applications. Innovation platforms need firms to actively take the role of "owner", but the government can help innovators make use of innovation platforms. However, innovation in types of operation may replace existing ones, for instance, the impact brought to existing hair salons by NTD 100 fast haircut service, which undermines the economic effects (no increasing customer base and growth momentum) created by service innovation.

On the other hand, talent flows across the Taiwan Straits and China tourists to Chinese Taipei, on package tours or independent arrivals, have established a new customer base for Chinese Taipei, creating new external demand and driving the development of internationalized and high-tech service industry. These are new customer segments and market potential to be tapped by Chinese Taipei government.
Trends and Opportunities for Assisting Chinese Taipei's SMEs to Utilize Design Aesthetics in Industrial Transitions

The International Council of Societies of Industrial Design (ICSID) defines design as: "a creative activity whose aim is to establish the multi-faceted qualities of objects, processes, services and their systems in whole life cycles. Therefore, design is the central factor of innovative humanisation of technologies and the crucial factor of cultural and economic exchange."

In recent years, as Chinese Taipei's SMEs face the changes and impacts of a global economy, they have strived to promote transition for more commercial opportunities. However, due to changes in the global consumption market and manufacture bases, cost advantages cannot create the same price profits as it once did. Outdated strategies make product competition even more intense as product homogenization force businesses to move towards a Red Ocean Strategy. Yet, as we look at the current global leading brands, we can see that all of them continue to inspire and influence consumer experiences through their designs. Therefore, we can see that Chinese Taipei's SMEs will obviously face bitter challenges in this global branding competition.

Professor Kiyoshi Miyazaki of Japan's Chiba University says: "The competition within the 21st century global market economy is that of design. Businesses can no longer avoid this."

However, the greatest advantage of Chinese Taipei's current industry is the good foundation laid down by the manufacturing industry in the past. Due to its integrated Original Equipment Manufacturer (OEM) experience in industries such as 3C, bicycle, and mechanics, Chinese Taipei has established an industrial chain which it can be proud of. Therefore, it would be a great transition point if Chinese Taipei combines these foundation stones with its unique culture, to create a new generation for the Eastern culture and aesthetic industry.

"Design" plays a key role in the aesthetic evolution of an enterprise's branding, products, and services. Not only can we provide an unforgettable experience for the consumers while carrying out the design, we can also allow the consumer to showcase their aesthetic taste through personalized designs. However, the key factor here is that, although companies understand the value of design aesthetics, it is difficult to start transforming design into an action. In fact, design exists within every aspect of the organization; an enterprise's overall brand experience can truly be established only when the design and user-oriented mindset is carried out in the strategic planning and design implementation.
As we look at three levels of corporate strategies planned by average enterprises, which includes planning an enterprise’ s branding strategy, design strategy, and market strategy, we can see that design management is the key element that connects each company strategy level. Chinese Taipei’ s companies are best at carrying out creativity absorbed from abroad, but lacks in developing original creativity and innovation. Design management basically emphasizes the need for researching on market demand, user experience and future living trends starting from design investigation; with the research results, we can then sum up the market information and positioning that a company needs. At the current stage, Chinese Taipei’ s enterprises usually use the technology and resources they have now to plan on a product’ s future prospect but they would most often overlook the user’ s inner desires and emotional needs. If companies can combine designs within the process, they can also create an overall customer experience, all of which creates priceless brand impressions in the end.

To increase the motivation for Chinese Taipei’ s SMEs to develop original designs, we can start with thematic design innovation workshops and lead corporations to think innovatively through the interaction with interdisciplinary professionals as well as group work. The operation and success of the workshop will be based upon the theme allocation of interdisciplinary lecturer teams, application method, group operation and coaching groups. Enterprises can also combine the government’ s abundant resources with various plans to fulfill the enterprise' s needs at each stage. As for common design resources such as color and material, technology development, design aesthetics, human factor engineering, and universal design, companies can search for common databases and design fields created by government organizations to decrease the costs of creating their own; companies can also create interdisciplinary cooperation by communicating with different industries.

Design application is not only about changing and embellishing a product’ s appearance. For example, other than fulfilling the market’ s "fast-fashion" needs, Zara also actively combines ancient architecture with modern fashion and adds elements of popular music; this not only invigorates the overall sales space, but also allows its customers to feel as if they were in a dream interwoven with old and new elements. Therefore, we can see that by elevating a design’ s exterior techniques to an invisible branding experience can also be a good strategy for our domestic SMEs. Most importantly, Chinese Taipei’ s enterprises must make the best out of Chinese Taipei’ s mature design talents. With the past training in industries such as technology, Chinese Taipei has acquired abilities in design implementation that would be difficult even for European markets to imitate. Yet if Chinese Taipei’ s true cultural characteristics is put into products and services that create a new Eastern aesthetic, this would no doubt be a new opportunity to promote Chinese Taipei’ s brands on a global platform.
Promoting SME Cooperation for the Innovative Growth in the APEC Region

The 19th SME Ministerial Meeting (SMEMM) and the 35th APEC SME Working Group (SMEWG) Meeting were held in St. Petersburg, Russia, from 1 to 3 August 2012. The Ministerial Meeting was chaired by Mr. Simonenko Vladimir, Deputy Minister for Economic Development of the Russian Federation, while the Working Group Meeting was chaired by Dr. Robert Lai from Chinese Taipei.

The 19th APEC SME Ministerial Meeting commenced with the theme of “Promoting SME Cooperation for the Innovative Growth in the APEC Region”. The 19th APEC SME Ministerial Statement was released right after the meeting. In the Joint Statement, APEC Ministers endorsed a new four-year strategic plan for guiding member economies’ on-going work to address critical issues and concerns pertaining to SME growth in the APEC region and recognized the efforts made by the SMEWG. Furthermore, APEC Ministers agreed that promoting start-ups which were identified as the most important stage of entrepreneurship.

Strategic Plan as the Guide for Future Direction, Assisting SMEs to Overcome Barriers

As endorsed in the 19th SMEMM, the SMEWG Strategic Plan 2013~2016 reflects evolving policy directions for SMEs and coordinates joint efforts in line with APEC priorities across member economies. To liberalize trades and investments while focusing on the APEC goals of the year, member economies agreed to take concrete actions individually and collectively to assist SMEs in 1) building management capability, entrepreneurship, and innovation; 2) easing the access to financing, and; 3) improving business environment, market access and internationalization.

In addition, along with the endorsement from the Joint Ministerial Meeting by SME Ministers and Ministers Responsible for Trade in 2011, APEC is taking a comprehensive approach to the development for SMEs, consistent with their importance to the APEC economies. This includes continuing efforts to enhance the SME sector’s inclusiveness and address ground-level barriers to expand innovative growth. In response to the Ministers’ instruction to address these barriers, officials begin to
take concrete actions to enhance SMEs’ capacities to overcome the barriers. Numerous projects have been implemented by SMEWG to address the barriers, and these projects are proposed as long term cooperative programs to assist SMEs. Minister recognized the voluntary efforts made by CTI and SMEWG members, and supported the “Compendium of Financial Products Available to SMEs in the APEC Economies” and the multi-year project on “Business Ethics Capacity Building for SMEs in the Medical Devices, Construction and Bio-Pharmaceutical Sectors” by the United States, the three phase studies on SME Internationalization Across APEC Economies” by China and Singapore, and the “APEC Compendium of Innovative Strategies Available to SMEs for Reducing Transportation Costs” by Chinese Taipei.

Start-up Accelerator in Lead of International Trends, Facilitating the Development of APEC Region

To incubate entrepreneurs, start-ups, and SMEs, Chinese Taipei, as the Chair of SMEWG, proposed the “APEC Start-up Accelerator Initiative”, serving as a platform to facilitate communication and cooperation between member economies, leading to higher growth and development.

During the 19th SMEMM and 35th SMEWG Meeting, Ministers endorsed the APEC Start-up Accelerator Initiative proposed by SMEWG Chair. The Initiative serves as a framework to facilitate collaboration between member economies, and enables a greater focus on projects enhancing start-ups and entrepreneurship. The Initiative also seeks to facilitate innovative growth of SMEs and encourage start-ups through connecting activities among high profile entrepreneurs, successful startups, angel and venture capital funding, and business and technical high-level executives.

Given the scale and scope of potential activities under the APEC Start-up Accelerator Initiative, the initiative suggests participating APEC economies that they consider how to structure work plans for implementing APEC Start-up Accelerator into manageable steps and components, including organizing activities into short-term, mid-term, and long term deliverables. The APEC Start-up Accelerator Initiative is made up of three core elements, namely Part one: Connect - Encourage Entrepreneurship and Business Start-ups; Part two: Fund - Strengthening Start-ups’ Access to Financing; and Part three: Advise - Enhance Start-ups’ Capacity to Internationalize, and Assist Start-ups to Identify Foreign Business Opportunities. Through advancing the three core elements, officials are able to ease the start-ups’ assess to funding, opportunities, and connections while facilitating them individually and collectively to attain their fullest growth potential and contribute to the achievement of APEC’s wider economic prosperity and integration goals.

Conclusion

The 19th APEC SME Ministerial Meeting and the 35th APEC SME Working Group Meeting ended successfully with the active participation of all the member economies. Chinese Taipei has completed the missions under the chairmanship through 2011 to 2012 and handover SMEWG Chair for 2013-2014 to Thailand. The projects and initiatives proposed by Chinese Taipei were supported and endorsed by the joint ministerial statement. It refers not only Chinese Taipei’s great contribution and dedication in the APEC region but also the recognition of the importance of SMEs. Chinese Taipei is committed to working closely with other member economies and other APEC fora in the future.
Global Trend

Review of Natural Catastrophes in 2011

The world experienced a very active year in 2011, marked by a series of devastating natural disaster events. Japan suffered from a historic earthquake and tsunami. The greater Christchurch metropolitan region in New Zealand was hit by two large earthquakes in the first season of the year. Tornadoes and damaging winds devastated regions in the United States and major flooding inundated vast areas in South America and Asia. 2011 was also the warmest year in history since 1880.

Global natural disaster activity in 2011 produced 253 separate events that caused significant impacts to various parts of the world. The 253 events, defined as natural meteorological or climatological occurrences that caused noteworthy insurance losses, economic losses, human casualties or a large humanitarian impact, aggregated to an economic loss of USD 435 billion and insured losses of USD 107 billion, according to Aon Benfiled. The economic losses in 2011 make it the costliest natural disaster year on record. The insured losses incurred in 2011 make it the second costliest year on record – second only to 2005’s USD 120 billion, which was dominated by the USD 90 billion in losses caused by the three major hurricanes – Katrina, Rita and Wilma.

Munich Re, one of the world’s leading insurers, offers slightly different statistics about the natural catastrophes in 2011. However, the common trend remains the same: the figures are increasing. In 2011, Asia, the United States and the Pan-Pacific area endured a series of earthquakes. Most insured losses resulted from the numerous severe weather outbreaks in the United States in spring and the damaging floods that ravaged Asia. In terms of economic losses, the earthquake in Japan and the tsunami that it triggered set a new record. Extensive flooding in Thailand and two earthquake strikes in New Zealand are the major events contributing to significant economic losses.

Exhibit 1. Figures of the natural catastrophes in 2011

<table>
<thead>
<tr>
<th></th>
<th>The figures of the year 2011</th>
<th>The figures of the year 2010</th>
<th>Average of the last 10 years 2001-2010</th>
<th>Average of the last 30 years 1981-2010</th>
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<tr>
<td>Number of events</td>
<td>820</td>
<td>970</td>
<td>790</td>
<td>630</td>
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<tr>
<td>Overall losses in USD millions</td>
<td>380,000</td>
<td>152,000</td>
<td>113,000</td>
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<td>Insured losses in USD millions</td>
<td>105,000</td>
<td>42,000</td>
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<tr>
<td>Fatalities</td>
<td>27,000</td>
<td>296,000</td>
<td>106,000</td>
<td>69,000</td>
</tr>
</tbody>
</table>

Source: Munich Re NatCatService Published in Jan. 2012

The July-November flooding in Thailand was the worst of its kind ever recorded in the history of Southeast Asia. Lloyd’s of London estimated in February that the Thailand floods are liable for USD 2.22 billion of net claims, the third largest loss on record in 300 years, surpassed only by Hurricane Katrina and 9/11. 2011 produced 37 separate global natural disaster events that had
economic losses that exceeded USD 1 billion. Five of the 37 natural catastrophes were above USD 5 billion. According to the National Climatic Data Center (NCDC), of the 37 global economic loss events, 17 had insured losses greater than USD 1 billion in 2011, representing a 70% increase from the threshold in 2010. The natural disasters include flooding, drought/wildfire, tropical cyclone and winter weather.

**Exhibit 2. The breakdown of economic and insured losses (by percentage) as separated by natural disaster type**

**Drastic Changes in the Global Climate**

2011 marks the 34th consecutive year with a global temperature above the average. The data from NCDC of the United States shows that the global land and ocean temperature had a positive anomaly of 0.52°C (0.94°F), the warmest mean temperature ever observed on earth since record keeping began in 1880. Severe weather events also made 2011 the sixth consecutive year with below average tropical cyclone development across all global basins, with only 39 total hurricanes, typhoons and cyclones.

**Exhibit 3. Global land and ocean temperature anomalies: 1900-2011**
Exhibit 4. Global tropical system activity over the last 25 years

Exhibit 5. Number of events with trend of the natural catastrophes worldwide 1980-2011, by Munich Re NatCatService

Exhibit 6. World map of the natural catastrophes 2011, by Munich Re NatCatService
Trend

Increasing occurrences of severe weather events across the globe have been driving up economic losses. Natural catastrophes, however, are difficult to prevent. Even with globally recognized organizations such as Colorado State University (CSU), National Oceanic and Atmospheric Administration (NOAA), and Tropical Storm Risk (TSR) which issue forecasts for hurricanes every year using scientific parameters, the dual earthquake strikes in Christchurch, the earthquake and subsequent tsunami in Japan, and the recurrent flooding in Brazil are all instances of the acts of God beyond what human beings can precisely predict.

As the economic losses caused by natural disasters increase every year, insured losses have also shown an upward trend. The flooding that hit Thailand and the earthquake and tsunami in Japan both serve as an important lesson about enterprise risk management (ERM) for the severely impacted insurance market. (As shown below)

Exhibit 7. Overall and insured losses with trend of the natural catastrophes worldwide 1980-2011

From the following top 10 economic loss events in recent 30 years put together by Aon Benfield, we may see that:

- The scale of economic losses caused by natural catastrophes is increasing and the amount is rising every year. Over the past 30 years, 7 of the top 10 economic loss events took place between 2004 and 2011, with 3 in 2011. Of the 7 natural disasters, 5 were in Asia, representing over 50% of the 2004-2011 disasters. In 2011 alone, 65% of insured losses was recorded in Asia where the average economic losses saw a 6-fold increase in recent years.

- Of the top 10 insured natural catastrophes, there were 7 hurricanes in the United States, indicating that the United States has reinforced its awareness and measures in risk management, preparedness, and risk transfer through the lessons learned from previous disasters.
Economic losses and insured losses may not be entirely related. The amount of economic losses may not be fully reflective of insured losses. The levels of enterprise risk management and risk transfer will determine the disparity between economic and insured losses.

Risk management and prevention, post-disaster measures, risk transfer, and the calculation of total cost of risk are now areas essential to business management.

Exhibit 8. Top 10 Economic loss events (1980-2011)

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
<th>Economies</th>
<th>Economic Loss (USD Millions)</th>
<th>Insured loss (USD Millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>11 Mar. 2011</td>
<td>EQ/Tsunami</td>
<td>Japan</td>
<td>210,000</td>
<td>35,000</td>
</tr>
<tr>
<td>25-30 Aug. 2005</td>
<td>Hurricane Katrina</td>
<td>The United States</td>
<td>125,000</td>
<td>66,900</td>
</tr>
<tr>
<td>17 Jan. 1995</td>
<td>Earthquake</td>
<td>Japan</td>
<td>102,500</td>
<td>3,075</td>
</tr>
<tr>
<td>12 May 2008</td>
<td>Earthquake</td>
<td>China</td>
<td>85,000</td>
<td>425</td>
</tr>
<tr>
<td>Jul-Nov. 2011</td>
<td>Flooding</td>
<td>Thailand</td>
<td>45,000</td>
<td>10,789</td>
</tr>
<tr>
<td>17 Jan. 1994</td>
<td>Earthquake</td>
<td>The United States</td>
<td>41,800</td>
<td>18,300</td>
</tr>
<tr>
<td>6-14 Sep. 2008</td>
<td>Hurricane Ike</td>
<td>The United States; Caribbean Islands</td>
<td>37,600</td>
<td>15,000</td>
</tr>
<tr>
<td>May-Sep. 1998</td>
<td>Floods</td>
<td>China</td>
<td>32,000</td>
<td>1,000</td>
</tr>
<tr>
<td>27 Feb. 2010</td>
<td>EQ/Tsunami</td>
<td>Chile</td>
<td>30,000</td>
<td>8,500</td>
</tr>
<tr>
<td>Dec. 2010-Jan. 2011</td>
<td>Floods</td>
<td>Australia (Queensland)</td>
<td>30,000</td>
<td>2,420</td>
</tr>
</tbody>
</table>

Source: Aon Benfield Impact Forecasting

※The original article was available in Risk + Insurance Quarterly Spring 2012.

※This Monitor is a publication of APEC SME Crisis Management Center and is edited by Taiwan Institute of Economic Research.
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