THAI FLOODS A WAKE-UP CALL

Thailand’s worst flood in 50 years has affected million of people with more than 600 people have died as monsoon rains and back-to-back tropical storms have hit at least 58 out of 77 provinces from Chiang Mai in the North to parts of the capital city of Bangkok near the mouth of the Chao Phraya since late July 2011. Several major industrial estates were inundated by as much as over 2 meters (6.5 feet). Over 28,000 firms and about 10,000 factories were affected by the massive flood.

The analysts estimated this disaster as the world’s fourth costliest disaster in History after 2011 earthquake and tsunami in Japan, 1995 Kobe earthquake in Japan, and 2005 Hurricane Katrina in United States. Estimated damages reached more than Bt1.3 trillion (US$42bn) in lost revenues and damage to property. The Thai Office of Insurance Commission estimated the insured losses from the affected industrial estates at US$20bn.

1. Impact of Thailand’s Worst Flood

The massive flood has hit at least seven industrial estates, including Saha Rattana Nakorn, Rojana, Hi-tech, Bangpa-in, Factory Land, Nava Nakorn and Bangkadi in Ayutthaya and Pathum Thani Provinces.

The floods have forced the closure of several major industrial estates. For weeks, factories were under several metres of water and have been unable to produce and supply key parts to global carmakers or digital and electrical goods manufacturers. It has upset supply chains worldwide.

Corporations suspended production, affecting their operations as far afield as Brazil and England. To make matters worse, these losses have come when Thailand was just recovering from the knock-on effects of the Japanese earthquake and tsunami earlier this year. The flooding has caused supply-chain disruptions and shutdowns for auto producers in other parts of Thailand even though they were less, or not at all, affected by the floods. The disruption affects not just Thailand, but the rest of the world too when it comes to producing cars and electrical goods. Automobile and electronic manufacturers are more vulnerable because they have supply chains and they need parts.

Business as Usual during the Disaster

An automobile manufacturer (Volvo)’s assembly plant for heavy-duty trucks in Thailand was operating as usual during the disaster. It was because they face no parts disruptions.
However, other automobile manufacturers (including Hino, Isuzu and Mitsubishi) were all suffering from parts shortages.

The Volvo’s plant in Samut Prakan remained dry. They secured parts and accessories from a regional distribution centre in Singapore, with only a few items such as batteries and glass supplied by local manufacturers.

2. Current Situation and the Root Causes

As of December 5th, 2011 some areas still remained under up to 6 feet underwater and many factory areas remained closed. Over 15,400 flood-hit firms nationwide have resumed their production, and more than 13,200 firms have remained closed, mainly in Ayutthaya and Pathum Thani Provinces in the central Thai region.

Flooding in central and northern Thailand blamed on both natural and manmade threats. Natural being the unusually heavy monsoon rains, while the manmade threats being the mismanagement of the country’s large dams. The disaster could have been avoided or the damage reduced if the manmade threats did not happen.

From July to October 2011, northern and central Thailand experienced their highest rainfall in 50 years, about 28% above normal.

Too much water were kept in the dams early in the rainy season, and at the end of the season they had to release a large amount of water at the same time, which had caused floods. The rains on a lengthy La Nina cycle, a weather phenomenon marked by heavy precipitation that typically follows an EL Nino period of drought, was started early and was supposed to end months ago, but it’s continued, which was quite unusual.

Assessment from the beginning of the rainy season whether there would be lots of rain and how much water should have been held in the dams was not carried out properly. Every party kept water in large dams afraid they would run out of water in the dry season. The problem was that all the full dams were discharging water simultaneously. The Central Plains below the dams had already suffered heavy rains. Consequently there was a massive amount of water. The simultaneous discharges from the dams had therefore caused flooding in many areas.
3. Lessons Learn from the Disaster

What are the lessons that we have learnt from this disaster – flood, and what should we be expecting in the future?

Drowning, danger of electrocution, contaminated water, to prevent leptospirosis (a severe bacterial infection), crocodiles escaped from farms were few to caution from the aftermath of the flood.

Preparation for the relocation of important and critical items, including replacing electrical outlets to a high and safe level becomes a requirement to safeguard from flood.

A lot of sandbag barriers were constructed to control flooding, but with limited success. Floodwalls may also not be strong enough because there are dykes made of soil, concrete and sandbag built by contractors not by knowledgeable experts. 10 metres high water blockage in Nikom Rojna industrial estate, which housed many manufacturing plants, had collapsed.

With most countries throughout Asia are prone to natural disasters such as flooding, earthquakes, tsunamis and landslides, shall redirect construction away from areas that are natural disasters prone. Consideration shall include having factory at higher and drier places, and in other industrial parks or in other regions.

Besides that, control measures shall be in place to prevent any flooding, e.g. to build a flood prevention wall – concrete dyke or permanent concrete wall around its vast compound perimeter above possible flood height level, and to come up with reliable and effective flood-prevention plans.

Longer-term measures are to improve water drainage by dredging existing canals to speed up water flow, and increasing the efficiency of water pumps and water-gates and related equipment, including telemeters, water-level monitoring stations nationwide.

Poor urban planning, deforestation, overbuilding in catchment areas, the damming and diversion of natural waterways, urban sprawl, and the filling in of canals were combining with bad planning to turn an usually heavy monsoon season into a disaster.

Cities around the world are facing the danger of rising seas and other disasters related to climate change. Of the 33 cities predicted to have at least 8 million people each by 2015, at least 21 are highly vulnerable, said by the Worldwatch Institute in year 2007 report.

They include Dhaka, Bangladesh; Buenos Aires, Argentina; Rio de Janeiro, Brazil; Shanghai and Tianjin in China; Alexandra and Cairo in Egypt; Mumbai and Kolkata in India; Jakarta, Indonesia; Tokyo and Osaka-Kobe in Japan; Lagos, Nigeria; Karachi, Pakistan; Bangkok, Thailand, and New York and Los Angeles in the United States, according to studies by the United Nations and others.

More than one-tenth of the world’s population, or 643 million people, live in low-lying areas at risk from climate change, say U.S. and European experts. Most imperiled countries are China, India, Bangladesh, Vietnam, Indonesia, Japan, Egypt, the U.S., Thailand and the Philippines.

The devastating floods in Thailand are a reminder that climate-related challenges are here to stay.

Thailand has 25 river basins and 90% of annual rainfall occurs from May to October, 2011; as a result, floods in Thailand occur almost every year. Making matters worse, Bangkok and the
surrounding area is just one meter above sea level and is sinking gradually, making it highly vulnerable to storm surges from the Gulf of Thailand. The city is ranked among the top 11 Asian mega-cities at risk from climate change. Fortunately, storm surges didn’t strike during the current floods, which were due to unusually heavy rains, or the cost of life and property would have been much greater.

Managing risks from extreme weather events, be they droughts, floods, or storm surges, requires fundamental changes in urban design and effective land use planning. Relevant municipal irrigation, infrastructure, and flood management institutions need to be streamlined and overhauled. Systems are required to deliver timely public information on water-related risks. And above all, there need to be relentless and continued efforts to provide appropriate infrastructure that help manage the conservation and drainage of water.

The 2011 floods are a wake-up call to the people, companies and government of Thailand that natural disaster and climate-related risks are serious and here to stay, and require a serious and determined response.

**What shall Companies Learnt**

The Thai flood’s impact caused an immediate impact across Asia and the Region both in terms of sales and production, not only in Thailand which forced the closures of scores of factories in the country that supply crucial parts to the region.

Toyota stopped production at its Samrong, Gateway and Ban Pho plants from October 10 though the flooding has had no impact on the 3 Toyota plants, but some suppliers were hit by the flood causing delays in supplying parts.

Nissan’s production at its Thailand factory had similar encounter. The plant has not been directly hit by the flooding, but was also facing parts supply shortage.

Honda had also been hit, with one of its plants inundated and its production in Japan, the U.S., Canada and in several Asian countries affected.

Some companies had to start more production in other countries. They have some facilities outside so they can increase production there to supply parts to assembly factories in the country.

Industry officials and analysts said most of the auto giants in Thailand reply on “just-in-time” delivery – the practice of having parts delivered right when they’re needed instead of carrying large, costly inventories at assembly plants.

Most of the car makers in Thailand primarily use parts that are made in Thailand. Pickup truck production uses more than 90% of Thai-built parts and it’s about 60% in passenger cars, so you can image if they need to order parts from places like Indonesia, Malaysia to substitute for the lost parts.
Global supply chains have only recently recovered from the Japanese earthquake in March. Japanese firms had relied on plants in other countries to make up for lost production.

Companies shall now reevaluate the distribution of their production bases, finding alternative sources of supply that will be able to stand in for their regular suppliers in a pinch – that pinch being a natural disaster or even a man-made crisis.

What causes business interruption? Companies need to identify the various risks that could cause the interruption of business activities – e.g. Natural disaster (earthquake, hurricane, etc.), accident; Interruption of infrastructure (electricity, water, gas, traffics, etc.); Shutdown of supplier (parts, material, services, etc.); Strike; Defect of product; Violation of the law; Terrorism, etc. Each company should consider which is the greatest threat? Cost/benefit relationship should be considered while preparation against disaster.
The area of \( \square \) shows the amount of loss caused by the business interruption. To make it smaller, it is necessary to prepare for early recovery.

**The Necessity of Business Continuity Management (BCM)**

In business activities, the risks that may disrupt a business are varied. Let us take a manufacturing plant for example. In the operations of procuring material, accidents or landslides during transport and flooding can cut off logistics routes, making it impossible for the plant to obtain material. Thus, the production line could stop within a few days depending on the retained stock. Also, in the operations of production, utility (electricity, water, gas) outages caused by huge earthquakes, etc. could stop business. Furthermore, fire, explosions, or natural disasters etc. at the plant could be a direct cause of disrupting business activities.

These kinds of interruptions in business activities will lead to decline in shares of the market, and loss of credibility in terms of stakeholders such as customers (clients), stockholders, and in the worst case, could prove fatal for the company. From these aspects, preparing for business continuity is imperative.
A plan is necessary to cover many scenarios of disruption and ensure smooth operations despite unprecedented situations like the political demonstrations, natural disasters, bomb threats or terrorism and disease outbreaks to flooding. For continuity, the business needs ‘backup’ and critical business departments to operate.

The PDCA Methodology shall use:

A) PLAN: Review and prepare for any possible kinds/types of risks and disasters, including other factors, e.g. human resources (workers on strike; accessibility to workplace, etc). Ideally, it shall base on the worst case scenario for business continuity management and planning, and it shall be able to take care most of the consequences.

B) DO: Implement necessary measures to prevent. Examples: Develop Business Continuity Plan (BCP), and having appropriate infrastructure in place, including flood pumps, flood barricade, etc.

C) CHECK: Test and conduct exercise and drills to familiarize and verify procedures, operation equipment, etc. and identify areas for improvement.

D) ACT: To maintain and review the BCP for continual improvement.

Considerations shall include what if the premises or workplace is free from natural disaster, and assets and properties were well protected, but not accessible to workers, suppliers and vehicles; e.g. flooding outside or elsewhere, workers cannot come, suppliers could not deliver parts, and finished goods could not be delivered to clients on time.

Hence, alternative sites for operation, substitutes for raw materials, and few backup suppliers for parts are important as one of your considerations in running your business.

To diversify risks by spreading out in several operations and having suppliers of parts in different locations or regions. If a firm has a production facility in Thailand, it should have another base elsewhere to diversify risk. This includes supply chains suppliers.

This also leads to how reliable your suppliers are another important factor for consideration. Regular audit your suppliers and understand whether they are business continuity ready and prepared is also important if you depend on them very much. Can you image the impact if they fail? Just like this Thai Flood incident, not having sufficient backup supply in time causing shut down of factories which were not affected by the flood directly.

BCM is now an essential element also in terms of transactions between companies. Especially at the supply chain level, should even one of the companies of the chain have their business suspended, the whole chain would be interrupted. This is why today, each company of the supply chain must take the responsibility of addressing BCM issues as part of supply chain management.
7 Steps Companies should take to realise a stronger and more reliable supply chain:

- Include supply chains in the risk management process
- Invest more to mitigate supply chain risk
- Don’t overlook obvious risks
- Diversify supply sourcing when possible
- Look beyond first-tier suppliers
- Regularly revisit supplier risk
- Prepare for the worst

Continuous reviewing and improvement of the Business Continuity Management shall be carried out regularly with the changes in climate, infrastructure, processes, environment, etc., as sometimes they are moving and changing too fast which would affect your earlier plan.

4. Conclusion

Natural disaster as a continuing threat and any other ongoing threat are around us. It is important to review the business plan and business continuity plan carefully and regularly. A good Business continuity plan generally helped in enabling company to meet these challenges and to restore operations swiftly. However, company has to adjust plans and improvise responses to successfully address unexpected complications to address unforeseen difficulties quickly.

Identifying potential threats, assessing their potential impact, assigning priorities, and developing planned responses are the basic principles of sound business continuity planning.
Interisk Asia, one of the subsidiary companies of MS&AD Insurance group, is established in Singapore to provide risk management services, such as ‘Electrical Safety’, ‘Fire Safety’, ‘Occupational Safety’, and ‘Burglary Risk’ etc. to our clients in Southeast Asia and Oceanic countries.

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