

Chapter 11

From Managing Disasters to Managing Risks



Business decisions to invest in hazard-exposed areas are seldom irrational. They usually reflect a search for spearheading **competitiveness and increasing productivity** by taking advantage of the **comparative advantages** offered by such locations.

Businesses have yet to systematically **include disaster risk** considerations into this process of weighing opportunities and risks. The integration of these considerations into **corporate risk management** functions is **still incipient** even in large businesses; and awareness of how these risks can be **effectively managed** is even lower.

11.1 Managing new risks: disasters on the horizon

Risk management in the business sector continues to focus on financial, economic and legal risks. Disaster risk is still not considered fully even in large companies; and small enterprises usually do not undertake systematic risk assessments.

In recent years, large businesses—particularly those with global operations—have become increasingly sensitive to the different risks that may affect their operations. Most large businesses employ a dedicated Chief Risk Officer and some have dedicated risk management departments. Increasingly, overall responsibility for risk management is at the C-Suite executive level, such as Chief Financial Officers (CFOs) or Chief Executive Officers (CEOs) (Deloitte, 2012).

However, the focus of corporate risk management is centred on financial, economic, market and legal risks. Although business surveys highlight an increasing imperative to manage risks, disaster risks are rarely considered. In recent surveys, despite the impact of recent major disasters, disaster risk is not listed in the top 10, 20 or 50 risks identified (Deloitte, 2012; Lloyds, 2012; Forbes, 2012; PwC, 2012).

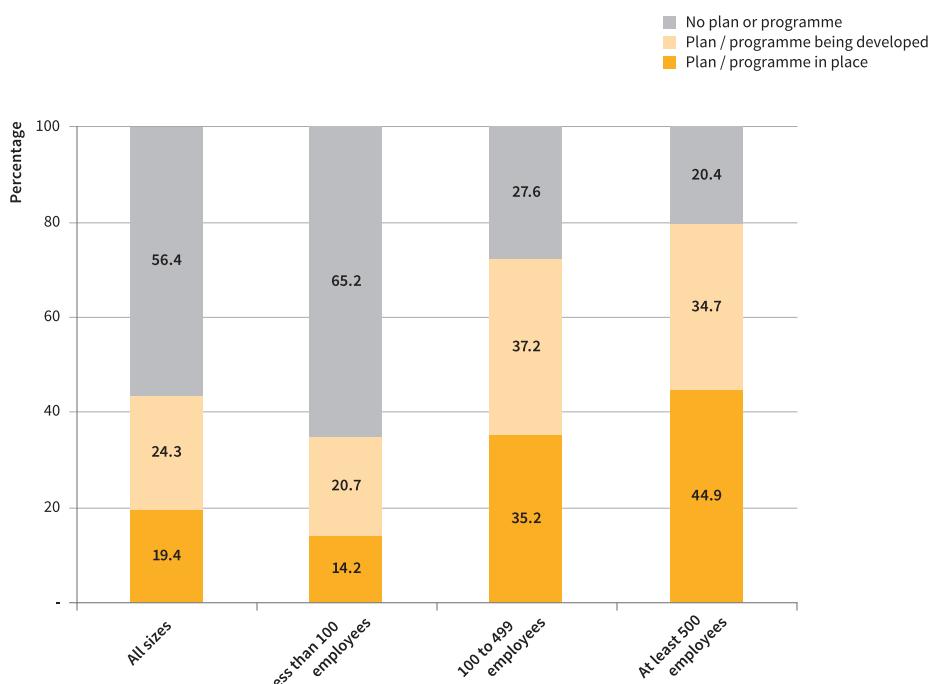
This practice is also reflected in curricula of many business schools. For example, courses on Risk Management for Corporate Leaders at Harvard Business School and the University of Oxford's Global Risk Investment Management Programme usually deal with risks such as credit risk, currency risk and reputation risk, but few schools explicitly include disaster risk in their risk management curriculum.

Box 11.1 Managing risks of local public entities through public-private partnerships (PPPs)

In 2011, one of the world's leading consulting and insurance brokerage firms engaged in open dialogue with local and national governments on how to integrate disaster risk management practices into public risk governance structures. Marsh Risk Consulting, part of the Marsh and McLennan group, subsequently developed practical guidance for local governments on the adoption of the ISO Standard 31000 to their policies, practices and administrative structures (Marsh, 2011).

Recognising that the ISO standard neither explicitly mentions disaster risk nor lends itself easily to the functions of public administration, this initiative has brought principles of private sector risk management and public sector planning processes closer together. Perhaps more important, it has articulated clearly the need for proactive planning and risk assessment beyond the usual focus on response preparedness and contingency planning. Citing the example of the largest lessor of social housing in France, the Caisse des Dépôts Group (SNI), Marsh highlights that this conglomerate carries out systematic risk-benefit analyses ahead of any new investment (Marsh, 2011).

Figure 11.1 Percentage of companies with business continuity plans or crisis management programmes (by company size)^v



(Source: Sarmiento and Hoberman, 2012)

Similarly, international standards are not yet fully articulating disaster risk dimensions. For example, although the ISO 31000 standard on risk management can be adapted to any type of risk, it does not explicitly highlight disaster risk.ⁱ This gap has been identified, and companies are taking initiatives to address it (see Box 11.1).

After witnessing large disasters, global businesses are now beginning to consider how to manage disaster risks. For example, a 2011 poll of 1,000 senior global executives highlighted that 29 percent had been financially affected by the 2011 Great East Japan Earthquake and accompanying nuclear disaster (PwC, 2012). And 24 percent of these were taking measures to strengthen their risk management capacities (*Ibid.*).

In another poll, 90 percent of businesses stated that they had suffered weather-related disaster impacts

over the last three years. Of these, 53 percent were now investing to strengthen risk management—for example, protecting operations and offices and bolstering supply chains (UKTI, 2011).

Supply chain resilience has attracted particular attention because risk has increased through globalisation (see Chapter 2 of this report). Factors that influence supply chain vulnerability include: dependence, for example, to what extent is the supply chain dependent on one single supplier; visibility, to what extent is the supply chain risk visible; and design information portability and substitution, how quickly can design information be transferred from one affected supplier to another and how quickly can production be resumed at the substitute supplier (Fujimoto, 2011).

Many smaller businesses, however, face a challenge in addressing disaster risk. Having an emergency

plan in place is key in explaining business performance after major events (Corey and Deitch, 2011), but, as Figure 11.1 shows, a survey carried for this report in six disaster-prone cities of the Americasⁱⁱ highlighted that less than one-fifth (19.4 percent) of all surveyed businesses had a business continuity plan, and in highly risk-prone cities such as Bogota and San José, the percentage was even lower. Similarly, almost one-fourth was unable to estimate costs of a major disruption to their business (Sarmiento and Hoberman, 2012). In fact, although many methods and tools exist to measure the value and exposure of business interruption, there are difficulties in assessing this fully against other dimensions that need to be considered, i.e. time, revenue and costs.ⁱⁱⁱ

In particular, small and medium enterprises (SMEs) are more likely to lack risk awareness or struggle to find the capacity to manage disaster risks, mainly owing to financial, human resource and technical limitations (Wedawatta et al., 2010; Corey and Deitch, 2011; Battisti and Deakins, 2012). Of companies with at least 500 employees, about 45 percent had a business continuity plan or crisis management programme in place, but companies with less than 100 employees, as few as 14.2 percent had a plan (Figure 11.1).^{iv}

These findings are validated in other regions (Villarroel, 2012). SMEs are often more vulnerable per se and more likely to be located in less-resistant buildings and have a smaller, more localised customer base (UNDP, 2013; Battisti and Deakins, 2012). They usually do not engage in hazard management programmes and lack financial resources for recovery (Villarroel, 2012; Vitez, 2009).

Few SMEs have been able to articulate the case for or to strengthen their capacities to manage disaster risks. Where the case has been made, however, emphasis is on preparedness, such as evacuation plans and response measures, rather than on prospectively managing disaster risks (Sarmiento and Hoberman, 2012; UNDP, 2013). Very small and family-owned businesses—for example, fishing enterprises in low and middle-income countries—face even tighter constraints on their ability to invest in risk reduction. However, as Box 11.2 explains, certain simple measures have enabled businesses to survive disasters.

Box 11.2 Successfully reducing losses on the coast of Yucatan, Mexico

Hurricane Isidore struck the southeastern coast of Mexico in 2002, resulting in economic losses of US\$500 million on the Peninsula of Yucatan. Of this, US\$8 million were estimated damages to the fishery industry, mainly from loss or damage of fishing boats and boat motors. The hurricane severely impacted small producers and holders of small ruminants, chicken and pigs. Learning from this experience, farmers and fishermen with the support of local governments developed risk management strategies to reduce future losses. These included safeguarding fishing equipment, such as boats and motors, and relocating farms to safe areas.

The local government of the municipality of San Felipe purchased land two kilometres from the shore and distributed it to 60 small producers. Although farmers remained in their original villages, they moved their livestock to safe ground. Similarly, fishermen negotiated access to cattle trucks and storehouses 15 kilometres inland where they could keep their fishing equipment safe. These strategies saved them approximately US\$35,000 per fisherman when in 2005, Hurricane Wilma hit.

Neighbouring municipalities have since adopted these risk-reducing strategies; it has been estimated that each municipality has saved about US\$6.5 million.

Box 11.3 New attitudes to risk in large global businesses

Global consulting firm PricewaterhouseCoopers and UNISDR are collaborating on a global initiative to better understand and support disaster risk management in the private sector. In-depth conversations and 11 risk management workshops with 14 large companies with a global footprint and therefore increasing risk exposure took place (Table 11.1).

Table 11.1 Companies participating in a global initiative on comprehensive disaster risk management for national businesses and global corporations

Company	Country	Industry
ABB	Switzerland	Industrial Products
ARUP	India	Structural Engineering
BG - British Gas	United Kingdom	Energy, Mining
Citigroup	United State of America	Financial products and sevices
GE - General Electric	United State of America	Conglomerate - Infrastructure and Finance
HCC - Hindustan Construction Company	India	Infrastructure
HIRCO	India	Real Estate investment
Hitachi	Japan	Conglomerate - Infrastructure and Finance
IHG - InterContinental Hotels Group	United Kingdom	Hospitality
Nestlé	Switzerland	Nutrition, Health and Wellness
NTT - Nippon Telegraph and Telephone	Japan	Telecommunications
Roche	Switzerland	Healthcare
SPCL - Shapoorji Pallonji & Co. Ltd	India	Construction
Walmart	United State of America	Retail

(Source: PwC, 2013)

A few initial trends and new approaches can be identified. Senior managers consistently acknowledge that disasters have impacted their operations, and will continue to do so, with dire consequences in the future. They also recognise that indirect losses, through supply chain interruptions, can be as severe if not worse than direct losses. However, shared risks and costs represented by the wider and macroeconomic impacts of disasters are not yet fully considered.

Few global corporations collaborate actively with national and local governments across the countries in which they operate. But there is also concern among business managers that an in-depth engagement with governments may delay processes and obstruct effective business operations. There is, however, ad hoc collaboration and information sharing among industry peers.

Disaster risk management focus in most corporations remains centred on business continuity planning. Most businesses are engaging in some form of disaster risk assessment and management for their supply chains, and are increasingly moving towards the setting of risk management standards, which suppliers have to comply with.

Some corporations rely on the insurance industry for risk information and assessments, and most have only limited access to disaster risk models and information. This limits their disaster risk awareness or capacity to factor this information into investment decisions.

To date, disaster risk management usually falls under the responsibility of dedicated supply chain management functions rather than as an integral part of business development and investment planning. However, a shift is taking place where companies are moving strategic consideration of disaster risk to the level of senior management and advisory boards.

(Source: PwC, 2013ⁱⁱ)



11.2 Emerging practices

Global businesses have risk management strategies for their own assets and operations in place. Owing to recent experience, a number are now demanding risk assessments along their supply chain. But only a few are beginning to take the lead on a broader approach to disaster risk.

New perspectives on business risk management are emerging, however. In the case of global corporations, additional consultations carried out for this report indicate a gradual shift in perspective. As Box 11.3 highlights, large global businesses are starting to move from a narrow focus on business continuity planning towards a broader approach to prospectively manage their disaster risks. However, these changes are still incipient and are only reflected in more recent (three-to-four year) risk management policies.

This gradual widening of focus from business continuity planning to a more comprehensive and strategic approach to disaster risk management mirrors developments in the public sector where central planning and finance ministries begin to assess disaster risks and integrate disaster risk considerations into national planning and accounting processes (UNISDR, 2011). Unfortunately, there are still few channels or forums for joint public-private en-

agement to agree on policies, strategies and plans to manage disaster risks or to develop appropriate risk governance arrangements.

In addition, where corporations have a global remit, their incentives to engage with local or national regulators and actors may be limited. Through diversifying their supply chains in different industry sectors they may, on the one hand, increase their vulnerability to disaster risks in specific locations; on the other hand, they may spread their risks and increase their room to manoeuvre in times of crises or when facing tough regulations in particular locations.

A number of large global businesses are now demanding risk assessments from small businesses that are key suppliers. A few companies have successfully combined enhanced information of potential disruptions, supply chain and financial impact with simulations of disaster events to reach a more comprehensive understanding of risk drivers and geographical concentration of risk as a basis for their supply chain management (Box 11.4).

But disaster risk management has also been recognised as a business development opportunity, particularly because of long-term climate change. A recent study of SMEs in Germany shows that the range of products and tools for risk management—particularly in flood management, which businesses already market—is significant and has the potential to

Figure 11.3 Company risk management strategies

Avoiding	Reducing	Sharing	Accepting
<p>Companies avoid disaster risks:</p> <ul style="list-style-type: none">- Systematically steering clear of regions which are known to be exposed to natural hazards- Pulling operations out of exposed regions- Refusing to work with suppliers that are not considered to be risk resilient	<p>Companies attempt to reduce the likelihood or impacts of disaster risks:</p> <ul style="list-style-type: none">- Cautious expansion- Selecting suppliers carefully- Upgrading existing site's safety infrastructure- Increasing supply chain flexibility- Developing emergency planning actions	<p>Companies try to reduce disaster risk by transferring it to third parties:</p> <ul style="list-style-type: none">- Insuring assets- Hedging risks- Sharing risks through contractual agreements with suppliers, buyers, peers and public institutions	<p>Companies accept residual disaster risks:</p> <p>Once other strategies have been leveraged and implemented, there is a common agreement that 'zero risk' can never be achieved. Companies must determine an acceptable level of residual risk based on their risk appetite.</p>

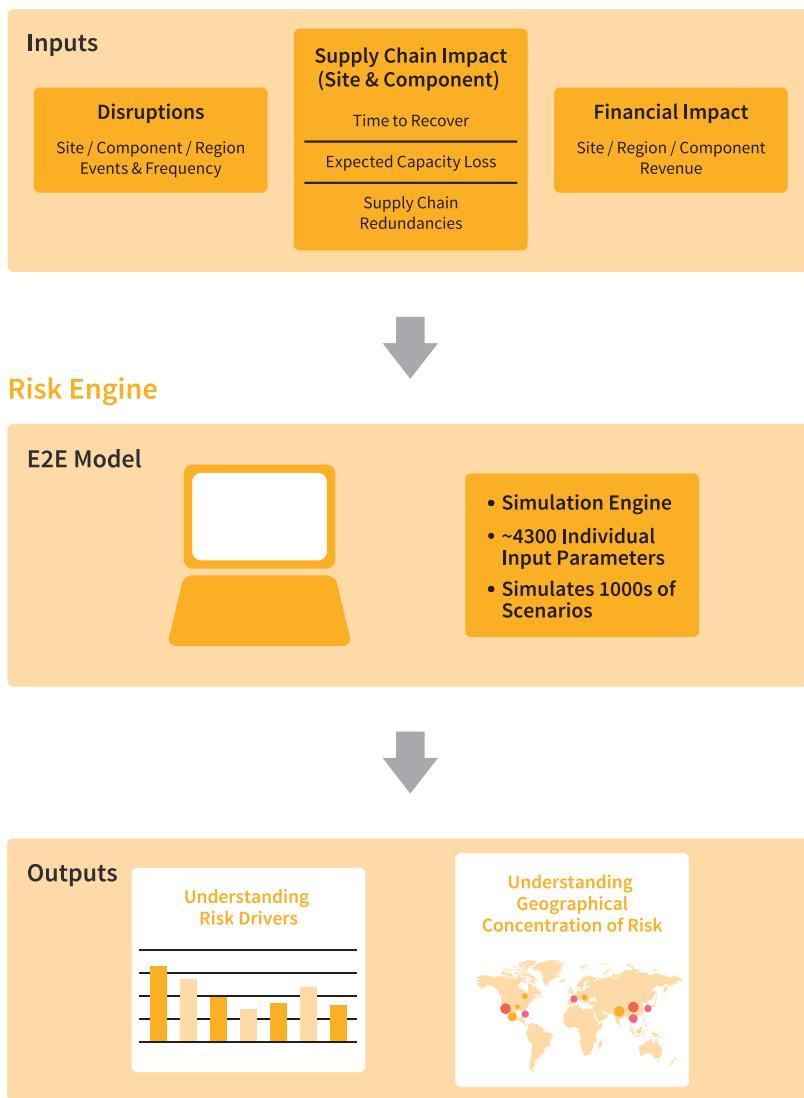
(Source: PwC, 2013)

Box 11.4 Cisco's comprehensive, proactive risk management programme

Learning from the impact of the Chengdu earthquake of 2008, Cisco, one of the largest global providers of networking equipment, has developed a sophisticated supply chain crisis management system that allows it to proactively manage disaster risks to its assets and operations. Including its worldwide network of supply chain partners, the company combines business continuity planning information with supply chain visibility and disaster risk data, identifying hotspots before and during a crisis (Harrington and O'Connor, 2009).

The use of a risk engine enables Cisco to assess the likelihood of supply chain disruptions and to generate heat maps based on likelihood and impact (Figure 11.2). This engine incorporates complex datasets, including data on flood risk, geology and geopolitics, supplier performance, as well as actuarial data (*Ibid.*). This tool provides the basis for accumulation of comprehensive information on drivers, trends and patterns of risk and thus for success of Cisco's resilient supply chains.

Figure 11.2 Risk engine used by Cisco



(Source: Adapted from Harrington and O'Connor, 2009)



expand and include prospective risk management (DKKV, 2012).

A number of businesses also recognise the value of collaborating and sharing their knowledge and expertise with the public sector (PwC, 2013). However, although several joint initiatives exist, mid- to long-term collaboration both among the private sector and with the public sector are isolated, insufficient and at early stages of maturity (Ibid., 2013). One limiting factor is the lack of familiarity and leverage of private sector skills and know-how by public institutions; as a result, existing initiatives on each side are not well aligned, and collaboration remains an untapped opportunity to date (Ibid.).

Businesses usually employ four distinctive strategies—similar to those considered by governments or communities—to manage exposure to risks, depending on their risk appetite and exposure profile (Figure 11.3).

However, when global corporations were asked about their existing disaster risk management strategies, many show low levels of maturity vis-à-vis long-term risk reduction and prospective risk management (PwC, 2013; and Box 11.4 above). This

means that although there are good practices to be shared in understanding and responding to immediate risks to corporate assets, longer-term risks and risks to supply chains are less well understood (Figure 11.4).

Unsurprisingly, levels of maturity in understanding asset exposure and associated risks vary significantly. Although many companies rely on insurance providers to conduct risk assessments of their major assets, innovative examples exist. One of the global corporations consulted for this report creates ‘heat maps’ of each of its sites by overlaying company data on hazard and risk maps, setting up global risk standards and creating local compliance registers in line with the company’s global risk standards (PwC, 2013).

In addition, a process of positive and negative incentives and regular annual audits ensures increased and monitored levels of compliance (Ibid.). New initiatives towards developing integrated disaster risk management frameworks for the private sector (Figure 11.5) are promising steps in the direction of more effective business and public-private risk reduction.

Figure 11.4 Level of maturity using number of good practices as a proxy

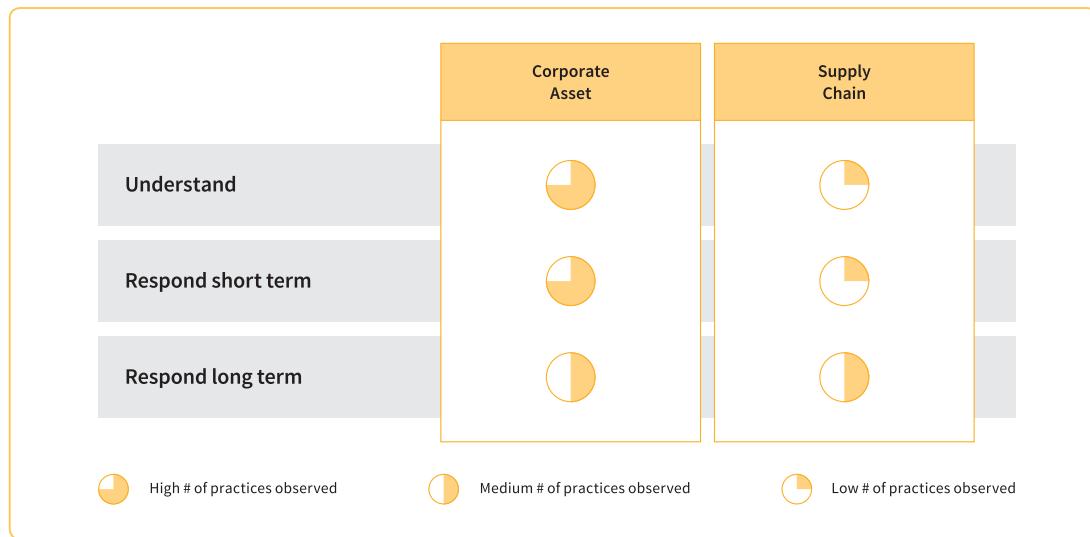
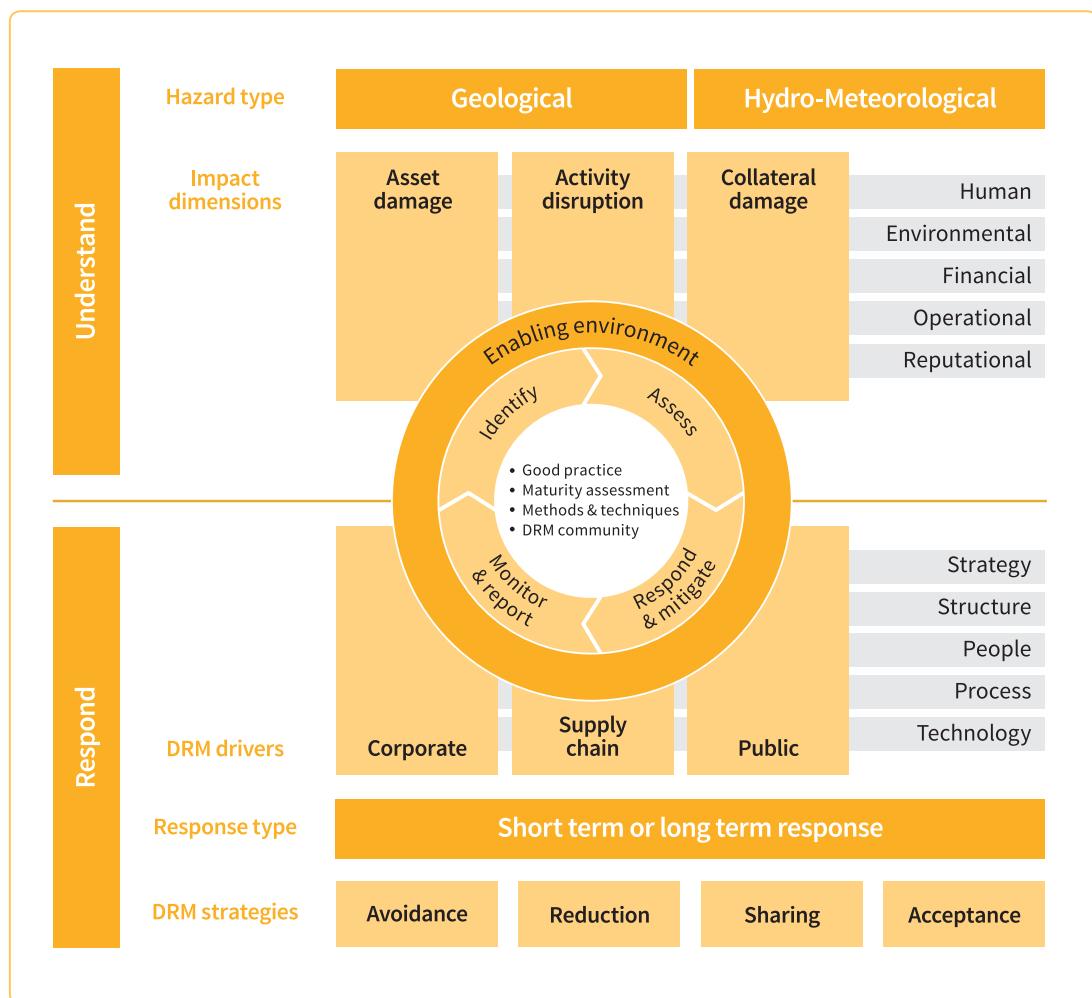


Figure 11.5 Towards a disaster risk management framework for the private sector (under development)



(Source: PwC, 2013)

Notes

i However, there is a promising sign that ISO 22301 Business Continuity Management may address disaster risk more directly, including a proactive approach for disaster reduction.

ii This survey, carried out by Florida International University (FIU), York University and the Central American Institute for Business Management (INCAE), covered Vancouver, Canada; Miami, United States of America; Kingston, Jamaica; San Jose, Costa Rica; Bogota, Colombia; and Santiago, Chile.

iii Dempsey, Myers and Company: Business Interruption Values and Exposures. Quinnipiac University, 14 June 2006: http://www.google.de/url?sa=t&rct=j&q=dempsey%20myers%20%26%20company%20business%20interruption%20time%20revenue%20cost&source=web&cd=1&ved=0CCwQFjAA&url=http%3A%2F%2Fwww.theccic.org%2FCustomer-Content%2FWWW%2FCMS%2Ffiles%2F2nd_session2.ppt&ei=d_0wUZn0CoSOtQaf1IDIDw&usg=AFQjCNHIS_NrrBRx-YIddvfZ0iNB9buJA.

iv A similar survey carried out for Japanese companies just after the Great East Japan Earthquake reports that the reasons for lack of BCP in 2,865 SMEs were lack of know-how (42.1%), lack of need (35.3%), lack of human resources (33.1%), lack of time (26.35%) and lack of financial cost (22.1%) (Teikoku Databank, Ltd, 2011, <http://www.tdb.co.jp/report/watching/press/pdf/k110601.pdf>).

v Total N is 1,198 with n=939 for less than 100 employees, n=210 for 100–499 employees, and n=49 for 500+ employees.

vi Additional information directly provided by PwC based on workshop discussions and internal reports.



