# RESILIENT BUSINESS FOR RESILIENT NATIONS AND COMMUNITIES

adpc

UNITED NATIONS ESCAP
Economic and Social Commission for Asia and the Pacific

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# Foreword

Managing and building resilience to natural disasters are priorities if we are to protect our hard-won development gains in the Asia-Pacific region. The private sector accounts for an estimated 70 to 85 per cent of the investment in most national economies, and makes institutional investments of more than $80 trillion annually across the globe. Any attempt to reduce the risk of disasters and build resilience cannot succeed without the participation of the private sector. In turn, the private sector needs to take steps to build its own resilience, and contribute to building more resilient communities and nations.

The *Sendai Framework for Disaster Risk Reduction 2015-2030* (Sendai Framework) offers a strategic opportunity for our region to establish a clear set of responsibilities and measures of accountability for the private sector to participate more meaningfully in disaster risk management. The Framework also provides impetus for the private sector to shift from conventional reactive corporate social responsibility towards more proactive risk-informed investments and business processes. Successful translation of the Sendai Framework into action will require better understanding of risks, improved governance, resource investment and the enhancement of risk management.

The Economic and Social Commission for Asia and the Pacific (ESCAP) has aligned its work on disasters with the Sendai Framework, concentrating, among others, on addressing knowledge gaps in risks and resilience, the roles and responsibilities of stakeholders, effective response to early warning, and risk-sensitive investment. The Asian Disaster Preparedness Center (ADPC) has initiated the iPreparedBusiness facility to promote commitment of government agencies to create enabling environment for private sector to undertake risk reduction activities. R3ADY Asia-Pacific has promoted a whole community approach to strengthening community resilience by bringing together diverse stakeholders.

This report focuses on the private sector, as key stakeholders whose decisions and actions impact levels of resilience to climate-related disasters, and whose dynamism, innovation and positioning contribute to the body of knowledge on risk and resilience, significantly shaping responses. Analysis of the private sector's involvement in Asia-Pacific disaster risk management is still evolving, and good practices need to be more systematically collated. This report is among the first to document the evolving thoughts and practices of the private sector in disaster risk management. It offers Asia-Pacific perspectives on the respective roles and responsibilities of the private and public sectors in promoting resilience, highlighting good practices, case studies and lessons learned. This report is the culmination of a two-year collaboration between our organizations in promoting greater involvement of the private sector in disaster risk management.

Implementation of the Sendai Framework in Asia and the Pacific must take into account that more than 90 per cent of businesses in the region are micro, small or medium enterprises. Strategies that address the diverse needs of a wide range of stakeholders, from micro enterprises to large multinational corporations, need to be carefully thought through. The public sector will be instrumental in creating an enabling environment to encourage business involvement in disaster risk management. Sound risk management legislation, enforcement of regulatory frameworks, economic and business incentives, access to risk financing and insurance opportunities, as well as the provision of sufficient information

and capacity building efforts, can all motivate increased business participation in strengthening resilience of their own operations, thereby contributing to building resilient communities and nations. The promotion of multi-stakeholder partnerships among the public and private sectors, non-profit organizations and academic institutions will also be needed to attain this goal. Private sector leaders will need to engage in multi-stakeholder dialogues to integrate disaster risk management into business processes, and more importantly, investment decisions, helping to prevent exacerbation of existing risks and avoid the creation of new ones.

With the Sendai Framework, the new 2030 Agenda for Sustainable Development, and the Sustainable Development Goals already in place, and with global climate change action scheduled for deliberation before the end of 2015, there has never been a more opportune time to embark on meaningful public-private partnerships. It is our hope that this report will generate serious discussion about fully engaging the private sector in implementation of the new disaster risk reduction agenda. Our organizations, and the other dedicated partners with whom we work, look forward to working with you to create a safer and more resilient Asia-Pacific region.

***Shamshad Akhtar***
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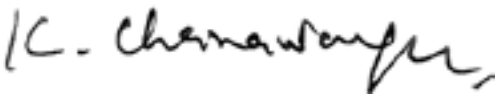

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# List of Abbreviations

| | |
|---|---|
| ACCSQ | ASEAN Consultative Committee for Standards and Quality |
| ADB | Asian Development Bank |
| ADPC | Asia Disaster Preparedness Center |
| ADRC | Asia Disaster Reduction Center |
| AMCDRR | Asian Ministerial Conference on Disaster Risk Reduction |
| APBF | Asia-Pacific Business Forum |
| APEC | Asia-Pacific Economic Cooperation |
| ASEAN | Association of Southeast Asian Nations |
| BAC | Business Advisory Council |
| BCI | Business Continuity Institute |
| BCM | business continuity management |
| BCMS | business continuity management system |
| BCP | business continuity plan |
| CBA | cost-benefit analysis |
| CCA | climate change adaptation |
| CIR | Critical Infrastructure Resilience |
| CNDR | Corporate Network for Disaster Response |
| COAG | Council of Australian Government |
| CSO | civil society organizations |
| CSR | corporate social responsibility |
| CSV | corporate social value |
| DEWN | Disaster Early Warning Dissemination System |
| DMC | Disaster Management Center |

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|---|---|
| DOST-PAGASA | Department of Science and Technology - Philippine Atmospheric, Geophysical and Astronomical Services Administration |
| DRM | disaster risk management |
| DRR | disaster risk reduction |
| DRR-PSP | Disaster Risk Reduction Private Sector Partnership |
| EAs | Emergency Agreements |
| ESCAP | United Nations Economic and Social Commission for Asia and the Pacific |
| FDI | foreign direct investment |
| FEMA | Federal Emergency Management Agency |
| GAR | Global Assessment Report |
| GDP | gross domestic product |
| GEJ | Great East Japan earthquake |
| GFCF | Gross Fixed Capital Formation |
| GIZ | Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH |
| GVCs | global value chains |
| HFA | Hyogo Framework for Action |
| IDNDR | International Decade for Natural Disaster Reduction |
| IO | international organizations |
| ISO | International Organization for Standardization |
| LDCs | least developed countries |
| LLDCs | land-locked developing countries |
| MOU | Memorandum of Understanding |
| MSMEs | Micro, Small and Medium Enterprises |
| NCDM | National Council for Disaster Management |
| NDMO | National Disaster Management Office |
| NDRRMC | National Disaster Risk Reduction and Management Council |

| | |
|---|---|
| NEDA | National Disaster Management Authority |
| NGOs | non-governmental organizations |
| OCD | Office of Civil Defense (Philippines) |
| OECD | Organization for Economic Co-operation and Development |
| OPARR | Office of the Presidential Assistant for Rehabilitation and Recovery |
| PASC | Pacific Area Standards Congress |
| PATA | Pacific-Asia Travel Association |
| PDCA | plan-do-check-act |
| PIA | Philippine Information Agency |
| PPDRM | Pacific Platform for Disaster Risk Management |
| PPP | public-private partnership |
| PSAG | Private Sector Advisory Group |
| PSP | private sector partnership |
| SAARC | South Asian Association for Regional Cooperation |
| SBF | Singapore Business Federation |
| SFDRR | Sendai Framework for Disaster Risk Reduction |
| SIDS | small island developing States |
| SMEs | Small and Medium Enterprises |
| TISN | Trusted Information Sharing Network |
| TNCs | transnational corporations |
| TSP | Tri-sector Partnership |
| UNESCAP | United Nations Economic and Social Commission for Asia and the Pacific |
| UNISDR | United Nations Office for Disaster Risk Reduction |
| WEF | World Economic Forum |
| WHO | World Health Organization |

*The symbol "$" stands for United States dollars unless otherwise indicated.*

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# Executive Summary

The issue of business engagement in disaster risk managementhas gained attention in recent years with particular prominence provided to it in the Sendai Framework for Disaster Risk Reduction 2015–2030. Theloss of business assets was explicitly included as a concern in a long-term global goal of disaster risk reduction.Increasingly costly disasters haveraiseddifficult questions: What is, and what should be, the role of businesses in disaster risk management? Can governments foster business engagement in this field? How can disaster managers, businesses and governments work together to reduce disaster-induced losses and ultimately protect the community?

This book is a compilation of the abundant but highly fragmented pool of information regarding business engagement in disaster risk management, with a focus on Asia and the Pacific. It is driven by the need to build capacity through sharing knowledge among businesses and other stakeholders on their experiences, good practices, training and education on disaster risk reduction. It seeks to engage policymakers, disaster risk managers, and academics interested in making linkages between best practices and lessons in business and disaster risk management in the Asia-Pacific region. It also seeks to increase collaboration among all sectors of the economy to enhance resilience across the region.

Besides providing a comprehensive review of many business-related issues in disaster risk management, the primary message of this publication is that businesses make great partners for reducing disaster risk. Other economic sectors in societies –public and non-profit – and civil society institutions like academia can benefit from enhanced collaboration with the private sector.

## The book is organized into six chapters:

**1. Chapter 1, "Resilient business for a resilient Asia-Pacific region"** provides an overview of the important economic losses associated with disasters, especially in Asia and the Pacific. It shows how the thriving Asian economies are increasingly exposed to disaster risk. The chapter makes the case for greater collective efforts to achieve resilience in the region, placing businesses as a central driver to realize this vision.

**2. Chapter 2, "Risk, resilience and accountability",** presents an analysis of the fundamentals of risk and resilience, and links these two concepts with the attainment of sustainable development. It also addresses how businesses contribute to either creating or reducing a risk for the rest of the society through their actions. The chapter stresses the need for an accountability framework that ensures that stakeholders, including businesses, become accountable for the risk that they create.

**3. Chapter 3, "Disaster risk management for businesses"**, provides an extended review of the motivations for business engagement in disaster risk management. It proposes a framework centred on a series of accountability relationships between business managers and the different stakeholders of a company. It discusses mechanisms that businesses are using to engage in disaster risk management, and identifies some of the challenges they face in accessing or using these tools, as well as in adopting best practices.

**4. Chapter 4, "Public sector approaches to business engagement in disaster risk management",** centres the discussion on what the public sector can do to increase business participation throughout DRM interests and practice. It provides a review of international and regional DRM frameworks and how they relate to business interests. The discussion concludes by reviewing incentives that can foster business engagement in the subject.

**5. Chapter 5, "Collaborative arrangements"**, describes a framework for multisector collaboration in disaster risk management. It explores the different bilateral collaborative arrangements between businesses and other stakeholders, including public sector agencies, academic institutions and NGOs. It provides an overview of how existing collaborative platforms are proceeding to increase the participation of businesses in their activities.

**6. Chapter 6, "Conclusions and recommendations"**, summarizes the most important points made in the preceding discussions. It distils the body of experience into four broadly-framed recommendations to advance the opportunities that can realize greater business engagement in disaster risk management.

What follows is a summary of each chapter,highlighting primary issues and citing essential points for further attention.

## Resilient business for a resilient Asia-Pacific region

The Asia-Pacific region has been a drivingforce for global economic growth over recent decades. It is also the most disaster-prone region in the world. Between 2004 and 2013, 43 per cent of disasters occurred in Asia and the Pacific representing 63 per cent of total deaths and half of global economic damages. While the number of casualties has progressively decreased, there is a clear upward trend in economic losses. Notably, data illustrating the impact of natural disasters globally point to a particularly high regional level of exposure and vulnerability to disaster risk in Asia and the Pacific.

The private sector is the primary generator of wealth, employs the majority of the labour force and is the dominant vehicle for innovation in the region(ESCAP and UNISDR, 2012). However, the private sector also suffers most of the economic impacts of disasters. Micro, small and medium enterprises (MSMEs)employ over half of the labour force and contribute between 20 per cent and 50 per cent of GDP in the majority of the economies in the region. Unfortunately, they also are particularly vulnerable because they have lower capacities for absorbing disaster losses. Greater economic integration in Asia and the Pacific, and the rising investments especially within tightly knit global value chains (GVCs), further exacerbate the situation.

Disasters have far-reaching ramifications on supply chainswith participating firms being more exposed to hazards because of their dependency on suppliers and customers within the same chain. The Great East Japan earthquake and the Thai floods of 2011 revealed the extent to which disasters can affect GVCs. Automobile production decreased in Thailand by 19.7 per cent and in the Philippines by 24 per cent following the earthquake. The world price of computer hard drives increased between 20 per cent and 50 per cent after the Thai floods. These losses and trends highlight the gravity and urgency for achieving greater disaster resilience in Asia and the Pacific, particularly in terms of protecting economic assets.

## Risk, resilience and accountability

Disaster risk reduction (DRR) experts from the public and non-profit sectors tend to pursue different approaches to disaster risk management (DRM) than business risk managers from private companies. They share similar priorities in saving lives, protecting assets, restoring operations, etc. However, whilegovernment and non-profit disaster managers focus on the negative consequences of risk and strive for the better management of resources and the timely implementation of activities to minimize their consequences, business practitioners typically see risk as a neutral factor in the attainment of business objectives. By presenting disasterrisk as a potential opportunity rather than only as a threat, the emphasis shifts from the possibility of an event occurring to the possibilities for taking actions in a variety of circumstances. The Sendai Framework for Disaster Risk Reduction (SFDRR)encourages the private sector and other stakeholders to develop new products and services to help reduce disaster risk, in particular,for people who assist developing countries and their specific challenges.

The chapter discusses why businesses need to be resilient, particularly in the face of disaster risks. The motivation is the pursuit of sustainable development, understood as being"development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987). Here, resilience is understood as a necessary condition for achieving long-termsustainable development, as disasters can easily destroy hard-earned development accomplishments. For societies to be resilient, they need to require that all stakeholders, and especially the private sector, are themselves resilient. Businesses, therefore, share a common interest in having the capacities to grow and adapt if they are to survive, especially when facing turbulent change (Fiksel, 2006).

In considering the private sector's roles in DRM, it is important to recognize that businesses can contribute to reducing risk, but they can also potentially create further risk for society. In this regard, it is important that institutional and social frameworks hold businesses accountablefor their share of risk.

## Disaster risk management for businesses

All business activity involves a level of risk.Investing in disaster risk management may potentially yield economic benefits, the ultimate goal of any business, as well as societal resilience. However, because the benefits of risk-sensitive investments are not immediately evident, a case has to be made that considers long-term viability and survival to overcome business shortsightedness.The chapter proposes a conceptual framework, which suggests that the accountability demonstrated by a firm's management to its various stakeholders determines the extent the business engages in DRM. The legitimacy and survival of the corporation dependon the success of the business in generating economic profits as well asby meetingstakeholders' other expectations. These combined obligations provide the company's "license to operate".

Corporate social responsibility (CSR) is utilized by enterprises to fulfil social obligationsand to create opportunities for new business through strengthened community involvement. However, it is clear that there is a need for CSR activities to go beyond single philanthropic gestures and pursue long-term partnerships with non-profit organizations that create greater value while minimizing risk in society.

Shared values can advance innovation, productivity and organizational capacities of businesses and enable solutions to be applied at sufficient scale to cope with the negative impacts of disasters. These initiatives create greater economic and social value.

Based on risk assessments, businesses can decide to avoid risk by limiting their exposure to hazards or not investing in disaster-prone areas. Businesses that mitigate riskoften decide to implement structural measures, e.g.such as using physical barriers or devices, retrofitting buildings, physically securing equipment, using hazard resistant techniques or following industry standards and building codes. Non-structural techniques also can be employed like legislation and regulatory frameworks, arranging contingent staff or employing operational procedures and business continuity plans. Cost-benefit analyses can assist firms in selecting the best mitigation options considering their relative exposure to risk, the company's "risk appetite" or degree of tolerable risk, and available resources.

Other businesses transfer part of their risk to insurance companies or avail of other financial instruments to spread the risk of potential losses to other parties. However, risk sharing faces challenges associated with wider market failures, necessitating joint public-private solutions to ensure marketfunctionality. The utilization of industry standards and codes of conduct or performance also provide Governments with means to ensure that businesses meet minimum standards of resilience.Governments can exert public interests by mandatory requirements or incentives that encourage business compliance.The Sendai Framework addresses these issues by promoting the development of quality standards through certifications and awards for disaster risk management. Progress depends on the full participation of the private sector, civil society, professional associations, scientific organizations and international organizations such as the United Nations.

Accessibility to relevant data and information helps businesses to make informed decisions and ensures that risk acceptance is determined by a reasoned consideration of a firm's risk appetite rather than by guesses from incomplete disaster risk information. Governments, business representatives, networksand business associations should aim to regulate risk acceptance, which could establishlegal boundaries for the risk that individual businessescan bear.

Businesses can use other mechanisms to mitigate disaster risk.Industry standardson safety and risk management can be used to reduce companies' risksand increase the resilience of businesspartners, including those that are crucial for safeguarding supply chain operations.The Sendai Framework calls for enhancing business resilience and protecting livelihoods and productive assets throughout the supply chain to ensure continuous services and the integration of disaster risk management into business models and practices.

Business continuity management, supported by the international standard ISO 22301, is one of the most common strategies employed by businesses to prepare for emergencies. Enterprises can return to business quickly following a crisis,or even maintain operations during critical periodsby having continuity plans in place.

Comprehensive disaster resilience should encompass all types of private sector organizations including small and medium enterprises (SMEs). These enterprises represent a dominant feature of the Asian-Pacific economy, but they suffer from limited resources, lack of capacities and low levels of risk awareness making them extremely vulnerable to disasters. Supportmust be given to these

smaller organizations from the public sector, and the private sector can offer solutions throughboth pro bono and market-based business-to-business initiatives.

The Sendai Framework calls for integrating disaster risk reduction that includes the guidance of public and private sectors to: (i) address disaster risk in publically owned, managed or regulated services and infrastructures; (ii) promote and provide incentives, as relevant, for actions by persons, households, communities and businesses; (iii) enhance relevant mechanisms and initiatives for disaster risk transparency, which may include financial incentives, public awareness-raising and training initiatives, reporting requirements and legal and administrative measures; and (iv) put in place coordination and organizational structures.

One of the main obstacles to private sector engagement in DRM is that businesses have been largely marginalized in DRM platforms and forums. The private sector needs to participate more and seek a higher level of representationat international, regional and national forums to facilitate tangible change. Businesses can formally organize themselves around the subject by establishing DRM interest groups within existing platforms. These can include the regional business advisory councils of ESCAP, ASEAN or through other business associations and chambers of commerce, nationally or in local communities.

## Public sector approaches for business engagement in disaster risk management

Businesses are dynamic elements in any society. They generate private wealth through productivity and provide public revenue through taxes. They have strong social impacts as they create employment, build communities and contribute to social cohesion. However, the involvement of the private sector in DRM is still limited. Governments need to accept a responsibility tosupport the private sector by enhancing business resilience and establishing effective legal boundaries in terms of their conduct.

International policy frameworks such as the Hyogo Framework for Action (HFA) and the Sendai Framework for Disaster Risk Reduction (SFDRR) are important means to engage private sector interests in sustained DRM commitments. Regional platforms such as the Asian Ministerial Conferences for Disaster Risk Reduction (AMCDRR), the ESCAP Regional Committee on Disaster Risk Reduction and the Regional Consultative Committee (RCC) on Disaster Management, are opportunities to elevate the prominence of businesses and their activities in contributing to resilient societies.

Governments can create enabling environments to foster greater private sector engagement through normative measures such as laws and regulations or by introducing incentives. In the case of small businesses, raising awareness and building capacities are important factors to encourage these enterprises to strengthen their resilience.

The scope and capabilities of national DRM frameworks that exist in the Asia-Pacific countries vary dramatically. Additional commitments to support increased national resilience would improve the overall regional efficacy of DRM. Many developing countries typically lack the human and economic resources necessary to implement existing frameworks properly, so there is frequently a challenge of enforcing existing laws and regulations. There may be other reasons that enacted legislation is not

sufficiently enforced in other countries. There is a widespread responsibility for Governments to take effective measures to ensure that legal and regulatory frameworks can guide, but also be adhered to, by stakeholders as they conduct their businesses.

Incentives can be powerful instruments to encourage businesses to invest in resilience. Monetary incentives can include tax benefits, government subsidies or grants that are potential means to encourage investments in mitigation and lower the costs involved. Other forms of non-monetary incentives such as concessional opportunities, preferential bidding possibilities or public recognition for contributions to public service should not be underestimated for encouraging business participation in DRM. All types of incentives are particularly appealing for SMEs given their smaller commercial operating margins and more limited resources.

The public sector has an essential role to play in stimulating risk transfer mechanisms and especially in insurance and related financial practices that can provide increased protection from disasters. Government agencies can be a reserve or contingent provider of increased liquidity to address potential market failures. They can additionally promote multilayered insurance coverage where the risk is distributed among the insured parties, the insurers, reinsurers and the public sector. For any of these strategies to succeed, risk data and market informationneed to be freely accessible and treated as a matter of public interest for the common good. Better information only occurs if the public sector strives to make it more comprehensive and reliable than is currently the case.

The most effective means to provide financial and social assistance after a disaster needs to be reconsidered by taking account of the abilities of different actors and the relative options available for greater efficiency. Conditionality and the assessment of relative needs should inform priority objectives or special circumstances, such as those that may apply to small businesses, underserved communities or marginalized segments of the population. Decisions regarding assistance for reconstruction and recovery need to be particularly sensitive to risk factors and ensure that investments do not contribute to recreating risk. Public information campaigns and transparent auditing procedures can contribute to improved accountability for all stakeholders, and especially to the affected communities.

In pursuing all of these enabling measures, Governments need to extend particular attention to SMEs, since they are both the sustaining elements of Asia-Pacific economies and the most vulnerable type of business to disasters. The public sector can aim to improve the risk awareness of smaller enterprises, and to increase theirtechnical capacities and resources to make them more resilient through the various enabling measures that are discussed.

Disasters will continue to be destructive events, but they can become strong catalysts for constructive although reactive, change by creating "windows of opportunity".Dedicated commitments by all sectors of society to invest and engage in DRM policies, strategies and specifically targeted actions can strengthen the resilience of their commonsociety. Similar collective efforts can be motivated globally through prominent intergovernmental forums, such as the biennial Global Platform for Disaster Risk Reduction, to develop new approaches and advance existing ones to increase business engagement in disaster risk management.As the United Nations Global Compact is a primary initiative for engaging the private sector and business, it can provide further impetus to engage countries and promote the critical importance of disaster risk reduction for sustainable development.

## Collaborative arrangements

Efforts to engage businesses in DRM involve actors, institutions and organizations from different sectors of society and a variety of professional backgrounds across national, regional and global scales. There is a need for multisector collaboration among public, private and non-profit sectors as well as with other elements of civil society such as academia. Multisector partnershipscontribute to enhancing societal resilience to disasters and they create advantages for all stakeholders involved in the process. They provide a sense of responsibility and accountability, enhance reputations and assistorganizations in meeting their respective goals.

The chapter presents a framework for multisector collaboration that is based on contemporary concepts. A functional partnership should ensure that there is a distributed allocation of resources with each member focusing on what it does best. There should be sufficient incentives and rewards to encourage the participants to remain motivated and fully engaged. Risk needs to be shared fairly, and accountability demonstrated appropriately among the partners, as each one is a "shareholder of risk" in the society. These features combine to establish members' ownership and enhance their commitment to achieving the partnership's goals.

Public-private partnerships (PPPs)should play an important role in DRM.These collaborative efforts can benefit the public sector by improving the efficiency of public services by harnessing private sector knowledge and resources. Private companies can obtain the advantages of making profits and improving their public reputations or sharpening their competitiveness through demonstrated abilities. PPPs can stimulate innovation in DRR by businesses setting examples and providing different types of resources. However, there are challenges associated with PPPs, especially if the relationships have not been formed carefully. These potential concerns can include unclear expectations between partners or uncertainty about authority and accountability. There is also an undesirable possibility that legitimate capacities of the public sector may be diminished by excessive outsourcing of functions to private companies. Private sectors may be reluctant to share intellectual property or afraid of possibly compromising trade secrets by cooperating fully with government agencies or other commercial peers.

Businesses can benefit from entering into partnerships with non-profit organizations with which they share similar agendas. These relationships require a high level of trust and typically work best when all parties are equal partners. Well-designed and enduring partnerships can be powerful marketing devices for enterprises by enabling them to gain a competitive advantage through increased public visibility or a positive corporate reputation.

Although partnerships between businesses and academic or scientific and research institutions are familiar with other professional disciplines, they are underutilized in DRM. These institutions can collaborate with businesses to develop and conduct training activities to educate businesses, employees and others on various disaster-related subjects. From their side, businesses can support DRM research that is useful to them, or more beneficially, for public authorities or the community, too. Some caution is required, though, for all parties to be aware of differences in the working cultures and value systems of the two sectors and potential conflicts of interest when businesses fund research programmes.

The primary message of the chapter is that collaboration among stakeholders is beneficial and necessary to achieve efficient and effective DRM. Businesses can enhance collaborative arrangements by providing technical expertise, efficient organizational skills and innovative approaches to DRM practice. When it is feasible, a multisector approach to partnerships might be preferable to bilateral collaborative arrangements since it presents the additional benefits of each stakeholder's abilities. The added diversity allows for greater flexibility among the members, as well as intensified focus for each one to use their strengths to enhance risk reduction for the community.

## Conclusions and recommendations

**Recommendation 1:** The important role, responsibility and accountability of the private sector in DRM need to be highlighted whileraising awareness across all sectors. Businesses need to be included in DRM discussion forums and assume a stronger voice.The private sector has to take initiatives to ensure that businesses are properly represented in international, regional, national and local platforms. Business advisory councils, chambers of commerce and business associations, should be addressed more actively by enterprises to create DRM interest groups and to assign focal points for private sector engagement in building resilience.This obligation of business to contribute to DRM processes is even more compelling because of the private sector's potential to create further risk. It is in the interest of businesses to encourage accountability for DRM commitments because the failings of individual companies to act responsibly can hinder the competitiveness of others, which are compliant with good practice.

**Recommendation 2:** There is a pressing need to alter the emphasis of business engagement in DRM. Businesses should proceed beyond reactive approaches to adopt more strategies that prevent disaster risk. This foresight will require replacing short-term thinking and focusinstead on longer-term strategies that build resilience to enhance the sustainability and profitability of businesses. While planning for resilience will incur initial short-term costs, ultimately the adoption of sustainability approaches will yield lasting returns. Businesses can reorient previous interests from singular or charitable CSR initiatives to creating shared value through endeavours that can benefit society by addressing social issues with a business model.

**Recommendation 3:** Enabling environments are essential features to stimulate more efforts by the private sector to build resilience. The public sector needs to create new regulatory frameworks and to enforce existing ones to increase the accountability and risk sensitivity of businesses. A greater willingness to use a variety of incentives can encourage businesses to invest in their resilience. The public sector needs to encourage the wider applicability of insurance measures by addressing market limitations and devising innovative financial instruments that can transfer risk. As the accessibility of reliable risk information is essential for effective DRM, it needs to be treated as a public value. The existing means to deliver information needs to be greatly improved and streamlined for greater efficiency. Specific support should be provided for SMEs to enhance their risk management capacities, which can be achieved through the cooperation of national DRM institutions and efforts by other domestic business enterprises or associations.

**Recommendation 4:** Ultimately, the primary requirement to address prevalent regional and local DRM challenges is for all elements in society to work together and to promote multi-stakeholder arrangements. Collaboration among all risk shareholders in a society are necessary, and their collective efforts can provide many benefits to all parties involved while they strengthen the resilience of society. It is important for partners across the public, private and non-profit sectors and in academic or other

professional disciplines to be aware of each other's capabilities and limitations. By working together, their common understanding and combined efforts will achieve the objectives for comprehensive and reliable DRM strategies to benefit the people, communities and countries in the Asia-Pacific region.

Building resilience to disasters effectively will require the full engagement of the private sector as a prominent stakeholder. Governments need to raise the awareness of the role of the private sector in DRM across all sectors while also creating an enabling environment that will facilitate and motivate the private sector to assume a more dedicated role. Collaborative arrangements among businesses and all other risk shareholders will be essential for strengthening the resilience of Asia-Pacific societies. The private sector must, therefore, stand up to contribute to the crucial task of making societies more resilient, and become a critical component of the Sendai Framework for Disaster Risk Reduction.

# Chapter 1

# Resilient Business for a Resilient Asia-Pacific Region

The Asia-Pacific region is the engine of global economic growth, and the most disaster-prone part of the world. Because of conscious actions, the number of human casualties from disasters has been decreasing over time, but since the 1970s, there has been a definitive upward trend in economic losses. From an annual average of $1.8 billion during the 1970s, disasters have cost the Asia-Pacific region an average of $73.8 billion each year between 2004 and 2013.

The private sector is the primary generator of wealth and employs the majority of workers, making it a dominant force for innovation in Asia-Pacific societies. The private sector also bears the brunt of disaster impacts. Micro, small and medium enterprises (MSMEs) are particularly vulnerable because of their more limited capacities to absorb disaster losses. Greater economic integration and increasing investments in Asia and the Pacific further magnify the adverse consequences of disasters, particularly within tightly knit global value chains.

The Hyogo Framework for Action (HFA), the global framework for disaster risk reduction efforts from 2005 to 2015, insufficiently considered the important roles of the private sector for reducing disaster risks and building resilience. The adoption of the Sendai Framework for Disaster Risk Reduction (SFDRR) by 187 countries in March 2015 provides renewed opportunities for the private sector to become strategically engaged in strengthening many aspects of disaster risk reduction. These opportunities should not be missed. Member States enshrine the reduction of loss of assets, including that of businesses, in the goal statement of the Sendai Framework:

> *"The substantial reduction of disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries".* [2]

## 1.1 Socioeconomic dimensions of disasters in Asia and the Pacific

Disasters affect societies directly through the loss of lives and livelihoods and destroy public and private assets. Their broader indirect impacts ripple through the economy and society as adversities are amplified by existing social and economic conditions. The rapid growth of populations, the concentration of assets, and the often associated conditions of expanding urbanization and industrialization of areas that previously served as ecological buffer zones to disasters (WEF, 2008) all increase potential losses. These threatening conditions increase when investments do not consider them or when communities do not respond to sound disaster risk assessments.

The Asia-Pacific region's standing as a dynamic contributor to the global economy and an engine for growth and development is continuously threatened by being the most disaster-prone region in the world (ESCAP, 2015b). This exposure poses a challenge for the region to reconcile its dynamic growth and the accumulation of assets, with rapidly rising risks and the growing exposure to natural

[1] *Throughout the present publication, the term "disaster" refers to all type of disasters – natural, technological and complex, unless otherwise stated.*
[2] *As subsequent direct quotes are references, please add this one, too, SFDRR, para 16.*

and technological hazards. The private sector has a crucial role to play as the main driver of economic growth and in its own interests to prevent the emergence and creation of risk. Building the resilience of businesses to disasters is crucial for making nations the communities where people live and work resilient.

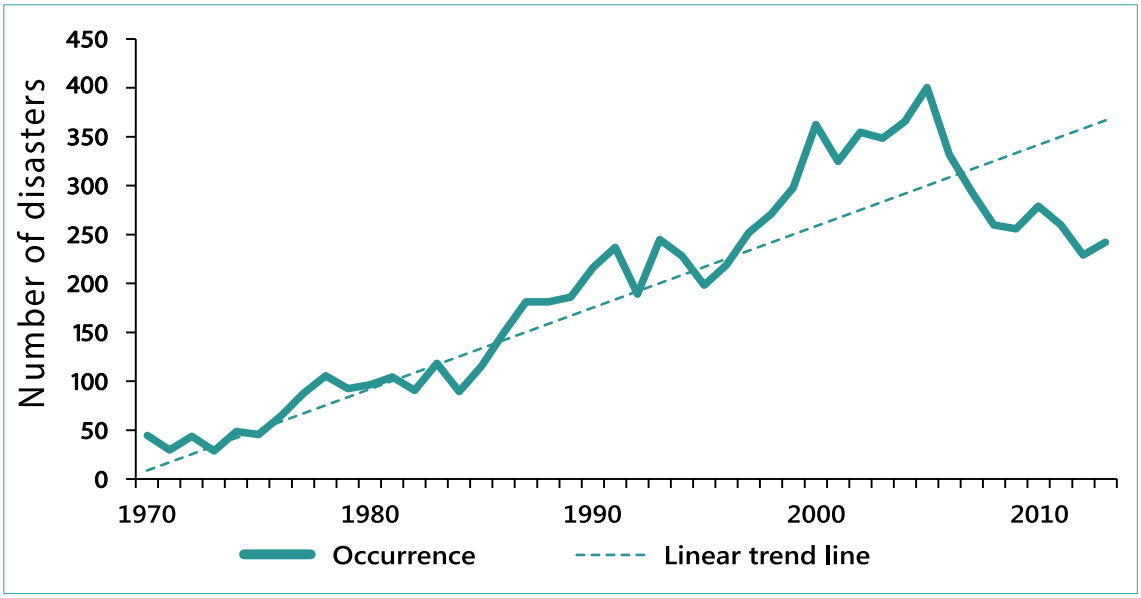
The Sendai Framework specifies the role of the private sector as the following:

> *"Business, professional associations and private sector financial institutions, including financial regulators and accounting bodies, as well as philanthropic foundations, to: integrate disaster risk management, including business continuity, into business models and practices via disaster risk-informed investments, especially in micro, small and medium-sized enterprises; engage in awareness-raising and training for their employees and customers; engage in and support research and innovation as well as technological development for disaster risk management; share and disseminate knowledge, practices and non-sensitive data; and actively participate, as appropriate and under the guidance of the public sector, in the development of normative frameworks and technical standards that incorporate disaster risk management."* [3]

### 1.1.1 Disaster characteristics and trends

Since the 1970s, the incidence of disasters has increased globally but the sharpest rise has been experienced in Asia and the Pacific. The number of disasters in the region has grown from an annual average of fewer than 60 during the 1970s to over 300 during the 2000s. [4] This five-fold increase is illustrated in figure 1-1. Since 2005, a person living in Asia or the Pacific has been almost six times more likely to be affected by a disaster than someone in Latin America or the Caribbean. An Asia-Pacific resident is nearly 30 times more likely to be exposed to a disaster than an inhabitant of North America or Europe (ESCAP, 2013a; ESCAP, 2015b).

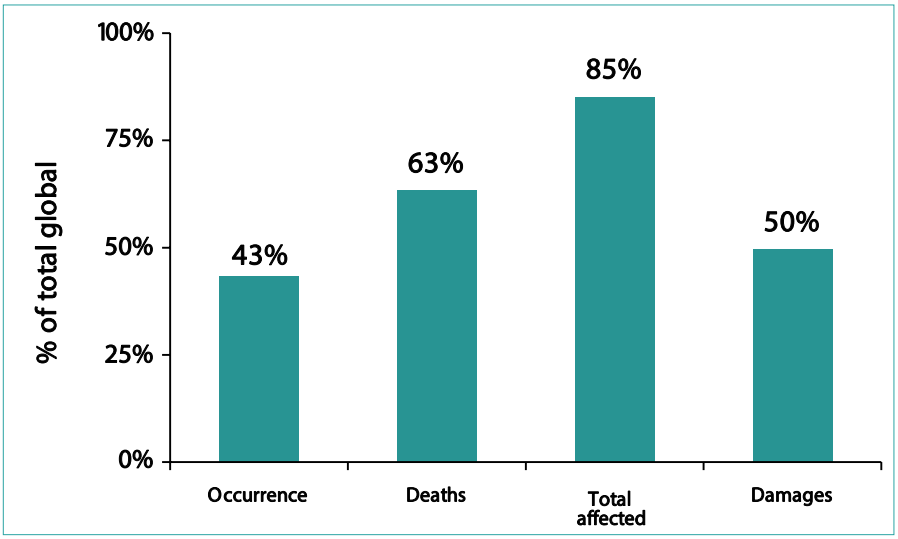
Figure 1-1 *Disaster occurrence in Asia and the Pacific*




***Source:*** *EM-DAT database.*

[3] *SFDRR para. 36 (c)*
[4] *The data on human and economic losses are from the EM-DAT database, accessed on 26 October 2014 unless otherwise noted. http://www.emdat.be/database*

Figure 1-2 *Disaster impacts in Asia and the Pacific, relative to the world (2004-2013)*

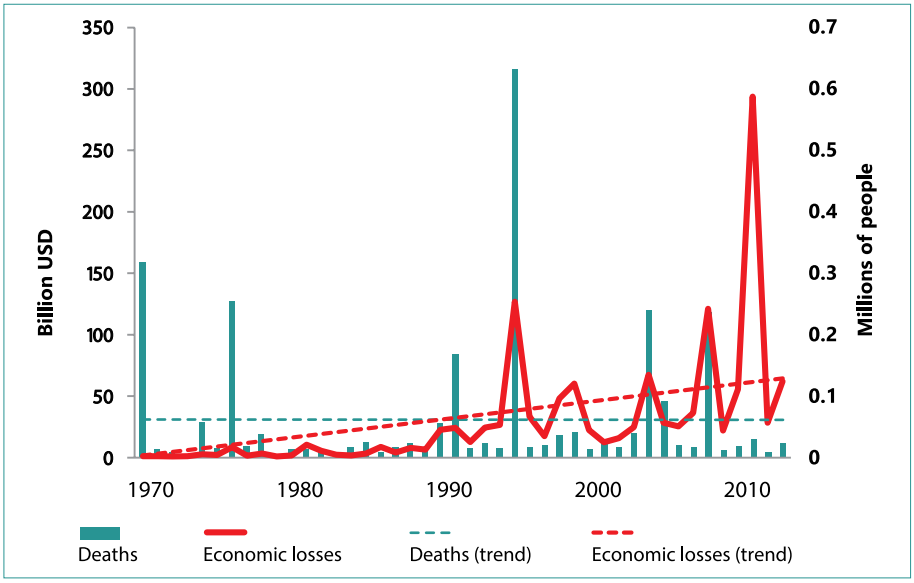



**Source:** *EM-DAT database.*

Figure 1-2 illustrates that the Asia-Pacific region is the most disaster- affected region in the world. During the period from 2004 to 2013, 2,919 disaster events or 43 per cent of global disasters occurred in the region, affecting almost 1.5 billion people, killing more than 700,000. These numbers represent 85 per cent and 63 per cent of global totals respectively. The high population densities in the region and their greater exposure to disaster events combine to provide a stronger justification for investing in risk reduction in the Asia-Pacific region in comparison the rest of the world. Figure 1-3 illustrates that there has not been an increase in the number of casualties since 1970 despite periodic massively deadly catastrophes.

However, there is a significantly contrasting trend for increasing economic losses over the same period, and particularly since the 1990s. From a yearly average of $1.8 billion during the 1970s, disasters have cost the Asia-Pacific region $73.8 billion annually between 2004 and 2013. This is an increase of 40 times and is 49 per cent of global economic losses. The costliest year in history for disasters was 2011, with recorded losses of $294 billion in the Asia-Pacific region alone, representing 81 per cent of all global losses (figure 1-3).

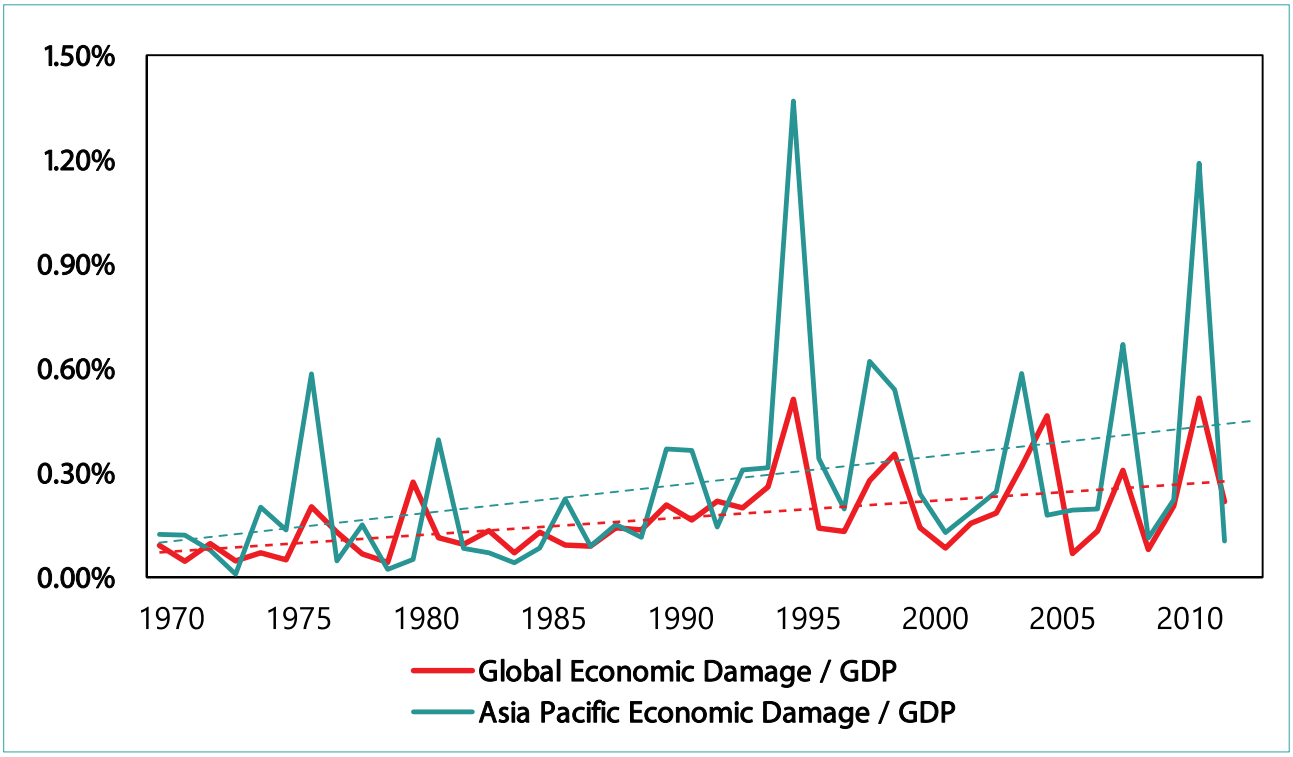
Figure 1-3 *Economic and human losses in Asia and the Pacific (1970-2013)*




***Note:*** *damages are in current US dollars* ***Source:*** *EM-DAT database.*

Disaster losses relative to the GDP have been increasing since the 1970s, as indicated by the consistent trend lines in figure 1-4. The relative impact in Asia and the Pacific is approximately 52 per cent higher than that for the world, with annual averages ranging from 0.38 per cent to 0.25 per cent respectively between 2003 and 2012. These staggering losses in both absolute and relative terms highlight the gravity and urgency for achieving greater disaster resilience in Asia and the Pacific (figure 1-4).

Figure 1-4 *Economic losses as a share of gross domestic product (1970-2012)*




*Data are from natural hazard-related disasters only.*
***Source:*** *ESCAP (2015a).*

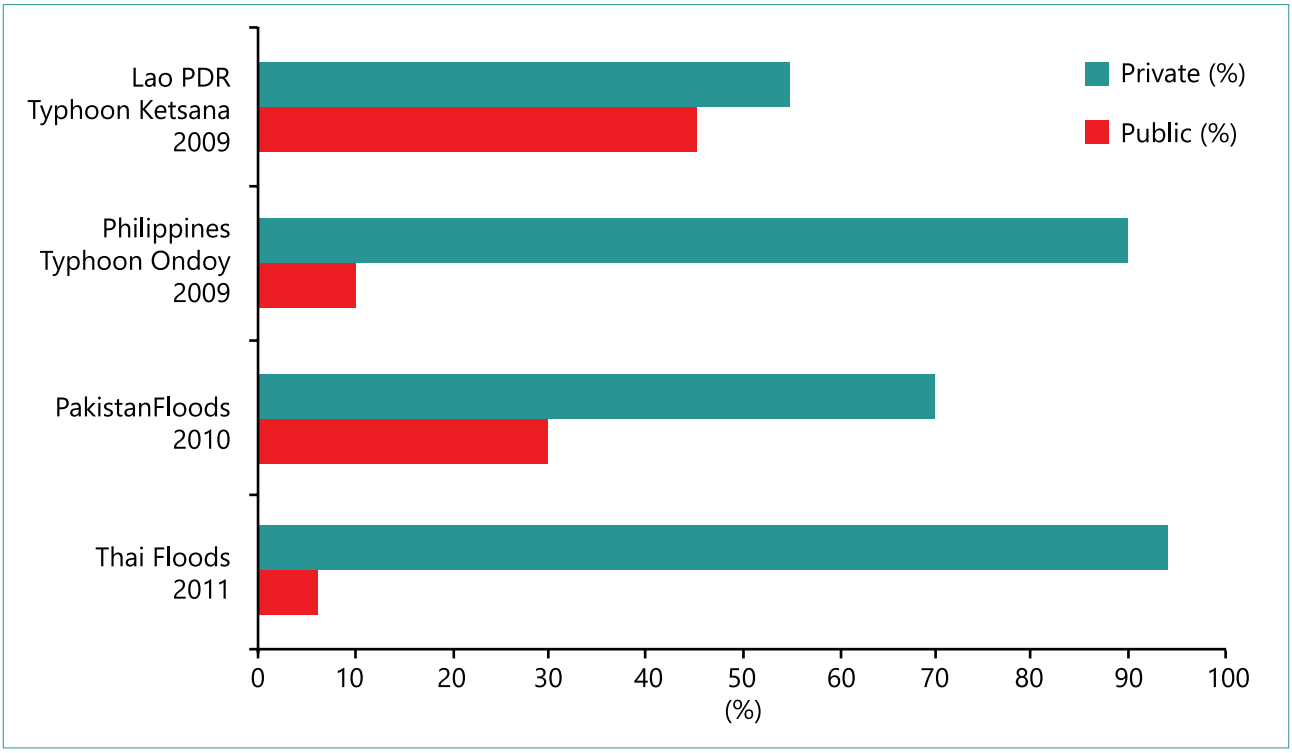
### 1.1.2 Impacts of recent disasters on Asia-Pacific businesses

Effects of disasters on businesses are significant regardless of the size or the nature of the industry. Recurring small-scale disasters and slow-onset disasters particularly affect small and medium-sized enterprises and these impacts constitute a high percentage of all losses.[5] Micro, small and medium enterprises (MSMEs) are particularly vulnerable due to their lower capacities to absorb disaster impacts (ESCAP, 2015b). In the Philippines in 2009, Typhoon Ketsana's destruction caused an estimated total loss of $246 million (NDCC, 2009). The agricultural sector, which comprises a large number of MSMEs, sustained the most damage at $157 million. The typhoon significantly affected these smaller businesses, which were already in a disadvantaged economic position even before the disaster. This experience was similar to that of the 2010 floods in Pakistan where losses totalled $10 billion and micro and small enterprises likewise bore the brunt of the economic losses (ESCAP and UNISDR, 2012) (figure 1-5).

As economies are becoming increasingly integrated at regional and international levels, global value chains (GVCs) with their rapid expansion and interdependency among nodes are becoming more exposed to disaster risks. The Great East Japan (GEJ) earthquake and the Thai floods in 2011 revealed the extent to which disasters can affect GVCs. The GEJ earthquake caused Japanese automobile

[5] *SFDR, para. 4*

Figure 1-5 *Who pays for disaster losses?*




***Source:*** *ESCAP and UNISDR (2012).*

production to fall by 48 per cent. Since the production was highly integrated into the global economy, the widespread disruptions were felt around the world, with a pronounced impact in Asia. For example, automobile production fell in Thailand by 19.7 per cent; in the Philippines by 24.0 per cent; and in Indonesia by 6.1 per cent (ESCAP, 2013a). Similarly, the floods in Thailand affected transnational companies the most, adversely influencing their cross-border operations throughout Asia and other continents. According to the World Bank, economic damages amounted to $45.7 billion, [6] with manufacturing loss and insurance payment assuming 94 per cent of the cost (ESCAP and UNISDR, 2012).

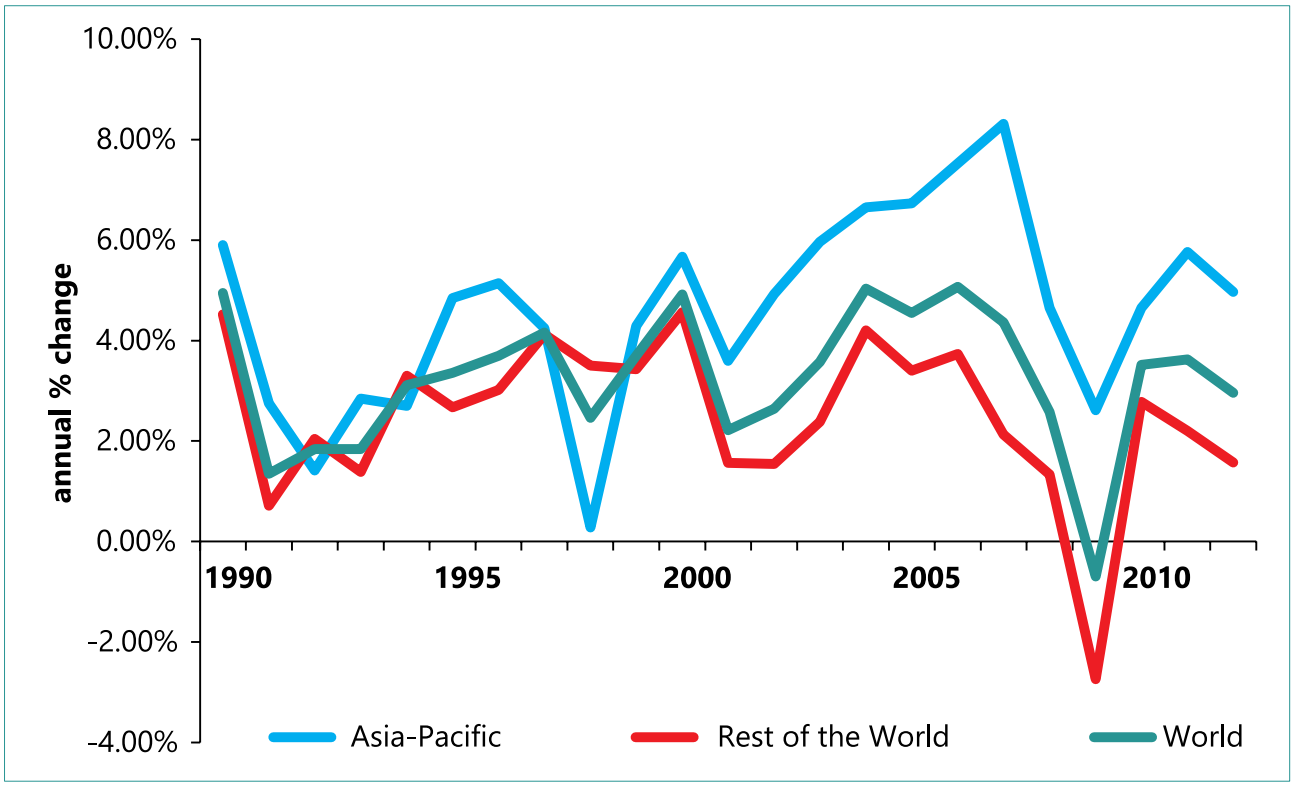
## 1.2 Asia-Pacific businesses: the world's engine for growth is at risk

The private sector is the primary generator of GDP, employer of the majority of the labour force, and the dominant vehicle for innovation (ESCAP and UNISDR, 2012). It is the engine for economic growth in most countries. That commanding role will be diminished if the necessary investments in private sector activities are not sufficiently risk-sensitive to minimize both economic and societal exposure to disaster risks. The private sector shares the consequences of disaster risks and equally has a responsibility to reduce them.

[6] *World Bank website news, 13 December 2011, "The World Bank Supports Thailand's Post-Floods Recovery Effort" http://www.worldbank.org/en/news/feature/2011/12/13/world-bank-supports-thailands-post-floods-recovery-effort*

The Asian-Pacific region has been the dominant engine for the world's growth since the 1990s. Figure 1-6 illustrates the annual GDP growth rates of Asia and the Pacific (blue), the rest of the world (red) and the world's average (green). Except for 1998, when the effects of the 1997 Asian financial crisis brought the region's GDP growth to nearly zero, Asia and the Pacific has been the fastest-growing region. It has been lifting the average world economic growth every year since 1990, as shown by the gap between the blue and the red lines. The Asia-Pacific region grew on average 2.13 per cent faster than the rest of the world on an annual basis since 1990.

Figure 1-6 *Annual real gross domestic product growth comparison (1990-2012)*

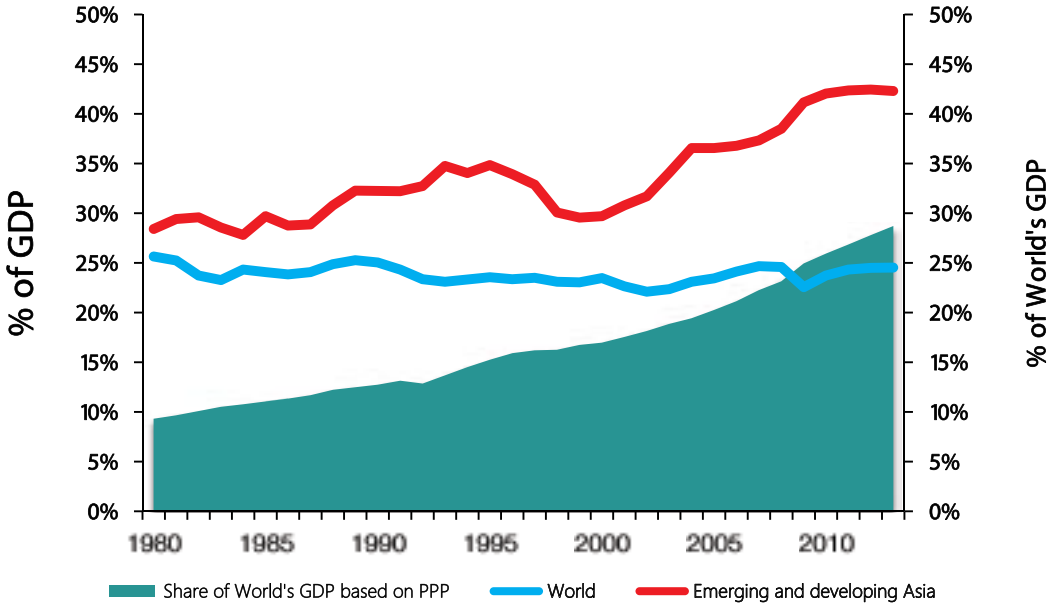



***Source:*** *ESCAP database.*

Emerging and developing Asia's (EMDA) GDP share of global GDP (green area in figure 1-7) has increased from 7.5 per cent in 1980 to 25.9 per cent in 2013. Over the past three decades, EMDA has transitioned from a marginal position in the world's economy to gain a leading role by representing more than a quarter of the world's output. While global investment was slightly decreasing in relative terms from 25.5 per cent of the GDP in 1980 to 24.5 per cent of the GDP in 2013 (blue line), investment in emerging and developing Asia increased from 28.8 per cent of GDP to 42.7 per cent in the same period (red line).

In spite of this substantial growth, ensuring sustainable and inclusive growth while being the most disaster-prone region in the world will continue to be a major challenge for Asia-Pacific countries in the long term. This will require joint efforts to address the many vulnerabilities but few commitments are likely to have the potential benefits of the private sector's comparable abilities for preparedness activities and its readiness to manage disaster risks.

Figure 1-7 *Gross domestic product and investment in emerging and developing Asia and the world (1980-2013)*

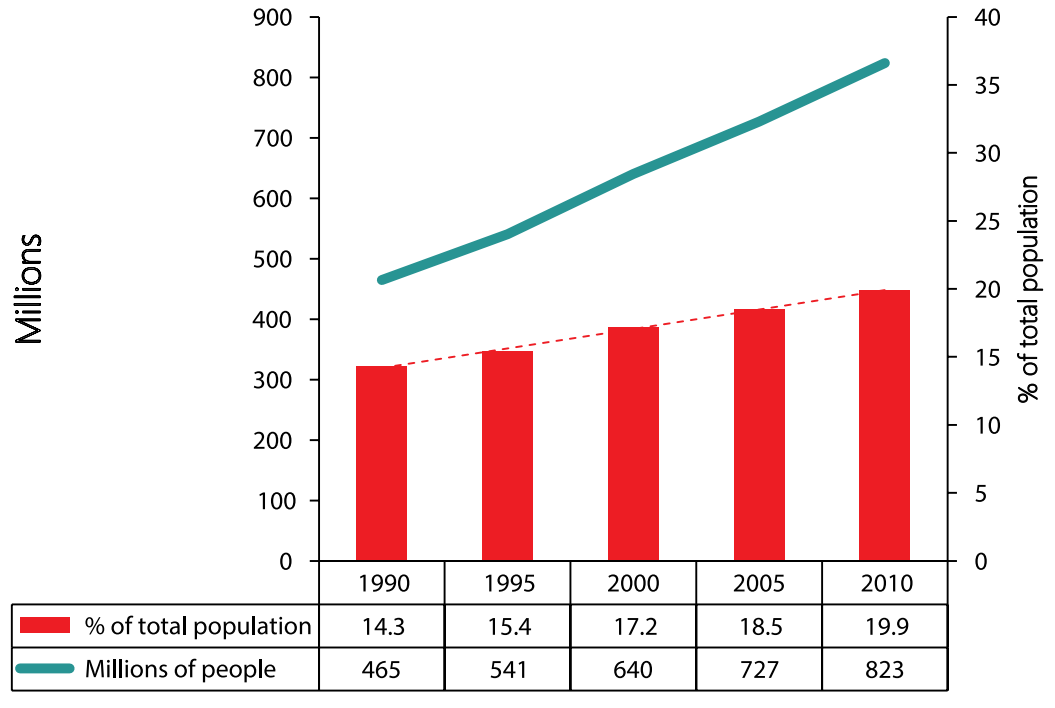



***Source:*** *International Monetary Fund, World Economic Outlook, (2014).*

## 1.3 Increased exposure of businesses to disaster risks

Rapid population growth and the need for continuing economic progress combine to create difficult issues that have to be addressed collectively by Asian and Pacific societies (figure 1-8). Demographic pressures and shortages of land for infrastructure and business expansion are physical examples of

Figure 1-8 *Populations living in agglomeration of 750,000 or more inhabitants in Asia and the Pacific (1990-2010)*




| | 1990 | 1995 | 2000 | 2005 | 2010 |
|---|---|---|---|---|---|
| % of total population | 14.3 | 15.4 | 17.2 | 18.5 | 19.9 |
| Millions of people | 465 | 541 | 640 | 727 | 823 |

***Source:*** *Source: ESCAP (2013b).*

these challenges. Efforts to improve public awareness and the adoption of cultural values of safety depend on understanding and acquired social attributes. Without concerted and shared commitments, these conditions drive people, economic assets, and business operations into hazardous areas. The growing complexity of numerous urban disaster risks in the region demonstrate the consequences of rapid growth and inadequately managed development practices.

This situation is worsened by growing economic integration and rising investments in Asia and the Pacific, especially within tightly knit global value chains that transmit or compound adverse effects throughout businesses and related socioeconomic conditions. In a globalized world, disaster losses affect the critical infrastructure and ecosystems on which individuals and businesses rely, as well as hindering the economic environments in which both the public and private sectors operate. This greater exposure to risks creates a vicious cycle of risk accumulation. It can only be broken when all actors make new investments in building resilience all actors to reduce future losses (WEF and UNISDR, 2007).

### 1.3.1 Increasing investments and regional integration in Asia-Pacific

In 2013, developing economies in Asia[7] accounted for almost 30 per cent of global foreign direct investment (FDI) inflows and remained the world's primary recipient region in absolute terms (figure 1-9). Asia-Pacific Economic Cooperation (APEC) represented the largest regional economic group of countries in terms of FDI inflows, with its members receiving 54 per cent of global inflows. [8]

Figure 1-9 *Inward foreign direct investment stock, 1990 and 2013 (US$ billions)*

| | 1990 | 2013 |
|---|---|---|
| **World** | 2,078 | 25,464 |
| **Developing Asia** | 340 | 5,202 |
| **Developing Asia, % of world total** | 16% | 20% |

***Source:*** *UNCTAD World Investment Report 2014 (2014).*

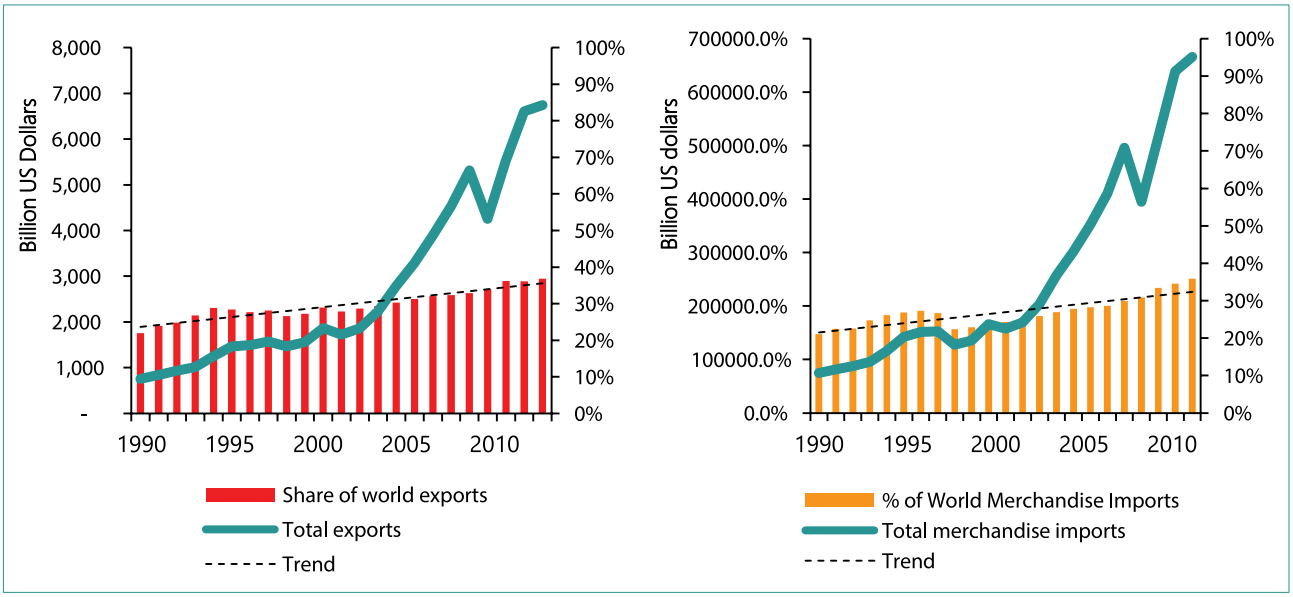
According to the World Investment Report 2014, the inward FDI stock in developing Asia has been showing a continuing upward trend since 1990, increasing 15 times from $340 billion to $5.2 trillion in 2013. This represents an increase of inward FDI stock as a share of the global total from 16 per cent to 20 per cent. Investment continues to flow into Asian countries attracted by their rapid economic growth and favourable policy reforms. These incentives for investment also can increase the economic, social and physical exposure to disaster risks, especially in disaster-prone areas or for people dependent on fragile ecosystems.

Since 1990, the Asia-Pacific region has experienced rapid growth in trade in absolute terms and relative to all global trade. Imports and exports have each increased six times from less than $1 trillion in 1990 to almost $7 trillion in 2012. The corresponding shares of global imports grew from 21 per cent to 22 per cent, and in global exports from 36 per cent to 37 per cent (figure 1-10).

A stronger interdependence among national economies is reflected in the continuing process of wider geographical distribution of production. Final assembly operations are moving to low-wage

[7] *Developing economies in Asia, as classified in UNCTAD Stat*
[8] *Data are from UNCTAD, World Investment Report (2014).*

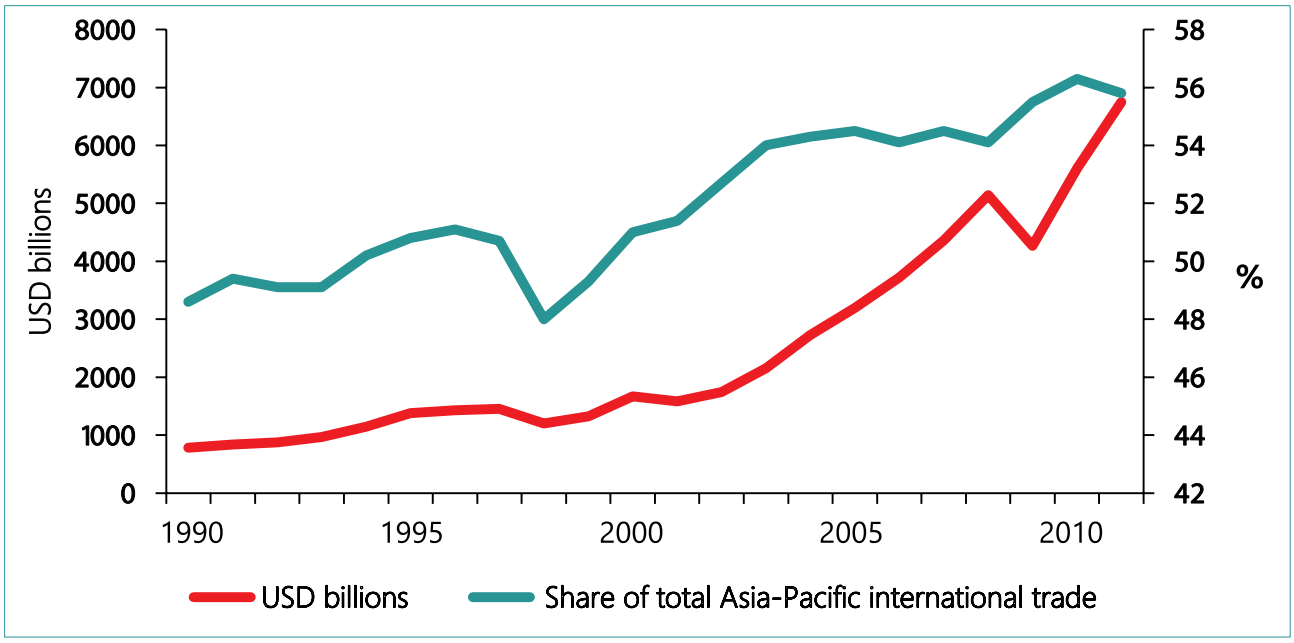
Figure 1-10 *Merchandise exports and imports of Asia-Pacific (1990-2012)*




***Source:*** *ESCAP statistics.*

economies where they often are concentrated in relatively more physically vulnerable locations. Other high value or technologically sophisticated production processes are located elsewhere in more developed economies, but they also tend to be concentrated close to other commercial services or required resources. The increase in industrial production trade has created sophisticated manufacturing, logistics and service networks in emerging Asia (IMF, 2007).

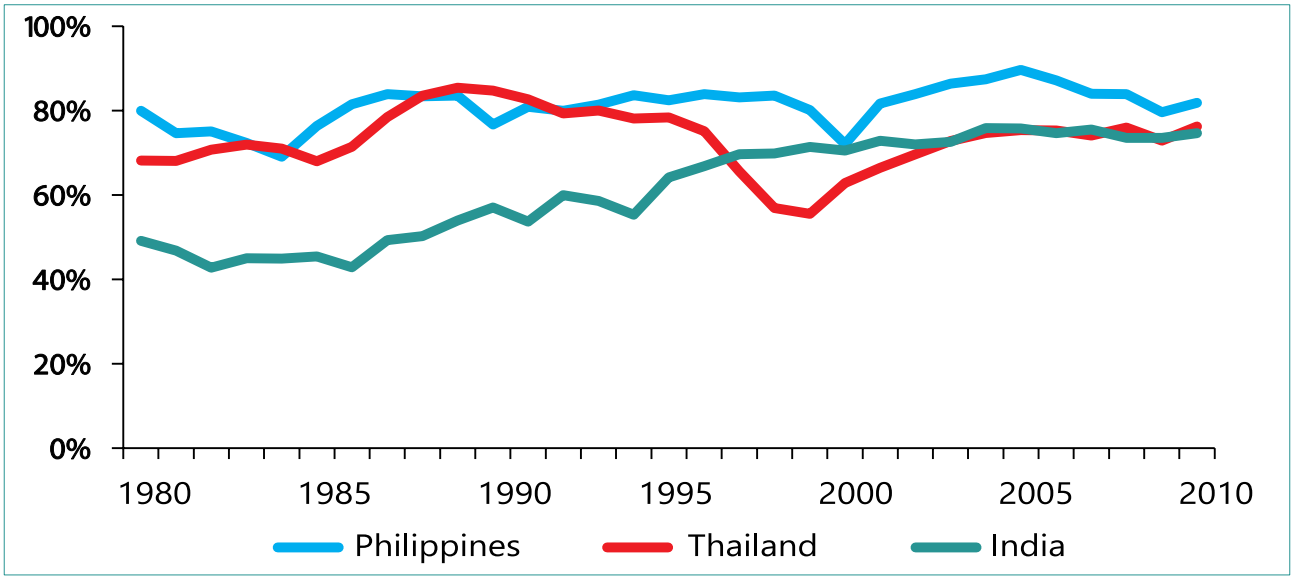
Figure 1-11 *Intraregional trade in Asia and the Pacific (1990-2011)*




***Source:*** *ESCAP database.*

Intraregional trade in Asia and the Pacific has become increasingly important since the 1990s. With a steady increase in the level of regional integration since 1990, the intraregional share of total Asia-Pacific international trade approached 56 per cent in 2011 (figure 1-11). Although this interdependence fosters trade, it also creates new risks. A disaster occurring in one highly commercialized location or having severe effects in one country can quickly spread to other places affecting subsidiary industries with costly and far-reaching consequences.

Figure 1-12 *Private sector share of total gross fixed capital formation in selected disaster-prone Asian countries*




***Source:*** *The World Bank (2014).database.*

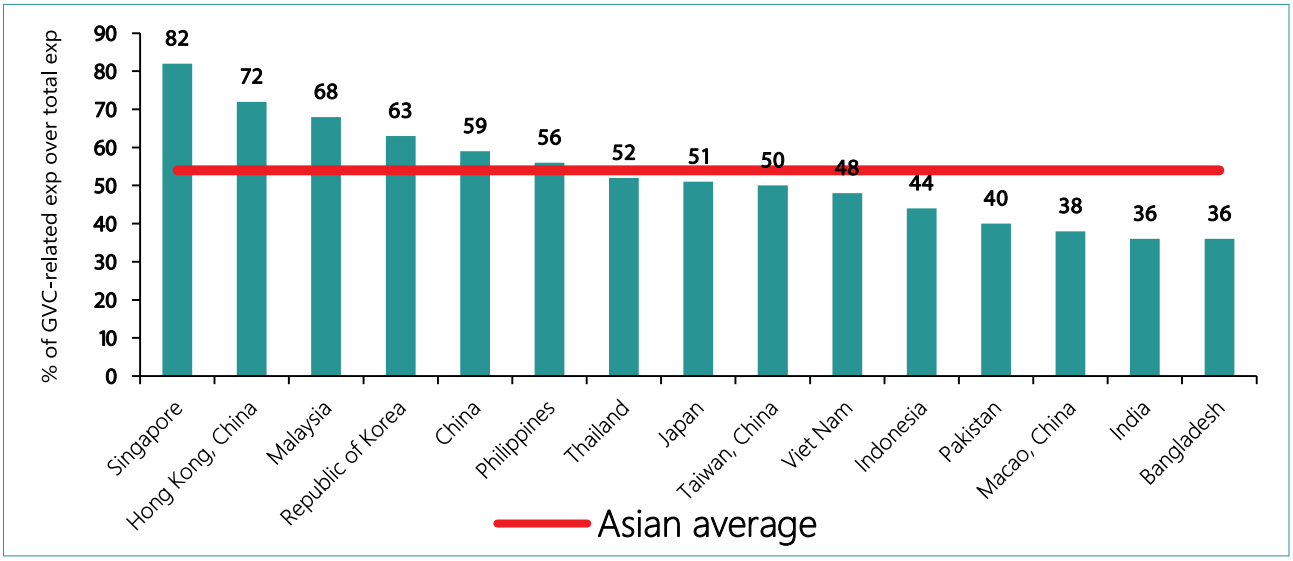
There is currently no consensus for an indicator to represent macroeconomic exposure to disaster risk. Gross fixed capital formation (GFCF), which measures the change in the value of fixed assets in a given economy, is used as one indicator of relative economic exposure to disasters (UNISDR, 2013a). The real exposure, however, is significantly higher since disasters destroy more than only fixed capital assets. Other intangible assets such as customer portfolios, contractual agreements, market share, human capital and other highly valued resources can be irreparably damaged or lost following a disaster. Although GFCF is not an indicator of total investment, available data on the private sector's share of total GFCF makes it a useful proxy to compare public and private investments (figure 1-12).

Private investment represents between 70 per cent and 85 per cent of overall investment in most economies, especially in developing countries (UNISDR, 2013b). The more limited public sector investments provide social and productive physical infrastructure. Figure 1-12 represents the private sector share of total GFCF for three selected disaster-prone emerging Asian economies for which data is available: India, Philippines and Thailand. In the case of Philippines and Thailand, the private sector share of total GFCF has fluctuated between 70 per cent and 80 per cent since 1980. India has demonstrated a remarkable growth of private sector GFCF since 1985 with increasingly greater investments by the private sector in the national economy. In 2010, they represented more than 70 per cent of total Indian GFCF. The figures for these three Asian countries are consistent with UNISDR findings in 2013, as they increase the concern that greater investment in fixed capital, infrastructure and expanding trade in an integrated region create more national exposure to disaster risk.

### 1.3.2 Rapid development of global value chains

The modern economy has created many more multinational companies (MNCs), and most of them are dominant elements in global value chains (GVCs). According to UNCTAD (2013), these complex systems that serve transnational enterprises account for 80 per cent of the world's trade. These value chains are cross-border business networks that span the world and consist of numerous facilities, operations, suppliers and subcontractors of all sizes. Each "node" or element of the value chain has its own clients regardless of any particular ones associated with a single supply or production series (figure 1-13).

Figure 1-13 *Participation of selected Asian economies in global value chains, 2010*




***Source:*** *UNCTAD, World Investment Report (2013).*

The contributions of GVCs to development can be significant. In developing countries, value added trade contributes an average of nearly 30 per cent to their GDP, compared with 18 per cent of the GDP in developed countries. The extent to which an economy is serviced by GVCs can stimulate the growth of GDP per capita by beneficially affecting jobs, income and value added production.

The level of participation in regional value chains varies widely among Asian countries. Figure 1-13 presents the GVC participation of selected Asian countries for which data is available, based on the percentage of GVC-related exports to their total exports. Singapore and Hong Kong, China demonstrate more than 80 per cent and 70 per cent of their respective exports are associated with GVCs. Malaysia, the Republic of Korea, China and the Philippines, exceed in that order the regional average of 54 per cent GVC-related exports. Thailand, Japan, Taiwan China, Viet Nam and Indonesia follow with a respective range from 52 per cent to 44 per cent of GVC-based exports. South-Asian economies demonstrate from 36 per cent to 40 per cent GVC exports.

Regional production chains have been a factor in the success of emerging Asian economies to develop their export sectors, but they also involve a greater exposure to risks, including those derived from disasters beyond countries' borders.

Firms that participate in GVCs are more likely to be exposed to hazards with the wider geographical distribution of their assets and activities. Although hazards affect businesses differently, business features such as the nature of an industry, operational planning and reserves, procurement procedure, size and distribution linkages determine a firm's relative exposure to disaster-related risks. When they are highly dependent on GVCs with their lean production efficiencies and narrow reserve margins, disruption in one part of a global value chain can quickly spread to entire business networks. An entire value chain can easily be disrupted as there is no single managing authority despite the many supporting services and subordinate suppliers. As SMEs are major components in transnational networks, they are more likely to experience the biggest impacts of disruptions because of these conditions.

# Chapter 2

# Risk, Resilience and Accountability

This chapter provides the moral and social perspectives for business resilience. By considering their different understanding of risk by DRM practitioners and business managers, the discussion emphasizes that achieving sustainable development depends on societal and business resilience. Disasters can quickly destroy development accomplishments, significantly diminishing the value of previous human and financial investments in the process.

The chapter discusses the determining features of business resilience and how business practices can either contribute to reducing risk or creating more costly new risks. The effectiveness of disaster risk reduction is determined, in part, by coordination mechanisms within and across sectors and with relevant stakeholders at all levels. This requires full engagement of all State institutions and a clear articulation of responsibilities across public and private stakeholders, including business,[1] to ensure mutual outreach, partnership, complementarity in roles and accountability and follow-up. Additional thoughts are provided about the accountability of different stakeholders in DRM and the principle of their shared responsibilities. These issues all advance the case for more intentional and intensive engagement of the private sector in DRM.

## 2.1 Definitions of risk and risk management in a business context

It is important to appreciate that risk is understood differently in business environments than it is by DRR practitioners. There are also nuanced differences in their views about resilience, so knowledge about these distinctions can be instructive when promoting business engagement in DRM. Table 2-1 presents two of the more widely accepted definitions of risk and risk management. The UNISDR definition[2] explains the DRM practitioners' views, and the International Organization for Standardization's (ISO) definition[3] reflects a more business-oriented understanding of the term.

Table 2-1 *Definitions of risk and disaster risk management*

| Terms | UNISDR | ISO |
|---|---|---|
| **Risk** | The combination of the probability of an event and its negative consequences. | The effect of uncertainty on objectives. |
| **Risk management** | The systematic approach and practice of managing uncertainty to minimize potential harm and loss. | A systematic process of optimization that makes the achievement of objectives more likely. |

DRM practitioners generally focus on the negative aspects of risk and thus propose the need for better management of human resources, environmental issues and economic assets to mitigate such adverse consequences. By contrast, businesspeople see risk as a neutral factor in the attainment of any objective, which requires a systematic process of optimization towards achieving those objectives. By expressing risk as a potential opportunity and not just as a threat, the emphasis is shifted to the possibility of taking action, rather than addressing a problematic event as something to contend with or resolve. This implied difference is meaningful when analysing the primary motivations for private sector involvement in DRM.

[1] *SFDRR, Guiding Principles, para. 19(e)*
[2] *UNISDR: http://www.unisdr.org/we/inform/terminology*
[3] *ISO Guide 73:2009. Risk Management: vocabulary.*

For businesses, risk management has been an important driver as their stakeholders are always concerned about the risks the firm may face. Many groups associated with a business, including its shareholders, employees, customers, suppliers or government agencies are increasingly scrutinizing the "risk appetite" or the willingness of the firm to address risk. This evaluation leads to support for business managers to engage in risk management practices that would protect the various stakeholders' interests.

A business organization needs to consider the potential impacts of all types of risk on all of its activities. These implications include temporal aspects such as delayed earnings, or the physical effects of climate change on strategic planning in such areas as rising sea levels or altered market conditions. Given the increasing complexity of businesses and their operations, a comprehensive approach to risk management is needed to ensure that all potential risks are identified and addressed. As with any major business undertaking, risk treatment strategies have to be designed and applied effectively with commitments from all of a firm's stakeholders. The responsibility is not limited only to executives or management teams.

Although it may appear that typical non-profit enterprise and business approaches to DRM are so different, they share similar priorities. Both approaches are motivated by saving lives, protecting assets, maintaining activities, and restoring their operations as quickly as possible after they are disrupted. DRM practitioners in government agencies and non-profit organizations can learn more about cost-efficiency and optimizing their procedures from business risk management practices. In either case, these abilities are essential for improving accountability to financial supporters or taxpayers in the use of financial resources, or to their wider clientele by providing quality services. Conversely, business risk managers can benefit from the experience of DRM practitioners in a variety of local, national and international disasters.

## **2.2** Sustainable development and business resilience

The Brundtland Commission defined sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs"[4] (WCED, 1987). The commission's report Our Common Future references two intrinsic factors in sustainable development: meeting human needs, and limiting some actions and behaviour in the common interest of the public.

Sustainable development is widely understood to have three dimensions: economic, sociocultural and environmental. It has the objectives of not only creating, but also maintaining, prosperous social, economic, and ecological systems (Folke and others, 2002). However, economic development that is environmentally sound and socially inclusive is not necessarily financially sustainable in the long term. Sustainability further implies persistence and the need to demonstrate adaptability, endurance and survival in the face of adversity. The concept of resilience is, therefore, necessary to ensure sustainability.

[4] *The World Commission on Environment and Development, commonly known as the Brundtland Commission, was established by United Nations General Assembly resolution 38/161 of 19 December 1983 to formulate "a global agenda for change", including proposed strategies for sustainable development.*

*Resilience is a necessary condition for achieving society's goal of long-term sustainable development.*

Resilience was first defined by ecologist C.S. Holling as "a measure of the persistence of systems and of their ability to absorb change and disturbance and still maintain the same relationships between populations or state variables" (Holling, 1973). Adger (2000) applied the ecological dimension to a social context, stating "resilience is the ability of groups or communities to cope with external stresses and disturbances as a result of social, political, and environmental change". Folke and others (2010) determined that resilience is "the capacity to change in order to maintain the same identity". ESCAP (2012) links resilience to the lives of people, defining it as "the capacity of countries to withstand, adapt to and recover from natural disasters and major economic crises – so that their people can continue to live the kind of life they value".

In essence, a resilient system or society has both the strength and the capacity to adapt to internal or external shocks without changing its actual nature. In practice, resilience demonstrates proactive political attitudes and social values that enable a society to thrive, despite intervening stress or threats to its continuing existence. Disaster risk and resilience were insufficiently considered in the Millennium Development Goals despite their mutual relevance and reciprocal dependencies. Reducing the risk of potential disasters helps to protect human resources, economic assets and allows for the accumulated advantages of development investments (UNISDR and WMO, 2012). Conversely, disasters can undermine and destroy previous development accomplishments. The ultimate goal of disaster risk reduction is to increase society's resilience by protecting human lives, economic assets and social infrastructure. For a society to be resilient, Government, civil society, local communities and of course, businesses all need to be resilient themselves.

### 2.2.1 What makes business resilient?

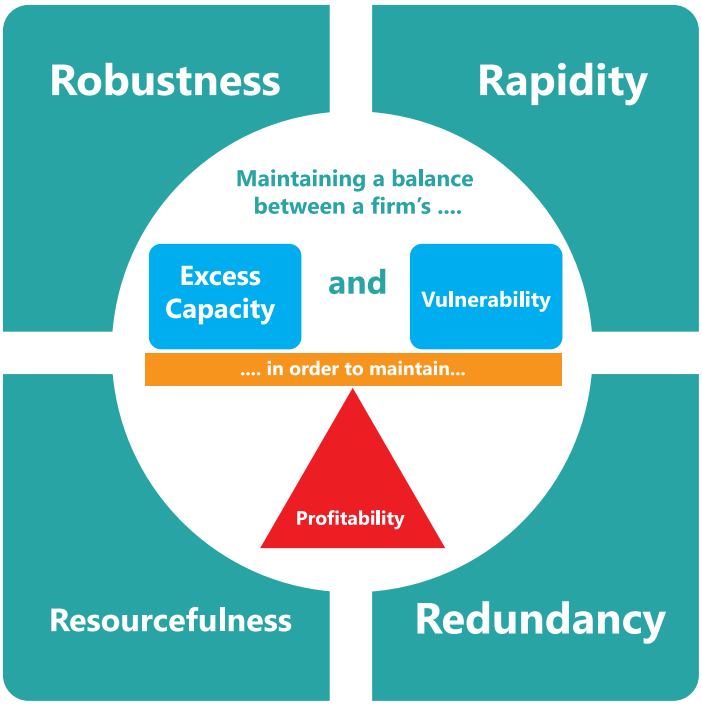
With the business world constantly changing, resilience is required to manage the risk that is inherent in any competitive environment (Council on Competitiveness, 2007). Despite theoretical references, what does resilience mean for business? How can businesses apply resilience to benefit in tangible ways? How can their efforts be measured?

Business resilience is the capacity to survive, adapt and grow in the face of turbulent change (Fiksel, 2006), as well as to evolve and organize into new and more desirable configurations when necessary (Pettit, 2008). It is a two-dimensional concept encompassing both "hard" aspects related to the status and use of physical assets, as well as "soft" ones associated with organizational and human capacities (figure 2-1).

Regarding the hard aspects, Bruneau and others, (2003) define system resilience as comprising four properties: robustness, rapidity, redundancy and resourcefulness.

Robustness is the strength of an organization's assets or the degree of resistance to negative shocks without suffering significant degradation or loss of function. This strength emanates from the prevention or avoidance of risks during the pre-investment phase of business or from capacities to manage risks throughout business activities.

Figure 2-1 *Dimensions of business resilience*




***Source:*** *Created based on Bruneau and others (2003), and Pettit (2008).*

Rapidity refers to the speed at which assets can respond to negative impacts to stop losses and minimize disruption.

Resourcefulness is the capacity to mobilize available assets in adverse conditions.

Redundancy is the degree of excess capacity in a system or alternative components to ensure the continuation of intended functions if critical components were to fail. In business, it is imperative to maintain a balance between a firm's excess capacity and its vulnerability to maintain profitability (Pettit, 2008). These principles of business resilience are summarized in figure 2-1.

The Resilient Organizations project has identified 13 indicators that can be used to measure the soft aspects of business resilience. [5] Figure 2-2 illustrates a framework that classifies them into three broad categories: leadership and culture, networks and change readiness. Businesses can use the framework to benchmark their progress in DRM activities and their improved resilience. The components of the framework are elaborated in the following paragraphs.

## *Leadership and Culture*

A clear and inspiring vision is a good indicator of leadership. It provides a path from the early phase of business prior to investment through the business project management cycle to help cultivate opportunities, while maintaining risks at an acceptable level. Strong crisis leadership contributes to good management and sound decision-making during crises, as well as aligning current strategies with organizational goals. The effective involvement of staff to execute management decisions

[5] *ResOrgs (Resilient Organizations) is a collaboration among New Zealand research universities, particularly the University of Canterbury and the University of Auckland (http://www.resorgs.org.nz/).*

Figure 2-2 *Indicators of the soft aspects of organizational resilience*


***Source:*** *ResOrgs Project (http://www.resorgs.org.nz/).*

successfully depends upon their understanding the linkages between their individual roles, the organization's resilience, and its long-term vision. Staff should be encouraged to assess and be aware of every risk affecting the organization and its performance, in addition to identifying potential problems in their areas of competence. Incentives can encourage employees to provide substantive risk assessments, identify early warning signals or report potential problems to organization leaders.

By clearly establishing roles and authority, managers can ensure that regardless of their positions, the staff has opportunities and the authority related to their work. This clarity is particularly crucial for timely crisis response when previous knowledge or assigned abilities can add significant value. Managers can cultivate a culture of creativity and innovation by providing incentives for staff members to use their knowledge in novel ways to solve current problems or to anticipate future ones.

### *Networks*

An organization might need to access specific resources or additional support from other organizations during a crisis. Effective partnerships, prior planning and attentive management are all necessary to ensure vital collaboration in emergencies. Good knowledge management facilitates access to critical information by staff. It becomes essential to obtain expert opinions when they are needed urgently. Role-sharing arrangements and the prior training of employees in tasks other than their routine duties can multiply their skills in crises. Efforts to minimize social, cultural and behavioural barriers among employees, using inclusive measures, bridging departmental divides, or breaking through "silos", can counter detrimental business habits. The effective management and timely mobilization of an organization's internal resources can enhance its capacities, and increase a firm's ability to continue business operations during or following a crisis.

### *Change Readiness*

A firm needs to have the ability to react and adapt quickly in taxing situations. Organization-wide awareness and a unity of purpose about an organization's priorities during a crisis are essential. This prior readiness will depend upon a complete understanding of the organization's minimum operating requirements at all levels of responsibility. Enhancing communication opportunities between management and staff, as well as the rehearsal of emergency management and business continuity plans, will improve an organization's preparedness capabilities. Other valuable organizational qualities are the cultivation of proactive attitudes with strategic and individual readiness to respond to early warnings or to anticipate abrupt changes in the working environment before a crisis event unfolds. Strategies to manage vulnerabilities related to business conditions or that may affect stakeholders should be developed and monitored continuously. These plans need to be tested under stress conditions and validated in simulations or drills with essential management and widespread staff participation.

## 2.2.2 Business contributions to community resilience

Public sector investment is essential to provide effective social and productive infrastructure, but private investment represents over three fourths of overall investment in most economies, and especially in developing countries (UNISDR, 2013a). With such a large influence in most economies, the private sector should be a major contributor to creating a resilient society.

Society depends on commerce and functioning markets for the provision of necessary goods and services. Businesses contribute significantly to the livelihoods of people, by providing employment that brings income into households. They contribute to the development of countries and the well-being of communities so are a major force for social cohesion in any society. For these reasons, companies should be deeply embedded in the fabric of the communities where they are located.

This leadership is in the interest of the private sector since it is susceptible to business interruptions when disasters occur. Business failure or disruption of employment after a disaster can devastate a community or have far-reaching impacts on society. Business engagement in DRM, therefore, is a crucial determinant of long-term sustainable development. Resilience has to become a necessary condition for the continuation of socioeconomic development over time.

## 2.3 The role of businesses in risk creation and risk reduction

There is universal recognition that disasters have the potential to erode development gains, but there is less awareness of the potential that some development actors have for unwittingly increasing vulnerability, or more beneficially, for creating resilience (UNISDR and WMO, 2012). This is equally a demanding issue with far-reaching consequences for businesses that managers need to contend with if they are to maintain a profitable business enterprise.

**RISK = HAZARD x EXPOSURE x VULNERABILITY**

The concept of risk lies at the intersection of hazard, exposure and vulnerability. Reductions or increases in any of these factors, while other elements remain constant, will alter the level of risk that is present. Although the private sector has unique capabilities to contribute to the reduction of risk, businesses also can accumulate risk depending on their actions. Table 2-2 shows some examples of impacts that different business decisions can have on the three risk factors and their dimensions, as well as the outcomes in terms of the risk faced by society.

Table 2-2 *Impacts of selected business activities on risk in societies*

| | **RISK FACTORS** | | | | | |
|---|---|---|---|---|---|---|
| | HAZARD | | EXPOSURE | | VULNERABILITY | |
| | Natural hazard disasters | Human-induced | Location | Conditions | Sensitivity | Adaptive capacity |
| Business Actions | Polluting, destroying, overusing resources | Behaving insensitively or with moral hazard | Investing in hazardous areas due to lack of risk information or sensibility | Exposure to risk generated by mediating social, economic and regulatory structures | Purchasing inadequate equipment, non-compliance with building codes | Operating with inadequate emergency management or business continuity plans |
| Outcome | *INCREASED RISK FOR THE SOCIETY* | | | | | |

Typically, business organizations assess risk as an external factor when performing risk assessments and SWOT analyses. [6] Risks that business operations or investment decisions create for other stakeholders or external parties are not ordinarily heeded unless they are unlawful or reflect potential corporate liabilities. This human and organizational behaviour can be explained by the theory of collective action (Olson, 1965) which invokes what is called a "moral hazard" or a "free rider" problem.

Moral hazards occur when individuals or organizations accept higher risks than they otherwise would because of their belief that in case of failure, resulting losses would be borne significantly by other parties (Krugman, 2008). In business, this leads to firms making riskier investments or pursuing operations without sufficient accounting of negative consequences arising from their actions. Instead, they assume that any losses would be compensated by insurance companies, through

[6] *Strengths, weaknesses, opportunities and threats (SWOT) analysis is a process used to identify key influencing factors on potential projects or ventures to inform the planning process and design of the strategy.*

government bailouts or subsidies, or simply by the affected community absorbing the losses. Mueller (2003) states that "organizations that effectively represent large numbers of individuals [require] separate and selective incentive(s) be used to curb the free-riding behaviour. As society is composed of actors with different and competing interests, there is a need for incentives or coercive systems to prevent one entity from taking unacceptable advantage of other parties' compliance with risk management regulations. Using risk for one's advantage at the expense of others is not socially responsible.

The attitude of firms is slowly evolving towards an acceptance of more corporate social responsibility. This awareness has been motivated partially by the growing prevalence of socially engaged business groups such as the United Nations Global Compact or the ESCAP Business Advisory Council. Nonetheless, there is a need for better enforcement of existing laws and regulations, and the development of new ones to accelerate enhanced corporate social accountability. There are growing opportunities to recognize business potential for reducing risk, but if businesses are to be socially responsible, they also need to be held accountable for the risks that they create.

## **2.4** The principles of shared responsibility and accountability in disaster risk management

A common question when considering the risks faced by society and the related issues of accountability is, "Who is responsible for reducing risk?" Everyone in society contributes to risk in different ways, so there is an undeniable principle of shared responsibility that has to be recognized.

Society can be viewed as being sustained by four economic pillars: the public and the private sectors, the non-profit sector and the community. Each of these aspects of society is exposed to disaster risk, and they all contribute in some way to increasing or reducing the risk for other elements in society. For these reasons and through the collective behaviour of its members, each of the four pillars becomes a "risk shareholder" of society. Any element within a society can increase the risk borne by the rest of the society by irresponsible actions or by not being accountable for its behaviour.

The private sector encompasses many enterprises that contribute to society's economic development and people's well-being. Accordingly, the private sector as a whole shares the consequences of disaster risk and equally has a collective responsibility to act in reducing it. Acting on the risk sensitivity of private sector investments is fundamental for the very survival of individual businesses and the society.

Public and private interests are demonstrating a shared responsibility by calling for a "new social contract" to address disaster risk management activities [7] (McLennan and Handmer, 2014). This growing initiative reflects a rights-based approach to DRM as it recognizes the rights of all people and imposes obligations and accountability among actors with specified roles and responsibilities. The term "joint responsibility principle" has been coined to imply that national and local public authorities, the private commercial sector, agricultural and industrial sectors, non-governmental organizations,

[7] *In this context, a social contract is understood as the constituent elements of society agreeing explicitly or tacitly to the different roles and responsibilities, which each assumes within the society. These shared obligations may include surrendering certain rights to the authority of the Government in exchange for protection of other benefits judged to be in the wider interests of the society's prosperity and well-being.*

individuals and the media have a joint responsibility regarding prevention and mitigation of disaster risk as well as response in the face of emergency situations (Prieur, 2009).

Accountability and the principle of joint responsibility are central to realizing private sector involvement in DRM. Accountability improves governance and the provision of public services for all stakeholders. All elements of society need to be accountable for their actions and in conducting their relationships within the DRM framework. This shared responsibility encourages the efficient use of available resources and can foster rewarding partnerships among stakeholders.

Table 2-3 shows examples of benefits from increased accountability in DRM relationships among primary stakeholders. Non-profit organizations can act as "watchdogs" to monitor the accountability of public and private sectors. They also need to be accountable for the effectiveness of their actions, as well as in the appropriate and efficient use of resources received from businesses, communities and governments.

Table 2-3 *Accountability framework for key stakeholders in disaster risk management*

| From/ To | BUSINESSES | GOVERNMENT | NON-PROFIT ORGANIZATIONS | CONTRIBUTION TO SOCIETY |
|---|---|---|---|---|
| **BUSINESSES** | Maximize profits, increase value of equity (from management to shareholders)<br><br>Guarantee business continuity (from management to shareholders, customers, insurers, etc.)<br><br>Provide a safe working environment (from management to employees) | Pay taxes and abide by law<br><br>Foster regulatory compliance<br><br>Fulfil contractual responsibilities (PPP)<br><br>Share information Increase risk awareness and disclosure | Influence responsible business practices (social, environmental)<br><br>Provide CSR funds and contributions in-kind<br><br>Develop strategic long-term partnerships | Create jobs<br><br>Maintain a safe environment<br><br>Demonstrate "duty of care"<br><br>Support relief and humanitarian assistance<br><br>Increase risk awareness and disclosure |
| **GOVERNMENT** | Provide an enabling environment for DRM investment (regulation and incentives)<br><br>Provide quality public goods, resilient services and infrastructure<br><br>Enhance financial flows Increase technology development and transfer<br><br>Improve transparency and information sharing | Provide financial and technical support Increase collaboration (national, provincial and local governments, ministries and agencies)<br><br>Share information and transfer knowledge among government bodies | Provide aid funding<br><br>Provide quality public goods, resilient services and infrastructure<br><br>Improve transparency | Provide protection<br><br>Provide quality goods, resilient public goods, services and infrastructure<br><br>Provide aid funding and supplies<br><br>Improve transparency and information sharing |

| | | | | |
|---|---|---|---|---|
| **NON-PROFITS** | Advance the use of CSR funding efficiency and effectiveness<br><br>Act as watchdog<br><br>Increase transparency | Advance the use of aid funding efficiency and effectiveness<br><br>Act as watchdog<br><br>Increase transparency | Improve collaboration, avoid duplication of actions<br><br>Increase transparency | Social protection and humanitarian aid Improve the use of donation efficiency and effectiveness Increase transparency |
| *RISK SHARING -- REWARD FLOWS -- ENVIRONMENT* | | | | |

A related feature of accountability is the responsibility of all stakeholders in DRM to respect and sustain a healthy and productive environment for all. Initiatives and enterprises that damage the environment or destroy natural resources that people depend on for their livelihoods create more risk. Damaging the environment can worsen the consequences of climate change and can increase the frequency and severity of disasters.

The examples shown in table 2-3 demonstrate the multiple and complex relationships of shared risk and responsibilities among stakeholders. A failure of businesses to engage seriously in DRM will worsen people's exposure to risk in different sections of society. The loss of personal assets, financial disruption, or commercial bankruptcy because of disasters caused by natural hazards will have widespread implications for employees, customers, clients and suppliers. A failure of businesses to provide a safe working environment increases the direct or indirect potential for fatalities among employees, and in the surrounding communities. Business disruption after a disaster reduces the availability of goods and services over a short term. If interruptions are extended, they can have much more lasting consequences by affecting local employment opportunities. Excessive, uncontrolled or irresponsible use of natural resources can cripple industries and destroy communities and even peoples' ways of life in fragile environments. Short-term or high-risk investments can lead to human-induced disasters resulting from financial crises, oil spills, deforestation, water shortages and land degradation.

# Chapter 3

# Disaster Risk Management for Businesses

Investing in disaster risk management has proved to yield economic benefits, which is the ultimate goal of any business. However, investing in a project that yields benefits only in case of a relatively unlikely event is a difficult business proposition. Opportunity costs need to be considered, as resources allocated to risk reduction cannot be used otherwise. Risk-reducing investments are not only about business survival and preventing losses, as they can increase competitiveness and long-term business viability in addition to providing other benefits.

Risk is managed throughout the business cycle using a risk management strategy to determine how much risk to avoid, accept, mitigate and transfer for optimal business operations and to remain competitive. The Sendai Framework[1] addresses this by calling for the promotion of the development of quality standards with the participation of the private sector, civil society, professional associations, scientific organizations and international organizations like the United Nations. Industry standards exist that define enterprise risk management (ERM) best practices and suggest effective courses of action, such as international and national standards for business continuity management (BCM). Small and medium enterprises (SMEs) should receive particular consideration from the public sector and larger business partners to ensure their well-being, since while they are an integral part of the economy. They represent 97 per cent of all businesses and employ more than half of the workforce in APEC economies while being the most vulnerable businesses to disasters (APEC, 2014).

Different motivations for business engagement in DRM will be discussed in this chapter and viewed in a model that takes account of their non-economic drivers. Different forms of DRM engagement and the tools businesses use to do so will be reviewed to highlight the challenges involved. It is anticipated that the discussion will ease the opportunity for more involvement, particularly among SMEs.

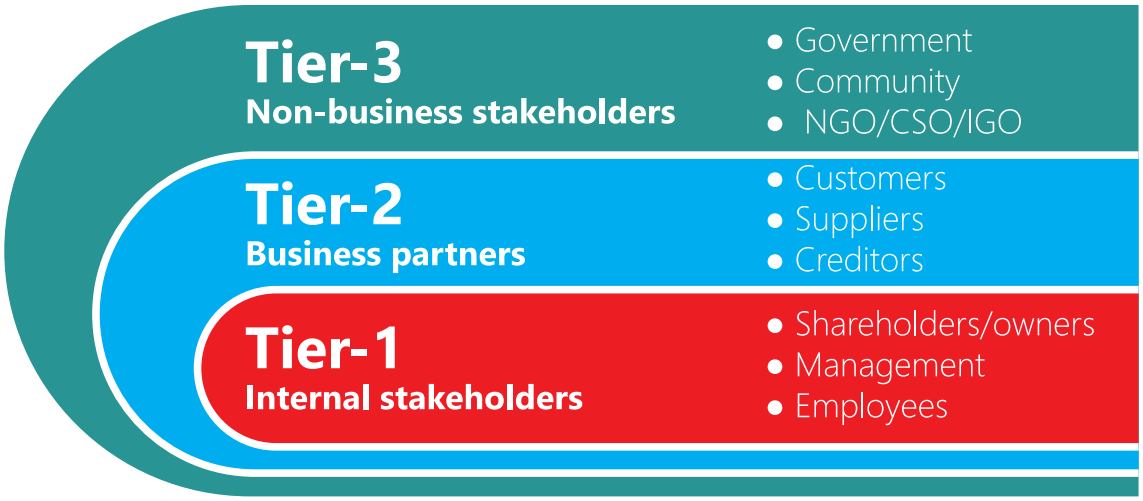
## **3.1** Engaging businesses in disaster risk management: an issue of business management accountability.

Understanding the structure of business organizations and how their decisions are made gives insight into the motivations that influence commitments to DRM. Stakeholder theory provides a useful framework that includes business ethics, moral values and politics to explain corporate behaviour beyond economics (figure 3-1).

Companies have different sizes and structures, ranging from single-proprietor companies or individual traders to transnational corporations and financial holding groups. All organizations are influenced by many business stakeholders, i.e. organizations, groups or individuals who hold different interests in the company (Post, Preston and Sachs, 2002). These can be classified into three broad groups: internal business stakeholders, external business stakeholders (or "business partners") and external non-business stakeholders. Figure 3-1 presents these business stakeholder groups in three tiers, considering the extent of their interest in the company and their proximity to the management team.

[1] *SFDRR, para. 27 (j).*

Figure 3-1 *Private sector stakeholders*




The survival and legitimacy of the corporation as an institution depend on its success in generating economic profits and on its ability to meet the expectations of the different stakeholders who contribute to its existence and success (Post, Preston and Sachs, 2002). The management of the relationships among the various and often competing demands of an organization's stakeholders, and how they relate to the corporation's strategic goals, significantly affects decision-making (Ackermann and Eden, 2011).

Decision-making happens at all levels in a business, but in the context of DRM it is usually the executive management team and designated risk managers that decide on DRM investment strategies and make other risk management decisions.

### 3.1.1 A model for disaster risk management decision-making

Besides making profits and increasing the value of the company for the shareholders, business managers have many responsibilities to their stakeholders. Handy (1991) argued that managers are the custodians of corporate assets, the value of which needs to be protected and enhanced for a range of present and future stakeholders that might not be limited to company shareholders.

The proposed model for DRM decision-making suggests that business engagement in disaster risk management derives from an inherent relationship of accountability from managers to the different business stakeholders. This is the case regardless of whether the primary intention is to protect one's own business interests, to assist the community, or to support the Government, among other possible results. Various accountability relationships will be elaborated below, followed by a table relating the main drivers of business involvement in DRM to different types of engagement.

#### *Management accountability to internal stakeholders*

Tier 1 internal stakeholders are groups or individuals who work directly within the business, such as shareholders or owners of the company, the executive management team and the labor force or employees. Owners and shareholders are interested in maximizing the value of the company while earning higher returns on their investments. Regardless of their position, all employees want to earn high wages, work in a safe environment, develop their careers and most importantly, keep their jobs.

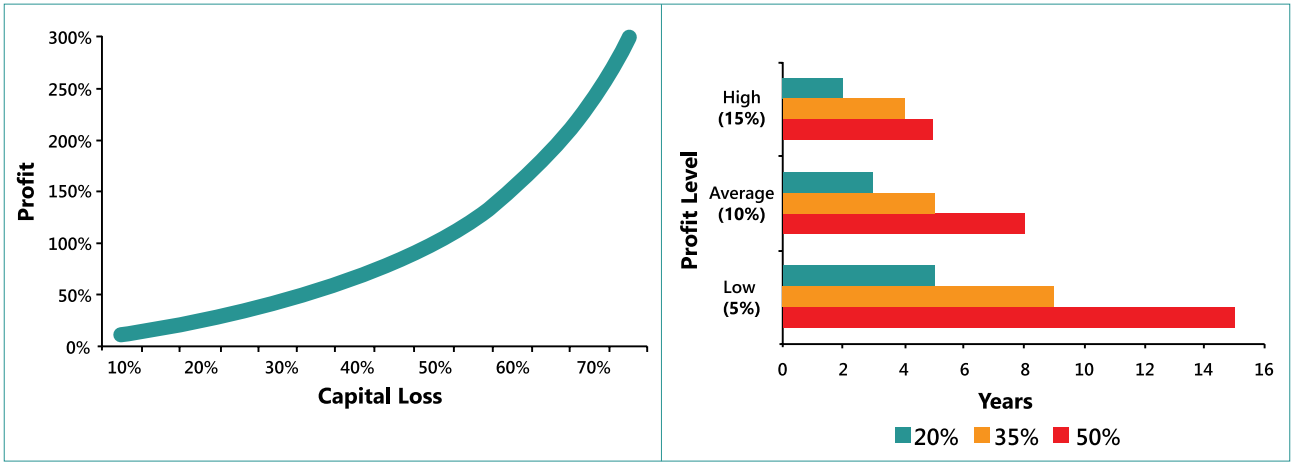
The executive management team needs to cater for the needs of safety and better wages of the employees while maintaining profitability and continually increasing the company's value for its owners and investors. These combined responsibilities combine both supporting and challenging factors for investing in DRM.

## *Economic drivers*

Investing resources in DRM provides economic benefits, which is the ultimate goal of any business. As an example, the utility company Orion New Zealand Ltd. invested $6 million in seismic protection that saved the business $65 million after the Christchurch earthquakes in 2010 and 2011 (UNISDR, 2013b). It is less costly to invest in disaster risk prevention and mitigation than to pay for losses after a disaster.

When a business loses capital for any reason, its recovery is long and painful. Figure 3-2, (left) illustrates that profits required to return a firm to pre-disaster capital levels are exponential. If an uninsured business were to lose 10 per cent of its capital, it would need to make a profit of 11 per cent to return to its pre-disaster capital level. However, a loss of 50 per cent would require a profit of 100 per cent to recover to the same level, since growing the capital of a business is more difficult when the initial capital is smaller. Across industries, average business operating margins are between 7 per cent and 10 per cent. [2] [3]

Figure 3-2 *Post-disaster capital recovery, by required profit (left), and by time (right)*




***Source:*** *Authors' calculations*

In considering the time required for a company to recover pre-disaster capital levels, were a company making an average annual profit of 10 per cent previously, it would take about three years for it to recover a 20 per cent capital loss, or nine years to recover from a loss of 50 per cent (figure 3-2, right). [4]

A study conducted by the Institute for Business and Home Safety (IBHS)[5] revealed that an estimated 25 per cent of businesses do not reopen following a major disaster. These findings and others that document the challenges of successful recovery, particularly for small enterprises, indicate that

[2] *"Margins by sector (US)", Stern School of Business, New York University. http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/margin.html*
[3] *David Bianco, "This should convince you that high profit margins are sustainable." http://www.businessinsider.com/david-bianco-high-profit-margins-sustainable-2012-5*
[4] *The estimates provided are very conservative, as they do not include any income losses during business interruptions.*

adequate investment in DRM is crucial for the survival of businesses. Conscientious preparedness also can increase both customer and employee retention as business interruption after a disaster often results in increased attrition.

DRM investments can make businesses more competitive before, during and after a disaster. By preventing and reducing risks, particularly extensive risk from small but frequent disasters, a business can be much more competitive in the long term. Increased reputation and brand value are economic benefits that have a positive impact on long-term sales and profits. DRM investments can facilitate access to more favourable financing conditions by providing repayment assurance to creditors. Businesses that have invested the most in risk management may financially outperform their peers (UNISDR, 2013b) (box 3-1).

Box 3-1 *Maiya Co. Ltd.'s positive experience during a disaster*

Maiya Co., Ltd is a local supermarket chain in Iwate Prefecture, Japan. After the Great East Japan (GEJ) earthquake in May 2011 when other local stores and national convenience store chains closed because of interrupted supply chains, Maiya continued operating to provide food and other necessities for community residents. Maiya secured supplies in two ways. It established local community networks where trusted relationships provided assistance for emergencies. It also participated in a national association of more than 200 local supermarkets that provided backup supplies to each other during disasters. The company maintained a well-maintained supply of generators, fuel, floodlights, and plastic tarpaulins so that outdoor shopping areas could be set up.

After the earthquake, Maiya continued to sell its products in affected areas and opened satellite stores in temporary housing units where other stores were destroyed by the tsunami. Maiya also reached the residents in temporary housing and isolated communities by using truck stalls loaded with fresh foods. After three months, Maiya opened its first temporary retail space in Rikuzentakata City, where most of the buildings had been destroyed by the earthquake. The temporary store thrived as people had nowhere else to shop. Maiya was able to open four more stores within the next year. Although only 10 of Maiya's 16 stores survived the earthquake, the company's annual sales volume was equivalent to that of the previous year, with more revenue per store than in previous years.

***Source:*** *Adapted from UNISDR (2013h).*

Investing in DRM can generate new business opportunities that are either directly associated with disasters or relevant in other circumstances. In the first instance, a business can participate with the Government in an emergency agreement to perform a specific task during an emergency. Some businesses have learned that if they are able to function immediately following a disaster when other firms cannot, their customers often remain with them for the long term. If companies provide needed or philanthropic services following a disaster, their brand can be elevated, and aid recipients become later customers. The case of Maiya Co. Ltd., described in box 3-1, is a good example of how a well-prepared company remained open for business when others failed to do so, increasing its market share and customer base in the process.

Beyond the immediate circumstances of a disaster, a business can identify other new or previously overlooked market opportunities by being sensitive to the changing needs of a community after a crisis. Disasters are becoming more frequent, and as Governments and businesses are increasing

[5] *Open for Business, Institute for Business and Home Safety. http://www.ibhs.org/docs/OpenForBusiness.pdf*

their awareness of the risks associated with them, the demands for DRM services from both the public and private sectors will increase steadily. Given the complex and costly nature of post-disaster reconstruction, the Sendai Framework encourages cooperation, under the coordination of national authorities, of diverse institutions, multiple authorities and related stakeholders at all levels. This includes affected communities and businesses.[6] To summarize, when making DRM investment decisions, managers are influenced by economic reasoning, which includes the following issues:

- Business survival
- Long-term cost savings from returns on mitigation investments
- Enhanced company reputation and brand image
- Employee loyalty and retention
- Innovation and enhancement of employees' skills
- Increased competitiveness and market share
- New business opportunities

## *Duty of care towards employees*

"Duty of care"[7] for staff was traditionally an intangible concept in business, but it has evolved to become an important concern for senior executives as they recognize its potential to benefit their companies in tangible, profit-enhancing outputs. Organizational management and business literature has established that employee satisfaction contributes to organizational success and can be directly correlated with the greater financial performance of a business.

The Corporate Leadership Council (2003) noted that numerous studies supported the idea that links exist between employee satisfaction and customer satisfaction, productivity and financial results. The Harvard Business Review (2013) underlined the role that company leadership plays in engaging employees, generating improved customer satisfaction and business results. Marketing Innovators (2005) explained that content employees engender satisfied customers, solidifying their own relationships with the organization. These attributes ultimately result in profits, as customers spend more money with the company. Both large corporations and SMEs can capitalize on this favourable consideration of employees to gain a competitive advantage.

For an organization, the duty of care includes ensuring the general well-being of employees and especially in disasters. Failure to provide a safe working environment for employees at any time can cause the loss of human lives. These concerns are often addressed in Corporate Social Responsibility (CSR) policies, most often adopted by larger organizations. In the case of SMEs, the proximity of senior managers to the workforce can suggest that duty of care for staff is more implicit than in larger workforces. Regardless of an organization's size, disaster risks create uncertainty and can exacerbate the conventional challenges that businesses face when operating across highly interconnected national, regional and international systems. Efforts by businesses to ensure employee well-being provide the combined benefits of enhanced financial performance and strengthened organization abilities to cope with disasters because of strong morale and long-term staff commitment. Both of these features contribute to business resilience.

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[6] *SFDRR, para. 33 (i).*

[7] *Duty of care is the adherence to a standard of reasonable care by an individual or a group of people while performing an activity that has the potential to cause physical, mental or economic harm to others.*

### *Managers' compensation: personal incentives or impediments to risk management?*

Compensation schemes for decision makers and managers can hinder DRM investments if they are based on realizing rapid returns on investments and fail to reward decisions that increase the firm's value over the long term.

An employee's economic compensation is often composed of a wage salary plus an annual bonus, which is typically modest for regular employees and mid-level managers. However, bonuses are often substantially greater for senior executives, and likely to be determined by productivity, or specifically, performance measured in terms of profit.

Such compensation schemes commonly reward primary corporate decision makers for greater profits generated in shorter periods, rather than for engaging in more deliberate actions to ensure growth and continued profitability over a longer time. These business considerations undervalue expenditures that will yield tangible value further in the future, so are considered expenses rather than investments to create or protect capital assets. This could ultimately have a negative impact on the long-term sustainability and future revenue of the company. This is particularly relevant for business engagement in DRM since most investments to reduce risks yield their results over time.

For this reason, there is a rationale that forward-looking qualitative indicators should be included in executive management compensation schemes. Without conscious modification of short-term quantitative performance indicators, prevailing business practice will continue to serve as perverse incentives benefiting the company today but hindering its sustainability in the future.

### *Management accountability to business partners*

Tier 2 external business stakeholders, or business partners, are the groups or individuals who work with the business but not engaged in the business. They are customers, suppliers and creditors. Creditors expect to receive timely repayment of their loaned capital plus a return on their investment. Customers intend to obtain goods or services from the company according to contractual agreements. Suppliers sell their goods and services to the company and expect to be paid according to their prior agreement with the company. In terms of viable value chains, both customers and suppliers are interested in a continuous and timely flow of goods and services to avoid disruptions in their activities or businesses.

### *Ensuring continuity of supply chains, fulfilling responsibilities*

Modern economies are highly interconnected for reasons of efficiency and productivity, to minimize costs and increase revenue. The necessary dependence of business on increasingly dispersed and fragmented production networks that operate on precise "just-in-time" schedules with limited material margins create correspondingly high economic exposure. It has become critical for managers to ensure the continuation of business operations and to maintain adaptive capacities "to bounce back" rapidly and efficiently when systems are disrupted.

Business strategies include the use of widely recognized measures such business continuity and emergency management plans. They also encompass approaches that can create a stable foundation

for business operations and resilience in the face of threats to a company's performance. Failure to maintain business operations during a disaster can fracture a wider production network that could lead to a cascading systemic failure.

Business investments in resilience can increase a company's reputation for reliability and, therefore, trust among customers and suppliers, especially in highly integrated production networks. Ultimately, this can attract more business to the company. Managers who invest in DRM and can keep their networks functioning are accountable to their customers and suppliers. Companies also have to fulfil their contractual responsibilities with business partners to avoid costly penalties or more expensive litigation that could threaten the company's reputation or profitability.

### *Safeguarding goodwill, ensuring profits*

Solid and long-term relationships with customers are based on trust and integrity in addition to mutually beneficial economic terms. These relationships are essential for securing future sales, profitability and stability, so they need to be safeguarded. Intuition suggests that if a company's customers perform well, then the company will also be more likely to perform well. Maintaining organizational reputation by being transparent and responsible with customers is likely to improve the goodwill of a company in the long term.

Managers can be challenged by disclosing risks to customers to whom they owe fiduciary responsibilities to maintain a trusting relationship at the expense of potentially lower short-term profits for the firm. During the 2007/2008 financial crisis in the United States, many investment banks that were supposed to be advising their clients on various financial strategies including investment risks were themselves engaging in proprietary or unethical trading. Without disclosing seeming or real conflicts of interest to their clients and the American regulatory agencies concerned led to firms eventually agreeing to multimillion-dollar punitive settlements. Beyond the financial costs involved, the definitive damage done to the banks was in the loss of their business reputation.

### *Business accountability to non-business stakeholders*

Tier 3 external non-business stakeholders are groups or individuals who are not directly working within the business, but are affected by the decisions or actions of the businesses. Government, members of the public and local communities, and non-profit organizations are elements of non-business stakeholders. The Government expects businesses to pay taxes, be law-abiding and honest in their operations and financial reporting while continuing to employ more people.

Non-profit organizations exist to address public needs and to serve public interests motivated by common public values rather than to earn a commercial profit. All of their revenue is required to be invested in their operational expenses or to further the purposes for which they were legally created. As they are neither government organizations nor commercial entities, some commentators view them as independent institutions able to serve as monitors of public interests and the collective well-being of the society or local community interests. In this latter role, they are often identified with charitable activities, so they seek to obtain contributions from businesses, governments and communities.

Communities value businesses economically and socially as they should provide safe, just, and fairly paid employment, without creating harmful conditions or major hazards for adjacent populations. Local communities want businesses to produce quality products and needed services at reasonable prices, safely and without degrading the environment or destroying natural resources. Local populations believe that companies are themselves part of the local community, using local resources so should equally contribute to the well-being of the community.

### *Legal and regulatory compliance*

Legal compliance plays a predominant role in private sector involvement in DRM. Every business has to act within the applicable legal frameworks. As with any other business activities, DRM initiatives need to comply with the firm's legal responsibilities and obligations such as codes concerning facilities, taxation, investment and the conduct of operations. Failure to adhere to laws or other government regulations can result in restrictive actions or in the official revocation of licenses or permits to operate. Other negative impacts related to reputation and brand image may be placed at risk. The primary motivation for engaging in DRM activities may not necessarily be profit-oriented, but rather related to compulsory legal compliance.

### *Social and environmental responsibility*

Businesses have incorporated social responsibility interests as part of their normal operations since they prosper when society is healthy and resilient. While national and local governments undertake the primary responsibility for protecting society, the private sector plays a crucial role in supporting the community. As businesses make investments in their continued well-being and resilience, they contribute to society's overall resilience. Financial disruption and commercial bankruptcies following a disaster have implications for a firm's employees and business partners that ripple through the community. Business disruptions result in a lack of goods and services when they are badly needed. Irresponsible uses of natural resources, or disregard for ecosystems that local communities depend on, easily cause environmental damage. This lack of foresight invites the likelihood of future disasters occurring. It may be necessary for businesses to participate in DRM and commercial social responsibility to retain its "social license to operate" which is granted only by the society.

Table 3-1 summarizes the preceding discussion. It relates the primary drivers, or motivations, for business engagement in DRM practices. Economic benefits, legal compliance and social or perceived environmental responsibilities of businesses are noted against companies' roles in protecting their interests and commercial assets, assisting the community and supporting the Government in its DRM actions.

Table 3-1 *Summary of the drivers for business engagement in disaster risk management*

**WHY BUSINESSES ENGAGE IN DISASTER RISK MANAGEMENT**

| BUSINESS REASONS | SPECIFIC ACTIONS | ECONOMIC BENEFITS | LEGAL COMPLIANCE | SOCIAL AND ENVIRONMENTAL RESPONSIBILITY |
|---|---|---|---|---|
| PROTECTING BUSINESSES AND THEIR ASSETS | Structural mitigation measures<br>Non-structural mitigation measures<br>Risk-informed investments | • To reduce business liability by avoiding risky investments<br>• To enhance resilience of supply chains<br>• To save assets by investing in risk management rather than bearing losses after a disaster<br>• To assure business continuity<br>• To improve access to business financing | • To comply with building codes<br>• To comply with specific safety regulations<br>• To adhere to industrial or commercial restrictions<br>• To implement mandatory business continuity plans<br>• To fulfil contractual obligations with business partners | • To prevent or reduce the loss of human lives (duty of care with employees)<br>• To reduce job losses<br>• To ensure continued supply of goods and services |
| ASSISTING THE COMMUNITY | Sharing business continuity plans and raising awareness<br>Corporate social responsibility (CSR) after disaster impact; philanthropy<br>Risk-sensitive investments | • To improve sales, profitability and enhanced reputation<br>• To secure or broaden "license to operate" with stability and by avoiding conflict<br>• To gain new business opportunities in DRM contexts or related areas | • To comply with safety regulations<br>• To comply with environmental laws | • To protect human lives, ensure the provision of aid, goods and services<br>• To enhance society's well-being<br>• To mitigate the adverse potential of disaster risks e.g.:<br>- Mitigate environmental damage from unsustainable natural resource consumption<br>- Reduce risks from disasters<br>- Mitigate impacts of climate change<br>- Mitigate industrial and technological disasters<br>- Improve preparedness based on better risk information and risk disclosure<br>- Provide business assets and resources for disaster prevention, preparedness, response and recovery |

| | | | | |
|---|---|---|---|---|
| SUPPORTING THE PUBLIC SECTOR | Public-private partnerships and tri-sector partnerships | • To gain business opportunities in supplying goods and services, and the development of resilient infrastructure<br><br>• To promote mutual accountability<br><br>To improve access to information, knowledge and technology | To fulfil contractual obligations in partnership agreements | • To act as a responsible risk shareholder<br><br>• To practise transparency<br><br>• To provide expertise, goods and services<br><br>• To contribute to emergency use of assets |
| | Information sharing and collaboration | | | |

## 3.2 The economic impacts of disasters on businesses

Businesses are affected both directly and indirectly by disasters. The effects of direct impacts are those that result from the damage or loss of a company's assets. The effects of indirect impacts proceed from external conditions or circumstances resulting from a disaster that influence a company's operations or revenue. Additional macroeconomic effects can be considered separately (Mechler, 2005), but in the present discussion they are considered as a subset of indirect impacts. To properly assess the economic impacts of disasters on businesses, both direct and indirect effects have to be considered (table 3-2).

Table 3-2 *Economic impacts of disasters on businesses*

| Type of impact | Type of loss | Resulting effects | Impacts on businesses |
|---|---|---|---|
| Direct | Assets | Destruction or damage of:<br>• Physical capital<br>• Human capital<br>• Intangible capital | • Loss of assets, P<br>otential decrease in public reputation<br>• Loss of data, institutional knowledge<br>• Loss of human capital<br>• Loss of cash reserves, or increased liabilities to rebuild and recover<br>• Potential bankruptcy |
| Indirect | Income | Destruction or damage to:<br>• Public infrastructure<br>• Suppliers and customers | • Higher costs of production<br>• Loss of suppliers and customers<br>• Business disruption, reduced output or sales<br>• Opportunity costs of recovery expenditure<br>• Employee retention (loss to competitors or relocation)<br>• Loss of profits |

| | | | |
|---|---|---|---|
| Macro-economic | Income and efficiency | • Reduction of country's output (GDP)<br>• Increase in unemployment<br>• Increase in inflation<br>• Market shocks | ● Reduced sales due to<br>*- Lower economic activity*<br>*- Higher unemployment rate (lower disposable income for consumers)*<br>*- Increased prices or reduced demand*<br>● Increased production costs<br>*- Workers demand higher wages to retain purchasing power*<br>*- Increased price of local inputs*<br>● Impact of work-for-food programmes on salaries; other disaster work attracting employees<br>● Charitable distribution of free goods by humanitarian organizations, reducing commercial demand |

The costs of direct impact effects are frequently calculated, but indirect ones are seldom assessed. Some illustrative costs of indirect losses for businesses follow.

• In 1987, a major earthquake followed by mudflows and floods in Ecuador severely affected the oil-exporting industry. The estimated indirect losses were calculated as $165 million. Indirect losses comprised additional costs for investing in an alternate pipeline, higher transportation and shipping costs, the cost of replacement oil export losses and lost profits (ECLAC, 2004).

• In 1994, business disruption losses from the Northridge earthquake in California amounted to $6.5 billion (CACND, 1999).

• In 1995, the indirect economic losses for businesses after the Kobe earthquake were about $100 billion (CACND, 1999).

• The indirect business interruption losses after the attacks on the New York World Trade Center on 11 September 2001 have been estimated at between $12 and $14 billion (Rose and Blomberg, 2010; Rose and others, 2009). This figure resulted from the rapid relocation of most of the businesses within a relatively short time after the disaster. The original estimate of potential indirect losses was $43 billion.

The cost of not investing in disaster risk reduction measures prior to a disaster occurring is clear. However, because of the low probabilities of high consequence disasters occurring, the returns on investment (ROI) of DRR investments are difficult for risk managers to evaluate. Kunreuther (1996) called this phenomenon "the natural disaster syndrome". It is a typical attitude of most homeowners, private businesses, and the public sector, which do not voluntarily adopt cost-effective loss reduction measures before a disaster happens. There are several reasons for this: people underestimate disaster probabilities, human behaviour is influenced by a short time horizon or "myopic behaviour"[8], budgetary constraints, and the adoption of a passive attitude until someone else initiates or demonstrates the benefits of investing in mitigation (Kunreuther, 2006).

[8] *ESCAP, 2013*

Existing literature establishing the actual economic value of implementing DRR measures is, at best, scarce (Gilbet and Kreimer, 1999; Mechler, 2005; DFID, 2005; Suarez and Linnerooth-Bayer, 2011; Vorhies, 2012). Limited research has been done on the costs of disasters triggered by natural hazards and on the costs and benefits of investing in mitigation, but virtually none of this analysis has included business perspectives. An often-quoted assertion is that for "each dollar spent on risk mitigation, seven dollars are saved when a disaster occurs". However, despite its popularity, it remains undocumented and has been shown to be without foundation (Kelman and Shreve, 2013).

The benefits of mitigation are more complex than a simple relationship between resources invested and the value received from averted losses. For these and other reasons, the reality is that strategies and mitigation measures for reducing risk have not been implemented to the extent anticipated in the HFA since 2005. A primary cause in the private sector is that businesses face resource constraints, so there is considerable reluctance to invest in an activity that yields benefits only in the case of an unlikely event. Businesses are much more likely to invest in projects that yield more certain and profitable benefits (ESCAP, 2013a; Suarez and Linnerooth-Bayer, 2011). Given these considerations, risk mitigation investments for more frequent, small-scale disaster events will have a higher cost-benefit ratio. They are more likely to be acceptable to business stakeholders.

## 3.3 The business approach to risk management

With disaster-related losses on the rise and increasingly interconnected economies, business resilience is as much a matter of competitiveness in a complex market environment as it is about survival. Risk assessments are fundamental to any firm's risk management strategy, but they also serve to ensure that businesses remain competitive. Among priority actions in the Sendai Framework, there is a specific encouragement to increase business resilience and protection of livelihoods and productive assets throughout the supply chain to ensure continuous services and integrate disaster risk management into business models and practices.[9]

### 3.3.1 Business risk management actions

Risk management is not a new concept for businesses, especially for large companies that have well-defined risk governance structures supervised by full-time risk managers. The following typical business risk management actions easily accommodate disaster-related risk issues:

- Hazard identification and analysis
- Risk assessment and evaluation
- Determination of risk-bearing capacity
- Identification of risk treatment strategies
- Implementation of risk management strategies
- Monitoring and evaluation of programmes.

Businesses scale and adapt these basic risk management responsibilities to meet their operating conditions. Many companies follow published standards, such as the ISO 31000 Risk Management Standard or other country-specific standards, although other aspects of these actions are discussed in the following comments.

[9] *SFDRR, para. 30 (o).*

### 3.3.2 Risk assessment, and the importance of risk information

After information is obtained about potential hazards and their possible effects on a company, a sound risk assessment provides the foundation for the business to design effective DRM strategies and procedures. However, the lack of data and the inherent uncertainties associated with disasters can make informed decision-making difficult. If a firm decides to obtain better data first-hand, it may become a costly activity.

Improved access to risk information can contribute to more private sector investment in DRM if it can enable businesses to make better-informed decisions about risk (UNISDR, 2013c). This is particularly crucial to ensure the control of and reductions in disaster risk (UNISDR, 2013c). The difficulty in quantifying the economic benefits of managing disaster risks is a related barrier to businesses investing in DRM. Chapter 4 addresses this issue from a public sector viewpoint and suggests how Governments can enhance the availability, accessibility and affordability of risk information.

### 3.3.3 Risk treatment strategies to avoid, accept, mitigate or transfer risk

After an initial risk assessment, and the determination of the amount of risk a company can accept or cover with its own resources, businesses make decisions about their risk treatment strategies. Specifically, they consider options regarding how much risk they choose to avoid, and then otherwise to accept themselves, mitigate or transfer to optimize their operations and advance the achievement of their business objectives (figure 3-3).

Figure 3-3 *Risk treatment strategies*


Businesses can decide to avoid risk by limiting their exposure and making risk-informed investments. Examples of risk avoidance can range from not investing in risky financial products, not investing in disaster-prone areas, or not conducting business with clients with high-risk profiles. The availability of reliable data and relevant risk information is crucial in this process. Risk acceptance is a feature

that distinguishes businesses from Government or non-profit organizations, which concentrate on reducing the negative consequences of risk. As businesses consider risk as the effect of uncertainty on organizational objectives, they have the added option of tolerating or otherwise absorbing losses, as well as profiting from risk. Nonetheless, the level of risk acceptance needs to be determined by the firm's resources and capabilities, or "risk appetite", and not assumed because of the lack of knowledge. Businesses' risk appetites should be limited by law to avoid moral hazards. When companies accept a level of risk, they need to budget the cost into their operations and finance it should losses occur.

If businesses decide to mitigate part of the risk they have identified, they can implement structural and non-structural mitigation measures. Structural measures refer to "any physical construction or application of engineering techniques to achieve hazard resistance and resilience in structures or systems" (UNISDR, 2009a). Examples of this are retrofitting buildings, acquiring special equipment, or employing other hazard-resistant techniques. Non-structural mitigation measures include protective company policies, raising awareness, training and education (UNISDR, 2009a). These may entail emergency management plans, business continuity plans or risk communication strategies and other standard operating procedures. As with other risk management options, mitigation measures should ideally be conducted only after undertaking a sound cost-benefit analysis (CBA) to make the most economical use of available resources (box 3-2).

Businesses also can decide to transfer a portion of remaining risk to insurance companies or financial markets through insurance and other risk financing instruments. This topic is discussed further in section 3.7 of the present chapter.

Box 3-2 *Cost-benefit analysis of risk treatment strategies*

Cost-benefit analysis (CBA) is a practical tool to assess DRM-related investment decision-making during the design of the risk treatment strategy. Mechler (2005) proposes two uses of CBA for implementing mitigation. Forward-looking CBA combines data on potential hazards, actual vulnerability and risk reduction. It is rigorous but requires substantial data and time to complete. Backward-looking CBA is based on the analysis of previous disaster impacts and resulting damages. It is more pragmatic and easier to do, but it is less rigorous in its analysis.

The ideal option would be to use forward-looking CBA, but the required resources make it problematic for most companies, and especially for SMEs. Backward-looking CBA can be beneficial for businesses if the required historical data is available at reasonable cost. Governments should consider providing support and necessary information to encourage businesses and especially SMEs to analyse disaster risk better.

For example, The United States Federal Emergency Management Agency (FEMA, 2007) has provided guidance to SMEs for conducting a simpler qualitative CBA instead. The method is called "*simple listing*" and consists of three tasks:

- List identified actions for each hazard
- Identify their benefits and costs
- Assign priorities and implement the actions with available resources.

The method is suggested for circumstances when it is not feasible to conduct a quantitative review of costs and benefits although each method has its distinctive advantages or limitations for prioritizing risk treatment options.

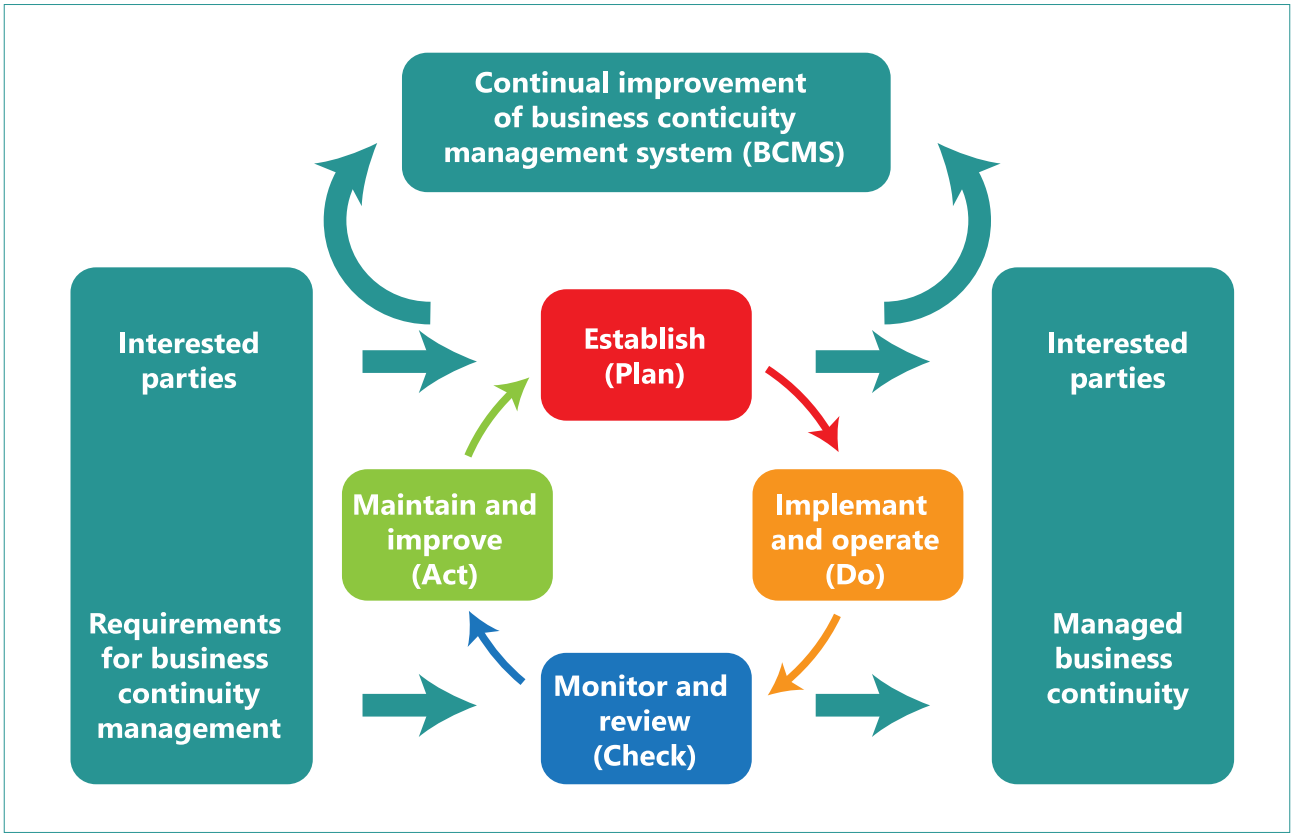
## 3.4 Business continuity management and planning

Business continuity management (BCM) is probably the most essential process of any business risk management strategy. It provides the foundation for an organization to minimize the negative impacts of catastrophic events or negative shocks on their operations. It guides continued operations during emergencies and is essential for restoring business activities afterward.

### 3.4.1 What is business continuity management?

One of the most accepted definitions of business continuity management is that it is "an organization-wide discipline and a complete set of processes that identifies potential impacts which threaten an organization [and] it provides a capability for an effective response that safeguards the interests of its major stakeholders and reputation" (Goh, 2009). The main objectives of ISO 22301 Societal security – Business continuity management systems – Requirements are: supporting the holistic management in the organization; identifying potential threats to operations of the organization; and coping with business disruption by implementing business continuity plans (BCP). The process of implementing the standard is based on the "Plan-Do-Check-Act" cycle, illustrated in figure 3-4.

Figure 3-4 *Business continuity management realized through the "Plan-Do-Check-Act" cycle*




***Source:*** *ISO (2012).*

The business continuity plan is the primary instrument of BCM. It is a set of "prior arrangements and procedures that enable an organization to respond to an event in such a manner that critical business functions can continue within planned levels of disruption" (Goh, 2009). The product of business continuity planning is a BCP, sometimes called an emergency action plan because of the circumstances when it is used. The plan contains clearly defined procedures and documented

information to be used when the plan is implemented. The procedures guide an organization's actions to respond, recover, resume and restore conditions for previously defined levels of operation following disruption.[10] Three case studies of BCPs are presented in annex I.

### 3.4.2 Benefits of implementing business continuity management

In the event of a disaster, having a BCP in place is critical to minimize loss and damage. Its use protects the lives of employees and retains essential linkages with both clients and suppliers. It also minimizes resulting economic impacts on the business by enabling it to respond to crises more effectively. BCPs ensure the continuity of business operations under demanding circumstances. This is essential for maintaining a competitive edge at all times, since disasters can bankrupt a business not only because of loss or damaged assets but, more importantly, by income lost through disrupted operations. BCP can also help to maintain a firm's reputation by sustaining contractual requirements with clients and partners during difficult times.

BCPs can provide a substantial reduction in recovery costs, both in terms of time and money. Overall, they create improvements in organizational culture and management abilities, two features that are necessary for appropriate and timely response to any crisis. In some cases by anticipation, they can contribute to rapid and, therefore, more effective compliance with legal requirements.[11]

In summary, the BCP identifies potential impacts of the crisis on each business process, estimating an ideal recovery time for each one. By having a comprehensive and current BCP in place enables a business to prioritize its response and recovery needs in a way that balances the human and the financial aspects of the emergency to minimize losses and costs.

### 3.4.3 Business continuity challenges for small and medium enterprises

Business continuity planning can be challenging for SMEs for several reasons:

- Inadequate access to risk information
- Lack of sufficient long-term business perspective
- Absence of continuity planning and management in their organizational cultures
- Lack of understanding about BCP processes, such as confusion with incident management or disaster recovery plans for information systems
- Limited resources for the development, consulting and training required to install adequate BCP capabilities.

SMEs that are typically most exposed to disaster risks are often found to be the least capable of developing and adopting BCP. Lack of awareness among the management team is another key challenge despite a general recognition that BCP can improve current competitiveness and long-term resilience.

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[10] *Typically, a BCP covers resources, services and activities required to ensure the continuity of critical business functions.*

[11] *The United Kingdom is an example of a country that has a national regulatory framework for BCP. Depending on national circumstances, BCP can be used as a restrictive, normative or regulatory measure by countries, but this is more likely to be the case in advanced economies.*

To overcome these obstacles, Governments can provide appropriate incentives and support to businesses, and especially to SMEs. Public policy instruments can be instrumental in this respect, such as by the foresighted use of taxation, subsidies and training initiatives. Working through business groups and chambers of commerce to build the capacity of SMEs to develop their own business continuity strategies has proven to be effective as the example of the Singapore Business Federation shows (case study 3, in annex I). Smaller businesses can benefit from other professional resources to develop their business continuity capacities, such as the Guidebook on BCP for SMEs, published by APEC in 2013 in collaboration with ADRC. [12]

### 3.4.4 Industrial parks and area-wide business continuity

Two major disasters struck the Asia-Pacific region in 2011 with serious consequences for businesses: the Great East Japan earthquake and floods in Thailand. Both events seriously affected business operations distant from the places of primary physical impacts, to a significant extent because of concentrated industrial sites where many businesses associated with the same industries and their supply chains were clustered. These disasters affected locations where automotive production is concentrated, severely disrupting the procurement and distribution supply chains for vehicle components on a worldwide scale (Ando and Kimura, 2012). At the time, Thailand was producing 43 per cent of the world's computer hard disk drives (Development Bank of Japan, 2012). The 2011 floods inundated the locally concentrated factories that produce them and seriously affected the more widely dispersed suppliers of critical components. These combined effects led to worldwide price increases and product shortages throughout the industry.

These events underline the wide-ranging impacts that can result from the disruption of commercial activities concentrated in a single location. The consequences were felt by national, regional and global economies as many partner and subsidiary enterprises were affected because of the highly interconnected nature of global businesses and their complex supply chains (Komori and others, 2012). Moreover, these disasters emphasized a lack of integration and the absence of any substantive coordination among the various commercial continuity plans or management systems that may have been developed by the businesses affected. This was the case even where the enterprises concerned maintained close business relationships and shared commercial interests (Baba and others, 2013).

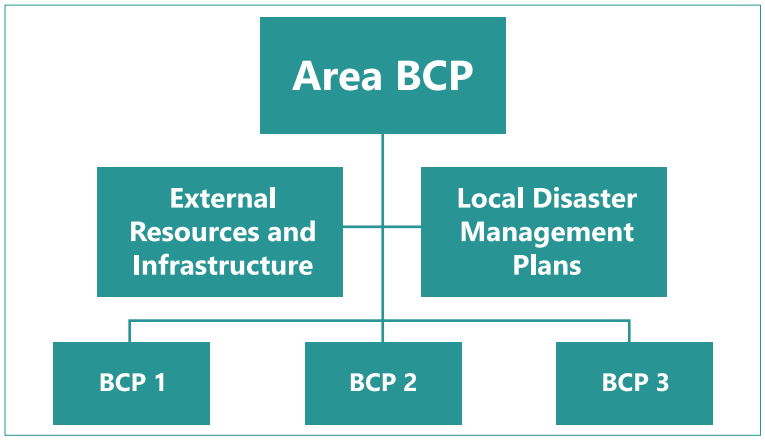
The expensive consequences of these disasters heightened awareness of the need to integrate and link the DRM capabilities of different organizations operating in related businesses. Industry coordinated service standards can help to safeguard extensive global value chains, even though no single authority controls them. This assurance would be particularly relevant for contracted enterprises that provide emergency services during crises. They may have multiple contracts in a small area, and can become overextended or overwhelmed when an area-wide disaster occurs.

Area-wide business continuity planning in industrial areas has been proposed to encourage more integrated DRM planning between businesses (Baba and others, 2013). "Area BCPs" typically reflect coordinated damage mitigation measures and recovery actions among stakeholders, including those of companies, local community members, government administrations and infrastructure operators. They all share a common interest in continuing their activities in locations where businesses are clustered, as in many Asia-Pacific industrial parks (box 3-3).

[12] *The guidebook is available at http://publications.apec.org/publication-detail.php?pub_id=1449*

Area BCPs are intended to advance more effective and comprehensive business continuity in critical areas during crises. By understanding the risks and hazard impacts that affect a particular geographical area generally, and being attentive to the critical systems within areas of concentrated commercial activity more specifically, common risk management strategies can be formulated.

Figure 3-5 *Basic structure of an area business continuity plan*




***Source:*** *Adapted from Baba and others (2013).*

Area BCPs allow for the integration of external resources and infrastructure services (e.g. utilities such as water, energy, transportation and communications) independent of individual business operations but required for the area's continued operations. The approach requires a single all-encompassing, area-wide strategy that still needs to incorporate local disaster management plans and individual organization's BCPs to address other contingent responsibilities drawn from the public and private sectors, respectively (JICA, 2013).

Such an arrangement is illustrated in figure 3-5. Its implementation requires dialogue and coordination among many stakeholders, but to succeed, there is a predominant need for the collective understanding of DRM among the intended beneficiaries.

Box 3-3 *JICA's Area Business Continuity Plan initiative in industrial areas in ASEAN*

JICA has disseminated the Area BCP initiative in collaboration with the ASEAN Coordination Centre for Humanitarian Assistance on Disaster Management (AHA Centre). The study, Natural Disaster Risk Assessment and Area Business Continuity Plan Formulation for Industrial Agglomerated Areas in the ASEAN Region, was begun in February 2013. JICA described the approach as a "*scalable cross-sector coordination framework of disaster management for business continuity*" (JICA, 2013).

Under the project, regional BCPs will be prepared for selected industrial agglomerated areas in Indonesia, the Philippines and Viet Nam, helping stakeholders in each of the selected areas to agree upon a coherent and integrated framework of mitigation measures and recovery activities. Following the application of this area-wide resilience approach in each of the locations, JICA will aim to engage the private sector to disseminate the concept of Area BCPs across more countries in ASEAN and beyond.

JICA believes that the Area BCP approach provides benefits to encourage organizations to improve their own BCPs. They can stimulate cooperation and communication among local enterprises and members of supply chains, helping them to integrate the DRM planning efforts of local stakeholders.

***Source:*** *JICA (2013).*

## **3.5** Disaster risk financing and transfer instruments for businesses

Financial risk sharing mechanisms help in mitigating the financial and economic impacts that may be caused by disasters by activating financial flows during or after an event. If they are used to their full potential by the issuing banks and insurance companies, these instruments also can be incentives to encourage investments in risk mitigation measures before disasters occur. They include a variety of instruments broadly categorized into risk financing and risk transfer.

### 3.5.1 Risk financing

Disaster risk financing is associated with the acceptance of a degree of risk combined with the adoption of a financing strategy to ensure that appropriate funds are available to meet resulting requirements in the event of a disaster (OECD, 2012). Businesses can make necessary arrangements either internally, through the accumulation of contingent reserve funds, or externally, from financial markets through previously arranged credit facilities and other financial instruments. The banking sector, capital markets and international lending institutions are the primary sources of risk financing. The main risk financing tools available to businesses include cash reserves, contingency capital, financial derivatives, catastrophe bonds, loans and specific types of post-disaster financial aid. At the core of risk management, risk financing addresses the central issue of aligning a company's willingness to take risks with its ability to do so. How well an organization manages its "risk capital", its cash and contingent reserves, is a good indicator of its competitiveness and likely long-term success.[13]

### 3.5.2 Risk transfer

Disaster risk transfer involves shifting the financial responsibility of risks to other entities, which, in exchange for a premium payment based on probabilities, provides compensation when a disaster occurs. This contingent payment ensures that any financing gap that might result is partially or fully covered (OECD, 2012). Insurance and reinsurance companies usually bear these risks that they pool and diversify, further distributing the risk to third parties. Capital markets provide an alternative source in catastrophe bonds (CAT bonds) which serve as both risk transfer and risk financing tools used for extreme hazard events. In some occasions, such as large disasters that cause serious market disruptions, Governments can intervene through urgent risk transfer actions either directly or by supporting existing insurance mechanisms.

The Sendai Framework highlights the importance of risk transfer and calls for the promotion of the development and strengthening of disaster risk transfer and sharing mechanisms and instruments. This can be done in close cooperation with partners in the international community, businesses, international financial institutions and other relevant stakeholders.[14]

There are different types of insurance that can be applied to risk management depending on the conditions or relative amounts of their payouts. In principle, cost-effective investments for structural disaster risk mitigation are preferable to insurance, since they increase the value of assets while making businesses more resilient to disasters. Companies may consider a strategy to invest in risk

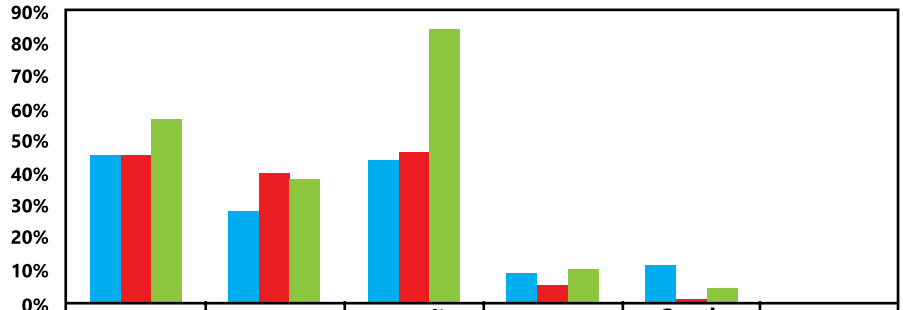
[13] *Harvard University, http://rmas.fad.harvard.edu/faq/what-risk-financing*
[14] *SFDRR, para. 31 (b).*

transfer instruments to cover the remaining, or residual, risk only after cost-effective investments have been made to reduce potential losses. This is not a comprehensive approach since it considers insurance as a measure only of sharing risk, overlooking the benefit it provides in liquidity following a disaster. A rapid infusion of funds can speed the recovery of operations to save lives and restore livelihoods. Well-designed insurance programmes also provide incentives for structural mitigation and other measures that can reduce disaster risks and their adverse consequences (Suarez and Linnerooth, 2011). A practical example of microinsurance being used in the DRM activities of the NGO, Mercy Corps in Indonesia, is presented in annex II.

### 3.5.3 The challenge of low insurance penetration

The adoption of insurance in the Asia-Pacific region is extremely low. Between 1980 and 2012, insured losses were only 9 per cent of total losses. This compares to 45 per cent of losses in the United States being insured, 44 per cent of losses incurred in Australia and Oceania, and 28 per cent of European losses (figure 3-6).

Figure 3-6 *Insured losses as a percentage of total disaster losses, 1980-2014*




| | North America | Europe | Australia/ Oceania | Asia | South America | Africa |
|---|---|---|---|---|---|---|
| Insured losses (As % of overall losses) 1980-2012 | 45% | 28% | 44% | 9% | 11% | 0% |
| Insured losses (As % of overall losses) 2013 | 45% | 40% | 46% | 5% | 1% | 0% |
| Insured losses (As % of overall losses) 2014 | 56% | 37% | 85% | 10% | 4% | 0% |

***Source:*** *MunichRe NATCAT Service (accessed 15 February 2015).*

Insurance markets in the Asia-Pacific region are typically characterized by low insurance penetration rates.[15] Across Asia, the penetration of non-life insurance is lower than 2 per cent. This is markedly lower than the global percentage of penetration, which is just under 3 per cent (World Bank, 2012).[16] As illustrated in table 3-3, insurance penetration rates for countries in the Asia-Pacific region are significantly lower than levels for developed markets in North America and Europe and other advanced economies. The majority of ASEAN Member States rank below the Asia regional average for non-life insurance penetration of 1.55 per cent of GDP (World Bank, 2012).

[15] *Insurance penetration is understood as the ratio of premiums underwritten in a particular year and country, related to the GDP of the country in that year.*

[16] *Non-life insurance refers to insurance concerning the protection of policyholders in the event of loss or damage resulting from a specific risk. Common types of non-life insurance cover include home, motor, health, travel, business, agricultural, fire, aviation and engineering insurance (Insurance Council of Australia, 2015).*

Table 3-3 *Non-life insurance penetration for selected countries (2011)*

| Global Rank | Country | Value |
|---|---|---|
| 1 | Netherlands | 9.49 |
| 2 | Republic of Korea | 4.59 |
| 3 | United Kingdom | 4.53 |
| 4 | Switzerland | 4.48 |
| 5 | United States | 4.42 |
| 13 | Singapore | 3.15 |
| 14 | Australia | 2.95 |
| 24 | Japan | 2.23 |
| 33 | Malaysia | 1.78 |
| 35 | Thailand | 1.74 |
| 45 | China | 1.20 |
| 49 | Viet Nam | 0.84 |
| 52 | India | 0.73 |
| 54 | Indonesia | 0.55 |
| 56 | Philippines | 0.46 |
| 59 | Pakistan | 0.30 |
| 60 | Bangladesh | 0.23 |

***Source:*** *Adapted from World Economic Forum (2012).*

Nonetheless, some of South-East Asia's growing economies have seen insurance penetration rates increase markedly in recent years. Across a sample of ASEAN states (Indonesia, Malaysia, the Philippines, Singapore, Thailand and Viet Nam) the number of premiums for non-life insurance policies grew by 7.1 per cent in 2011 (World Bank, 2012). Thailand's insurance penetration rate increased from 2.6 per cent in 2000 to 4.2 per cent in 2009 (Office of Insurance Commission, 2010). Furthermore, the country's non-life insurance market grew in 2011 by 15 per cent over the previous year. In China, the number of non-life insurance premiums rose by 20 per cent in 2011 (Eder and Grimm, 2012).

In the majority of ASEAN countries, some non-life insurance such as standard homeowner policies does not cover catastrophic events. Estimates indicate that less than 10 per cent of property damage policies cover "catastrophic perils", although policies can be extended to cover such eventualities with the payment of an additional premium.

Disaster micro-insurance is a type of insurance specific to disaster risk. It is a form of non-life insurance designed specifically to cover the disaster-related property, financial and livelihood losses of low-income populations. This innovative form of insurance remains in its infancy in the Asia-Pacific region but is gaining interest in South-East Asia. According to a World Bank survey (2012), the interest in micro-insurance was described as being strong in the Philippines, and moderate in Indonesia. Public interest was considered more limited in Thailand and Viet Nam and less evident elsewhere in South-East Asia.

### 3.5.4 Challenges in insurance utilization

Risk financing and transfer instruments are useful mechanisms to manage residual risk after avoidance and structural risk mitigation strategies have been considered. However, risk financing and transfer

tools "may or may not reduce risk" (Warner and others, 2009). There is a frequent belief among stakeholders that insurance is an assured means to address risk, but it can fail to reduce risk or further adaptation unless it is implemented properly. It requires a functional financial market and needs to be used in combination with other risk mitigation measures to demonstrate significant benefits. This has important implications for how businesses and Governments approach insurance and other risk transfer and financing mechanisms.

The effective use of risk financing and transfer mechanisms depends on a thorough understanding of a company's risk exposure and a rigorous assessment of the firm's internal financial capacity to address the risk strategically. The extent to which a business may be unable to absorb and recover from losses associated with a specific level of disaster risk is commonly referred to as a resource or financial "gap". If risk financing, transfer instruments or other DRM measures are absent, this gap becomes a financial vulnerability (OECD, 2012). Risk financing and transfer instruments are most effective when they are used in combination with other forms of mitigation and risk reduction.

Properly functioning markets are a prerequisite for risk financing and transfer instruments to be effective. OECD (2012) identified the most common market failures that prevent benefits being realized from risk transfer mechanisms:

- The uninsurable nature of specific risks within reasonable economic terms because of their frequency, severity, or high correlation with multiple hazards
- The unavailability of appropriate information within financial markets to formulate products that could attract sufficient market demand
- Excessive pricing, incomplete or interrupted coverage, or inefficient compensation arrangements that are not compatible with the underlying risks

Governments can play a crucial role in public-private partnerships when market failures prevent businesses from using or benefiting from risk transfer and financing instruments. These possibilities are discussed further in chapter 4.

## **3.6** Industry standards for risk management

Industry standards are useful to guide business efforts in DRM. They associate companies' performance in applying risk management practices with globally recognized best practices. This attracts official and public recognition that can influence a company's stakeholders. Different standards have been developed within industries and by some organizations such as the International Organization for Standardization (ISO), and national standards organizations in countries.

Simply stated, industry standards are established procedures or material qualities, agreed by a group of recognized experts, which provide an optimized systematic approach for a specific process or its products. [17]

[17] *The ISO definition of standards is "A document, established by consensus and approved by a recognized body that provides, for common and repeated use, rules, guidelines or characteristics for activities or their results, aimed at the achievement of the optimum degree of order in a given context" (ISO/IEC Guide 2, 1996).*

Standards assure minimum levels of quality, safety, reliability, efficiency and redundancy. Their use and implementation are usually voluntary; organizations can choose to implement all or part of a published standard, or simply use them as indicators of best practice.[18] Standards can help businesses maintain competitiveness, performance and resilience in the event of a disaster. Standards apply in terms of physical capital and assets (e.g. building and construction standards), and regarding management (e.g. risk management standards).

In this section, standards are discussed in three contexts according to whether the scope of their application is national, regional or international.

### 3.6.1 National standards

Most countries have an official standards organization that is responsible for issuing national or commercial standards. They also monitor and support the harmonization and implementation of international standards.

It is beyond the scope of the present discussion to analyse the different national standards related to DRR and DRM across the Asia-Pacific region. However, it is important to note that while the adoption of international standards is voluntary, the implementation of national standards and codes may be required by law in specific cases. National standards and codes provide Governments with a means to ensure that businesses meet certain minimum standards of resilience to prevent losses in the event of a disaster. The standards either set mandatory requirements or can influence policies, incentive schemes or commonly accepted practices.

An example of using standards as an incentive would be for governments to require industry standards certification to qualify for any public procurement processes. Another example is the use of building codes. In most countries, building plans have to meet design and construction criteria before the plans can be approved, and a building permit is issued. These criteria vary widely, but a more serious problem is the widespread knowledge that building and construction standards are flouted or ignored. There is often lax enforcement of the regulations or complicit corruption between businesses and government officials. Public knowledge of regulatory and legal standards can encourage better accountability among the different private and public parties responsible respectively for designing and authorizing safe construction.

### 3.6.2 Regional standards

In the Asia-Pacific region, there are two regional standards organizations, the Pacific Area Standards Congress (PASC) and the ASEAN Consultative Committee for Standards and Quality (ACCSQ). Neither organization develops specific industry standards, but both act as forums to discuss international standards within a regional context. The PASC makes recommendations to the ISO while the ACCSQ aims to harmonize national standards and establish the mutual recognition of them among ASEAN members. With the introduction of the ASEAN Economic Community in 2015, ACCSQ may expand its role in setting standards across the member countries.

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[18] *Mark Siegel, "Standards to Enhance Organizational Resilience: Security, Preparedness, and Continuity Management". http://disaster-resource.com/newsletter/subpages/v256/meettheexperts.htm*

### 3.6.3 International standards

The most relevant international standards organization for DRM is ISO because of the many relevant standards it has published, and its widespread global recognition. It is a voluntary membership organization, composed of 163 national standards organizations. Its structure guarantees that the best practices worldwide have been incorporated into more than 19,500 standards it has published.[19] For example, the eventual ISO 31010 Risk Assessment Techniques standard was originally based on concepts in the joint Australian and New Zealand national standard for risk management, AS/NZS 4360:2004.

Two types of ISO standards are relevant for DRM. One addresses operational procedures (e.g. ISO 22301, ISO 31000, etc.), and the other provides technical specifications for quality and resilience measures of physical materials (e.g. concrete properties, ductility of iron pipes, etc.). Table 3-4 lists the primary international standards related to disaster risk management procedures.

Table 3-4 *ISO standards related to disaster and risk management*

| ISO number | Name of published standards |
|---|---|
| ISO 22300 | Business continuity management systems – Terminology |
| ISO 22301 | Business continuity management systems – Requirements |
| ISO 22313 | Business continuity management systems – Guidance |
| ISO 22315 | Mass evacuation – Guidelines for planning |
| ISO 22320 | Emergency management – Requirement for incident response |
| ISO 22322 | Emergency management – Public warning |
| ISO/PAS 22399 | Guideline for incident preparedness and operational continuity management |
| ISO/IEC 24762 | Guidelines for ICT technology disaster recovery services |
| ISO/IEC 27031 | Guidelines for ICT readiness for business continuity |
| ISO 28000 | Specification for security management systems for the supply chain |
| ISO 28841 | Guidelines for simplified seismic assessment and rehabilitation of concrete buildings |
| ISO 28842 | Guidelines for simplified design of reinforced concrete bridges |
| ISO 31000 | Risk management – Principles and guidelines on implementation |
| ISO 31010 | Risk management – Risk assessment techniques |
| ISO Guide 73 | Risk Management – Vocabulary (a guide, not a standard) |

The publication of an ISO standard signifies the agreement and adoption by ISO national member institutions of standardized operating procedures or material specifications that have been developed by international technical specialists. The standards represent agreed professional knowledge and authoritative concurrence of recognized quality practice and technical integrity that benefit businesses, public organizations and society. By adhering to systematic best practice, organizations can manage risk and uncertainty in an informed and proactive manner, or recover more effectively from unavoidable disruptions and losses. International standards also can guide or augment national standards in countries with more limited capacities as demonstrated in box 3-4.

[19] *ISO, http://www.iso.org/iso/home/about.htm. (Accessed 15 January 2014).*

Box 3-4 *International standards can benefit less developed countries*

The Business Continuity Institute (BCI) published a survey in 2012 on the adoption of ISO 22301 Business Continuity Management standard.

The main findings regarding the businesses' views on the standard were:

- The main advantage of the ISO standard for 85 per cent of respondents was in providing a common language for themselves and for working globally among customers and suppliers.
- Respondents based in Europe, Asia, the Middle East and Africa were positive about ISO standards in terms of brand benefits; they were likely to adopt them. North American respondents expressed less of an inclination to do so. Two thirds of respondents expected to obtain ISO 22301 certification within three years.

To comply, certify or align? The main findings on the adoption of international standards for DRM:

- Among the BCI members responding 57 per cent have developed their own BCM model aligned to international standards.
- Among the respondents, 17 per cent of them were ISO-compliant.
- Thirteen per cent of the companies were ISO-certified.

***Source:*** *BCI (2012).*

The ISO 28841 Guidelines for simplified seismic assessment and rehabilitation of concrete buildings has been developed specifically for countries that do not have national building codes in force. The development of building codes requires extensive data about the physical, meteorological, geological, seismic and socio-economic or demographic characteristics of a country. This data is costly to obtain, and many countries are limited in their human, technical and economic resources to gather it or use the required information.

This international standard provides sufficient information to allow designers to use it for analysing simple structures without supplementary external data and without the use of sophisticated calculation tools. It can be used before an earthquake occurs to assess the vulnerability of buildings, as well as after a disaster to determine the type of repairs required to ensure a safe structure.

***Source:*** *ISO website, http://www.iso.org.*

Because of the complexity and relatively demanding resource requirements to obtain certification, mostly large organizations officially adopt international standards. However, SMEs also can obtain some of the following benefits by adopting standards: [20]

- Adopting business practices of excellence used by large corporations
- Increasing the efficiency of management processes
- Enhancing credibility with big customers
- Developing new business opportunities
- Increasing reputation, or expanding brand recognition
- Adopting a common professional language across a global industry

[20] *ISO, "10 good things for SMEs" http://www.iso.org/iso/10goodthings.pdf*

Obtaining an ISO certification can be a costly process in terms of human and economic resources. SMEs can pursue simplified adherence to standards by focusing only on essential functions. Companies can calculate their needs and choose to become ISO-compliant, ISO-aligned or ISO-certified representing escalating levels of adherence to standards. Box 3-4 provides a glimpse of the value attributed to certification for a particular standard.

The extent of certification for DRM standards remains low compared to businesses certified for other standards such as ISO 9001 Quality, or ISO 14001 Environmental sustainability. This may reflect a contractual expectation that ISO 9001 and ISO 14001 standards are required since they reflect a company's commercial reputation. However, since its publication in 2012, countries have used ISO 22301 for business continuity requirements to replace previously existing national standards. Similarly, the ISO 31000 risk management implementation framework has been adopted in Asia and the Pacific for DRM by the Governments of India, Japan, Malaysia, New Zealand, the Russian Federation, Singapore, Thailand and Turkey since 2013.[21]

Regardless of their scale or derivation, accepted industry standards have the additional potential to increase the resilience of business partners, thereby minimizing a firm's own risk. Suppliers located in disaster-prone areas facing periodic operational risks should be expected to comply with standards specified in their contracts. This type of commercial practice would ensure more resilient supply chains. Banks and insurers can encourage certification and the value of standards to reduce the risk profiles of their clients by offering discounted interest rates and premiums.

### 3.6.4 Standards in the tourism sector

With the economic importance of tourism worldwide, any disruption to arrivals or interrupted revenue can seriously undermine business competitiveness and affect development in the countries concerned. Besides threatening the well-being of tourists, a single disaster can cause widespread damage and economic disruption, affecting private and public investments in tourism destinations, and tarnish the country's image and reputation. The consequences extend throughout the business environment in often localized economies, affecting local employment, fragile environments and the needs of surrounding communities (GIZ/GIDRM, UNISDR and PATA, 2014).

The United Nations Global Assessment Report 2013 (UNISDR, 2013b) reported that the hotel industry is usually able to cope with low-impact hazard events, but that more severe disasters are often poorly managed. Many hotels do not have the systems in place to reduce their disaster risks, nor are they well prepared when threatening conditions occur. The assessment recommended certification programmes and voluntary rating systems as effective means to advance disaster risk management (UNSIDR, 2013b).

The Tsunami Ready programme of the Bali Hotels Association and the Indonesian Ministry of Tourism is one example of a partnership to adopt industry standards for DRM. The Hotel Resilient initiative supported by the German international development assistance agency, GIZ, was launched within the framework of the Global Initiative on Disaster Risk Management (GIDRM), UNISDR and the Pacific-Asia Travel Association (PATA). These examples involving the private sector suggest an increasing market value of sound DRM practices. They can gain customers' trust and interest while increasing business resilience by demonstrating professional standards (box 3-5).

[21] *http://g31000.org/about-iso-31000/*

Box 3-5 *Hotel Resilient Initiative*

Tourism is one of the fastest-growing economic sectors in the Asia-Pacific region but it is also one of the most exposed to disruption. In many countries, the tourism industry is important for national development and makes a significant contribution to local and national economies.

The Hotel Resilient Initiative of GIZ aims to develop internationally recognized standards for hotels and resorts to improve the management of disaster and climate risks, and by doing so, to strengthen the resilience of the tourism sector in the Asia-Pacific region. With support from its partners GIDRM, UNISDR and PATA, the GIZ initiative will enable hotel owners to reduce the degree to which their businesses, as well as tourists and neighbouring communities, are exposed to risks associated with natural hazards and human behaviour. By adhering to these standards, tourist facilities and destinations can demonstrate their resilience to potential customers and financial supporters.

The initiative builds on strong partnerships with government representatives from government agencies for tourism and disaster risk management, and private sector participation from hotel associations, resorts and tour operators to benefit civil society in Indonesia, the Maldives, Myanmar, the Philippines and Thailand.

***Source:*** *GIZ/GIDRM, UNISDR and PATA (2014).*

## **3.7** Global value chains

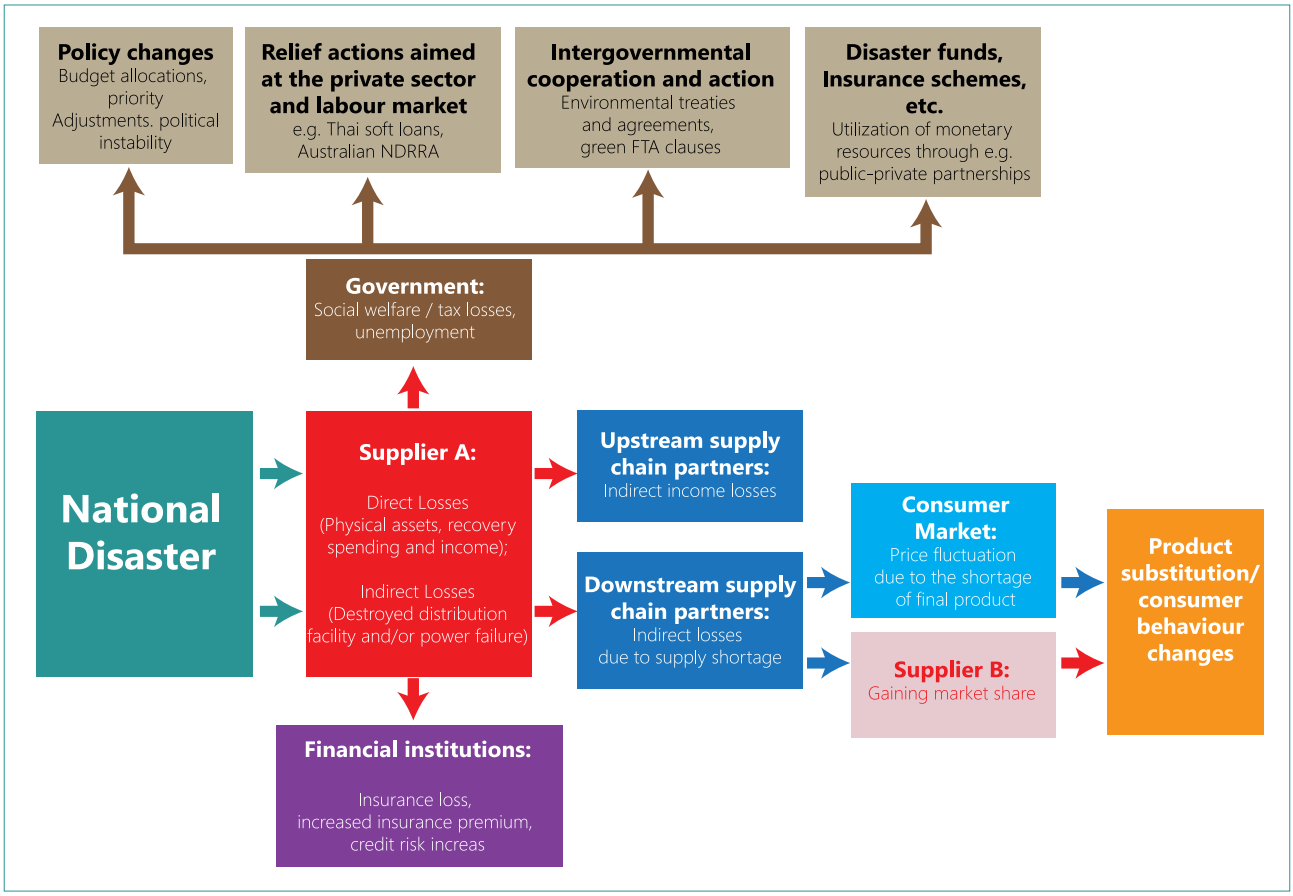
Global value chains (GVCs) are production and supply networks consisting of multiple companies operating in various locations across borders. They are increasingly becoming a vital part of business activities in the region. This creates new challenges for businesses seeking more engagement in risk management, including disaster risk management activities. Global value chains are exposed to various types and different degrees of disaster risks. Whereas these risks and their direct consequences are borne by the individual companies, disasters frequently have disrupted entire GVCs because of their cascading or sequential effects.

The impact of natural hazards and resulting disasters on a supply chain is illustrated in figure 3-7. When a disaster occurs, supplier A suffers from direct losses incurred by the destruction of physical assets, recovery expenditures and lost income. If the disaster severely affects public infrastructure, then supplier A also is likely to suffer indirect losses because of either damaged distribution facilities or disrupted power supplies.

For supplier A, either direct damage or indirect losses can result in the suspension of production and distribution, with subsequent weak financial conditions and possible reductions in the workforce. The indirect losses may cause an additional burden for the Government in diminished tax revenues. Financial institutions and insurance companies can be affected by an increase in the number of non-performing loans and the possibility of a surge of expected compensation to offset private losses from the disaster.

The halt in supplier A's production or damage to distribution facilities can cause indirect losses to both upstream and downstream supply chain partners, or respectively, to suppliers and clients. These negative impacts can accumulate, and their effects will be transmitted throughout the entire supply

Figure 3-7 *The impacts of disasters on supply chains*




***Source:*** *ESCAP (2013a).*

chain. This will affect the firms involved regardless of their geographical locations. At the same time, consumer markets may experience price fluctuations as interrupted production or distribution creates product (or service) shortages. Disasters can disrupt different aspects of supply chains resulting in different types of delays, missed deliveries, component shortages and potentially contractual of financial defaults. The failure of communications systems, damage or closure of logistics facilities, destroyed equipment and lost data can impede the functioning of the synchronized systems that comprise any supply chain.

While the incapacitation of one supplier may provide an opportunity for another more resilient one, even with a shift in specific market conditions, the accumulated effects of delays and disruptions will still be felt in the long term. Regardless of temporary product substitutions or price fluctuations for a temporary period, the net consequence of disrupted supply chains will be costly. Recovering from changes in demand, recovering lost customers and regaining market share will all require extended time and can prove to be difficult.

More severe and increasingly frequent disasters make GVCs more vulnerable to disruptions with escalating consequences (Wagner and others, 2010). Against the definitive measure of a fully functioning GVC, the severity of a disaster needs to be assessed in terms of the severity of the disruption caused to the GVC. Disruptions refer to anything that interrupts or otherwise impedes the process of making, delivering or servicing the multiple products that together comprise a GVC. Disruptions can refer to a variety of conditions, such as the partial list indicated in table 3-5.

Table 3-5 *Common disruptions to global value chains*

| TYPE of DISRUPTION | DESCRIPTION |
|---|---|
| **Demand** | Disruptive changes in the estimated demand for the outputs of the GVC, however caused, e.g. by economic recession, etc. |
| **Upstream supply** | Disruptions in acquiring essential inputs for the GVC, such as commodities, raw materials or labour |
| **Process** | Disruptions in the value-adding and managerial activities that limit capacities to produce or deliver goods of specific quality or quantity, or within a desired time |
| **Control** | Disruptions in the creation or enforcement of procedures, rules and systems by which a GVC functions, e.g. management of inventories, multiple-stockpiling systems, transportation of perishables, etc. |
| **Financing** | Disruptions in access to reliable and timely financing, e.g. through stock and bond markets, which limit the GVCs' capacities to operate |
| **Inventory** | Disruptions in maintaining, accessing or using an inventory of inputs or end products |
| **Information** | Disruptions on collecting, accessing and transmitting strategic, operational and financial information, e.g. for corporate decision-making or GVC operational requirements |

Any of these disruptions, occurring singly or in combination, can have severe consequences for the functioning of the entire GVC. Renesas is a multinational company producing microcontrollers for the automobile industry that was seriously affected by the GEJ earthquake in 2011. It incurred losses of almost $615 million because of disruptions to its production and electricity supply (ESCAP, 2013a). These interruptions had serious implications for several global automobile manufacturers including General Motors, Honda, Mazda, Nissan and Toyota. They all had to halt their assembly lines because of shortages of essential components that were supplied only by Renesas.

There are various strategies to strengthen the resilience of GVCs. They can be employed individually or combined to enable greater flexibility for the private sector and Government to tailor their respective disaster risk management programmes. Some of these strategies and their actions are indicated in table 3-6.

Table 3-6 *Strategies for more resilient global value chains*

| STRATEGY | ACTIONS |
|---|---|
| **Avoidance and minimizing risks** | Relocate factories, production or logistics nodes; withdraw from vulnerable markets or delay entry into them; discontinue vulnerable products; withhold investment decisions; increase investment in prevention and preparedness activities |
| **Postponement of key activities** | Delay the actual commitment of resources to maintain flexibility; delay the construction of facilities or entry into markets |
| **Speculative risk management** | Assess foreseeable risks, or assume specific risks with an expectation of gaining competitive advantages; seek early engagement advantages; invest in speculative research and development activities |
| **Hedging risks** | Prepare alternate scenarios, e.g. by diversifying input sources, product offerings and output markets; develop multiple suppliers and warehousing options; purchase insurance |

| | |
|---|---|
| **Internalizing risks** | Integrate risks into the GVC through vertical or horizontal mergers, i.e. by acquisition of key suppliers and business partners |
| **Distributing risks** | Acquire insurance; relocate production offshore, outsource or contract specific functions |
| **Monitoring** | Assess and update GVCs' perceived risk profiles through surveys, research, etc.; develop comprehensive GVC ICT systems |
| **Shaping the business environment** | Engage policymakers in dialogue; initiate public-private partnerships; collaborate with suppliers and customers; advocate policies through business associations, etc. |
| **Facilitating recovery** | Develop business continuity plans; acquire insurance; maintain buffer inventories; develop multiple or redundant suppliers, logistics channels and distribution points; create multiple production nodes |

***Source:*** *Adapted from Manuj and Mentzer (2008).*

As GVCs grow in terms of geographical coverage and the complexity of inputs and outputs increases, the exposure of the entire system to disasters also becomes considerably greater (Manuj and Mentzer, 2008). Successfully preparing for disasters and effectively protecting the entire value chain now require commitments that are more comprehensive. Strategic vision that can extend beyond individual company's actions is needed. A consolidated systems approach throughout a GVC will provide better understanding of the various disaster risks that could threaten the different nodes, and the linkages between each of them that together comprise any GVC. APEC's recent efforts to enhance the resilience of business and global supply chains through its Emergency Preparedness Working Group are important contributions to improving regional private sector preparedness. APEC has organized training workshops on GVC resilience and published the Business Continuity Planning Guidebook for SMEs. A similar guidebook to address SMEs' particular needs regarding GVCs could be a useful tool to enhance their coordination within the GVC business environment.

## **3.8** Small and medium enterprises and disaster risk

When disasters occur, vulnerable people like the poor, children, women, the elderly, and people with disabilities are disproportionally affected. In the business world, the impact of disasters on SMEs is a similar concern because of their relative vulnerability.

These smaller businesses represent the backbone of the Asia-Pacific economy as they provide livelihoods for approximately 60 per cent of the labour force. Their size exposes them to relatively more serious consequences from delays in their operations, losses in inventories and any decline in revenue because of disasters (ESCAP, 2012; APEC, 2014). Their lack of resources and contingent reserves, or limited knowledge or planning capabilities about unanticipated events can constrain them from recovering quickly from losses suffered in disasters (ESCAP, 2013). For example, ten months after the Great East Japan earthquake and the subsequent tsunami in 2011, one third of SMEs were yet to restart their businesses (Government of Japan, 2012).

Transnational corporations and other large companies have the benefit of more abundant resources and can cope with disasters more effectively. Large firms have sophisticated management systems and internal risk management capabilities including business continuity plans. Their assets and

activities also are distributed more widely offering more possibilities for operational redundancy. While that may increase the firm's exposure to hazards, it also allows greater flexibility to mitigate their risks or to have more options and alternate facilities to recover after a disaster.

The smaller enterprises, and especially micro-businesses, are more vulnerable to disaster impacts because their activities generally are concentrated within a limited area, they have less contingent capacity, fewer resources and often a more limited access to disaster risk information. As they work on smaller margins, these firms typically also are less diversified in their supply and customer bases. They may be further constrained in their options or less compliant with norms and regulations because of their location in disadvantaged areas or less suited working environments shunned by larger companies (ILO, 2012). The lack of anticipatory policies, dedicated time, management incentives and the required means for implementation can further prevent them from pursuing effective risk management. Furthermore, there are fewer recovery measures available to assist SMEs following disasters, despite the considerable complications they encounter from incapacitating damage to their production systems or physical facilities. Only 13 per cent of SMEs in APEC economies have a BCP while 47 per cent of them are not conversant with continuity plans (ADRC, 2012).[22] There are beneficial reasons to expand the means by which SMEs can become better informed about their vulnerabilities to disasters, as well as becoming more conversant with protection measures available to them. If they have limited resources to pursue mitigation measures, conscientious commitments to inform and enable staff about fundamental aspects of business continuity planning can pay dividends when a disaster occurs.

In order to become more proactive in treating risk reduction seriously, Ingirige and Wedawatta (2014) suggest that to make the best use of limited resources, SMEs can focus their efforts on non-structural risk mitigation measures that address low-impact, high-frequency events. They will provide advantageous cost-benefit ratios compared to structural alternatives to mitigate the effects of high-impact, low-frequency events. Even modest efforts can be beneficial in overcoming the paradox that while SMEs are typically most exposed to disaster risks, they are less likely to incorporate continuity planning into their business culture.

Other stakeholders can provide support to SMEs in overcoming these challenges to enhancing their risk awareness and building their DRM capacities. While public support is essential and is discussed in chapter 5, business-to-business solutions either provided freely or on market terms, can extend support to SMEs. As part of their CSR initiatives, large companies could provide training in the design and implementation of BCPs, or risk assessment techniques to SMEs. Otherwise, if larger firms have proven standard operating procedures in place, they can guide SMEs in developing better ones suited to their simpler operational requirements. As businesses can communicate better among themselves and share a commercial working environment in comparison to government officials or NGOs, large companies may be a source of inspiration for SMEs.

## **3.9** Corporate social responsibility, and shared values

Corporate social responsibility (CSR) has become a priority for businesses as it enables them to fulfil their social obligations and enhance their public reputation (Porter and Kramer, 2006). It can also lead to new business opportunities in the local communities where businesses are located.

[22] *The survey considered SMEs to be companies with fewer than 300 employees.*

Typically, CSR has been a means for businesses to contribute to public needs following a disaster by such actions as providing donations in cash or kind, releasing employees for voluntary work in the community, or more substantially by providing material resources to assist with initial recovery activities. However, as communities become more exposed to disasters and businesses become more attuned to their multiple stakeholders, there is a need for firms to broaden their CSR efforts by increasing their involvement in DRM. They can do this by becoming more involved in risk prevention and mitigation motivated by their obligations of accountability (box 3-6).

Box 3-6 *Corporate social responsibility partnerships for disaster preparedness*

Animasia and MERCY Malaysia partnership: Using cartoon characters for disaster preparedness in schools

Animasia Studio Sdn. Bhd (Animasia) is a major animation service provider in Malaysia. It collaborated with the non-profit organization MERCY Malaysia in 2008 to enhance students' disaster preparedness programme in their schools. Animasia's popular "*Bola Kampung*" cartoon characters were used as ambassadors for the programme, which consisted of a school preparedness workshop for students and a disaster risk reduction workshop for teachers. Using the creative ideas and artwork designs by Animasia, MERCY Malaysia developed materials to help students build disaster preparedness. The popularity of the Bola Kampung characters appealed to the students, who were encouraged to share their newly gained exposure to disaster preparedness with their family and friends. The partnership between the business and a NGO was very successful in providing tangible benefits to the community, and gaining influence beyond financial profits for Animasia.

***Source:*** *Izumi and Shaw (2015)*

AXA Group and CARE International partnership for disaster prevention

Since 2011, the AXA Insurance Group has joined forces with the international development NGO, CARE International, to help vulnerable populations prepare for climate-related risks. The partnership reflects AXA's corporate social responsibility emphasis that is dedicated to risk research and education. AXA and CARE have been working together on a series of programmes to raise public awareness and increase community actions on disaster prevention in Benin, Indonesia, Madagascar, Mali, the Philippines and Viet Nam. These programmes target communities that are particularly exposed to natural hazards in developing economies and aim to reduce the human and economic impacts of disasters. Activities include campaigns to raise public awareness about risks, provide information about early warning systems and conduct training to reinforce communities' response capacities. The programme also plants mangroves as a natural barrier along coastlines to limit the impacts of storms.

***Source:*** *AXA Research Fund (2014a)*

Global value chains are providing new opportunities for companies to expand their CSR activities. The collapse of the Rana Plaza textile factory building in Dhaka, Bangladesh in 2013 killed more than 1,100 workers. As the factory was producing products for a global market in unsafe conditions, the international shock and public outcry following the disaster resulted in public demands for more social responsibility, and private sector accountability, to be associated with risk management. Wieland and Handfield (2013) suggest that companies need to audit supply networks and that social responsibility needs to go beyond only the direct relationships with first level suppliers.

### 3.9.1 Creating shared value

The present study emphasizes that disasters and their negative impacts are pressing social issues. It is widely expected that intergovernmental organizations, national Governments and NGOs all have responsibilities for addressing social issues. However, resources regularly fall short of requirements to solve the prevalent problems and challenges that all societies face. This is especially true for large and increasingly complex issues such as significant disaster events. The implementation of fiscal austerity measures demanded in a pressing global economic environment has spurred a growing recognition of the need to reformulate arrangements by which major contemporary challenges can be managed.

Shared value can be defined as **"***policies and operating practices that enhance the competitiveness of a company while simultaneously advancing the economic and social conditions in the communities in which it operates***."**
*(Porter and Kramer, 2011)*

Some seminal strategic business commentators have made the case that businesses can play a more significant role addressing primary social challenges at local, national and global levels. Porter and Kramer (2011) have advanced a concept of shared value that suggests societal needs can be addressed with a business model where profit can be mutually beneficial for businesses and the wider society.

In practical terms, it is expected that shared value can help to overcome the problem of scarce resources that Governments and NGO actors have faced. Solutions can be identified by tapping into the innovation, productivity and the organizational capacities of commercial organizations – and specifically through the wealth that the private sector generates. When approaches are being planned and implemented, they can be scaled to cope with social problems more efficiently. This thinking has now grown into a recognition that commercial organizations can enhance the effectiveness of disaster risk management.

The thinking that businesses can address social problems is not new. It has evolved over time, proceeding from organizations offering philanthropic donations to worthy causes and encouraging volunteer efforts within local communities, to more structured CSR initiatives emphasizing compliance with community standards in the name of good corporate citizenship or sustainability initiatives. Nonetheless, shared value endeavours can be questioned when it is considered that social performance and economic performance are at odds with one another, or at least require trade-offs between them.

Actions of the private sector often lack risk sensitivity and can create or increase the likelihood of disasters occurring because of their focus on short-term profit rather than long-term public good. Business activities that reflect CSR are ways that companies can contribute to social causes through disaster management. However, an underlying skepticism remains that CSR activities represent attempts by organizations to gain reputational standing to compensate for other activities considered to have negative social or environmental effects that contribute to disaster risk.

Shared value principles may help to counter these beliefs through the rationale that businesses can derive profit from solving social problems rather than causing social problems; i.e. there does not

need to be a trade-off between social progress and economic efficiency. The key challenge is the extent to which businesses can, or will, solve demanding social needs. Shared value may demonstrate an added benefit of businesses gaining the general trust of the wider public as already held by the confidence of their existing customers.

Because of business engagement in DRM, organizations have increasingly begun to address the disaster concerns through business continuity plans, emergency preparedness measures, CSR initiatives, and provisions to safeguard their employees. However, respected social development commentators such as Twigg (2002) argue that companies are far more likely to support singular relief initiatives following high-profile disasters than to engage in long-term mitigation and preparedness commitments. CSR values employed by businesses have typically centred on "doing good things" through endeavours focused on citizenship, philanthropy and sustainability and are often initiated following external pressure or because of an agenda determined by external considerations.

Research shows that CSR activities are pursued separately from profit considerations, with their scope and impact limited by designated budgetary allocations. Conversely, efforts to create shared value (CSV) aim to address social issues with a business model. This concept is distinctive from CSR as it reflects both economic and societal values. Shared values maintain a focus on creating joint value for the company and the community where it operates. It is an integral factor for the company to compete effectively in its business sector. Unlike CSR policies, CSV plans are internally generated, company-specific and may include actions such as a company transforming its procurement practices to increase the quality and yield of its production output.

There is an overriding view that the private sector can do more than short-term assistance projects at the time of a disaster and instead engage in programmes that contribute to longer-term social change. Some commentators have suggested that CSR is now obsolete (Forbes 2012), and that shared value approaches are preferred. Examples of CSV initiatives are presented in box 3-7, demonstrating positive benefits that can be provided for businesses and the wider society.

Box 3-7 *Corporate social responsibility partnerships for disaster preparedness*

NewWind Energy's "*Wind Tree*"

Launched in late 2014, NewWind Energy Solutions developed a product called the *"Wind Tree"*, which harnesses wind power to generate electricity while having a minimal impact on the local environment. The artificial *"tree"* offers a more aesthetically pleasing, silent alternative to conventional wind turbines. Its cables and generators are integrated into the leaves and branches, and the tree requires very low wind speeds to generate energy.

***Source:*** *NewWind (http://www.newwindenergysolutions.com/).*

Tesla Motor's open source patent movement

In June 2014, Tesla Motors is a global leader in electric car manufacturing and sustainable transport methods. In June 2014, it shared its patents for electric vehicle development at no cost. This allowed other car manufacturers to use its technology freely, encouraging faster innovation in the electric motor industry "to accelerate the advent of sustainable transport by bringing compelling mass market electric cars to the market as soon as possible".

***Source:*** *Tesla Motors, Mission Statement (http://www.teslamotors.com/blog).*

Findings outlined in the United Nations Global Assessment Report 2013 (UNISDR, 2013b) revealed businesses are gradually becoming more involved in identifying, analysing and managing disaster risks. Formulating risk-sensitive strategies and actions to contribute to DRM represents a potentially beneficial market for businesses. Organizations can endeavour to enhance their profits while simultaneously creating shared value that benefits society. While legal enforcement is the first step, businesses' acknowledgement of their important role in society is a necessary condition to increase the risk sensitivity of their investments. Otherwise, actors that are more motivated will identify means to pursue advantageous, if socially irresponsible behaviour that may save costs for them in the short term, but at the expense of more responsible actors.

## **3.10** Private sector participation in disaster risk forums and networks

International, regional and national forums provide opportunities for the private sector and their stakeholders to understand common interests and address each other's needs in working together to increase the resilience of communities. While the private sector is increasingly recognized as an important stakeholder in disaster concerns, it remains under-represented in DRM forums and networks at all levels. The private sector is most commonly represented unsurprisingly by dedicated business leaders speaking about business resilience. This is at odds with a more frequent passing attribution of the private sector in different frameworks as a passive actor, or one without a definitive role or responsibility.

To rectify this unproductive situation of seeming limited relevance, representatives of the private sector need to adopt a stronger presence and reflect a united, articulate voice in multi-stakeholder forums. This is particularly crucial to take full account of business interests (box 3-8). For instance, at the first UNISDR Asia Partnership meeting in 2014, a representative of the Government of Australia noted the need for direct private sector involvement in national DRM policymaking. Businesses are well situated to identify regulatory impediments, to offer insights about effective management, or provide their experience that can be useful to policymakers for advancing DRM practices.

Private sector task forces or reference groups for DRM can be established within existing structures such as the UNISDR Private Sector Advisory Group (PSAG) and the DRR Private Sector Partnership (DRR-PSP). The Private Sector Advisory Group was established in December 2010 to encourage private sector engagement in DRR. Its membership of business leaders believes in the benefits of preventive action and uses their experience by collaborating with UNISDR to increase resilience globally.

Working internationally, the DRR-PSP is a global partnership between UNISDR and representatives of the private sector to mobilize actions to reduce disaster risks. The partnership hosts an interactive exchange among business leaders from key industries including financial services, telecommunications, construction, and support services. Members of the DRR-PSP leverage resources and increase coordination in DRM through their participation in four working groups: the Making Cities Resilient Campaign, the Global Assessment Report Group, a Global Platform Working Group and a Regional Working Group.

Other business networks and associations such as chambers of commerce and industry are ideal venues to initiate new DRM initiatives for lobbying, gathering information, research, and setting industry standards, among others.[23] These functions would be too complex, costly or time-consuming if they were attempted individually by the members. By establishing DRM reference groups at regional and national levels, they can advance the following activities:

- Promote new perspectives, good practices and standards
- Recruit and promote champions or change agents
- Increase accountability of the private and the public sectors
- Share experience and disseminate good practices
- Access disaster risk information to build capacities among members
- Increase the relevance and influence of the private sector in DRM.

Box 3-8 *The ESCAP Business Advisory Council*

The ESCAP Business Advisory Council (EBAC) is an example of how regional forums foster the growing participation of business in DRM. The council was established for businesses working in various industries in 2004 as the only regional multi-stakeholder business forum that promotes ethical and responsible business practices. It also provides business perspectives on development issues for Governments. Through a periodic Asia Pacific Business Forum, EBAC ensures that Asia-Pacific markets, commerce, technology and finance can benefit economies and societies everywhere.

After the Rio+ 20 Conference on Sustainable Development in 2012, EBAC created a Sustainable Business Network to address the issues of environmental sustainability and social inclusiveness in business. Acting as a force for change it mobilizes businesses to adopt existing global business codes of practice such as those of the United Nations Global Compact, the Global Reporting Initiative and OECD Guidelines for Multinational Enterprises. Through these activities, network members advocate for Governments' efforts to advance productive policy environments for corporate sustainability. Members also promote the exchange of best practices and address issues of interest for SMEs.

The network established a Task Force on Inclusive and Sustainable Trade and Investment for DRM and climate change issues. Through capacity development and policy dialogues with local chambers of commerce and industry and other business organizations, members from the private sector support job creation, poverty reduction and the engagement of marginalized groups in society. These concerns are addressed particularly in disadvantaged areas and developing regions including least developed countries, landlocked developing countries and small island developing States. These commitments led the task force to incorporate DRM interests in its formal deliberations for the first time at the Sixth Asian Ministerial Conference on Disaster Risk Reduction in July 2014. Subsequently at the 11th Asia Pacific Business Forum, held in Colombo, Sri Lanka in November 2014, the task force placed DRM matters on the forum's agenda. At that occasion, the task force addressed DRM and climate change as its central focus. This holds the potential for further impetus to increase private sector engagement in DRM in Asia and the Pacific.

[23] *Based on Bovet, 1994; Eby, 1995; Stybel and Peabody, 1995.*

More DRM reference groups can be established within existing regional business networks and associations. With a conscious effort and methodical planning, such initiatives can elevate private sector views into high-level, multi-stakeholder and intergovernmental regional dialogues like the business advisory councils of ESCAP, APEC and ASEAN. Nationally, business interest groups can be established by local chambers of commerce and business associations to influence national and local regulations. They also can serve the interests of SMEs by providing DRM information, building capacities for assessing risks or developing business continuity plans.

# Chapter 4

# Public Sector Approaches for Business Engagement in Disaster Risk Management

As the reduction of disaster risk increasingly becomes more demanding, Governments find it necessary to encourage, develop and further enhance the roles and contributions of all stakeholders in the society – including the private sector. This commitment requires political leadership, combined with the expertise and influence of businesses to create the necessary enabling environments to advance DRM. Governments need to support businesses in increasing their resilience as well as to implement policies and institutional arrangements to further their risk-sensitive investments and business practices.

This chapter will discuss the important responsibilities of Governments to engage and support private sector efforts in realizing DRM in practice. It will also highlight the extent of business participation, and future opportunities, in international, regional and national DRM frameworks. Throughout the discussion, additional strategies and techniques will be presented to further private sector engagement and productive collaboration to help overcome the challenges that DRM policymaking faces.

## **4.1** Governments' roles and responsibilities for gaining business participation in disaster risk management

Governments are responsible for securing a basic set of rights for citizens. Although there are variations across cultures and different emphasis is evident among states, the rights to life and safety are recognized by most Governments.[1] In the context of DRM, it is widely accepted that governments are expected to lead the society in reducing the risk of disasters and enhance the resilience necessary to ensure the well-being of all citizens. Nonetheless, the private sector has the knowledge, the technical expertise and the resources to realize numerous initiatives that can provide solutions through multidisciplinary partnerships. At the same time, DRM has become a necessity for the private sector in its own interest.

In pursuing their objectives of generating wealth and opportunity, businesses exert a vital influence in all societies. They supply needed goods and services, are a major source of employment, and generate private wealth and public revenue. Despite being a dominant economic force and a major source of social cohesion in many aspects of society, the involvement of the private sector in DRM is still limited and can be constrained in its outlooks. Companies' reluctance can be frequently attributed to a perceived unlikelihood that disasters will occur. However, the increasing number and severity of disasters present a compelling case for them to engage in DRM at all levels of business operations.

These circumstances underline the importance for governments to establish an engaging and productive environment for businesses to integrate disaster risk into their investment decisions and management practice. A bankrupt business after a disaster leads to significant economic and wider social problems through unemployment and the absence of vital goods and essential services, which exceed the singular value of lost capital. Governments have the responsibility, and an even stronger motivating interest, to encourage and support businesses to be successful and to become resilient.

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[1] *The rights to life and security are recognized in Article 3 of the Universal Declaration of Human Rights, ratified by most countries.*

Governments have strong reasons to encourage businesses to pursue more disaster risk management commitments. Governments can support business initiatives in risk reduction by:

- Providing incentives for business investment in resilience and risk reduction
- Establish legal boundaries to avoid the creation of risk through socially unwise investments or potentially damaging operations
- Leading, coordinating and supporting well-designed and effective disaster preparedness, response and recovery efforts.

Since poor governance can worsen the risks faced by both businesses and society, governments need to be held accountable for inefficiencies, poor management and dishonest practices in their efforts. To demonstrate good governance, the public service needs to exhibit integrity, transparency and the wise allocation of adequate funds to implement plans and programmes in the public interest. Public participation and consultative decision-making based on the wide availability of relevant information contributes to attaining these attributes. Additionally, governments need to ensure the protection and continued utility of critical public infrastructure during times of crisis. The damage or loss of infrastructure at times of greatest need seriously affects both businesses and the public.

## **4.2** Policy frameworks to engage businesses

DRM policy frameworks establish principles and set long-term goals that can then define roles and propose means to pursue a common vision of a resilient society. As an instrument to advance public policy they cannot be composed of binding prescriptions, but have to frame a common understanding of the values, and the challenges countries face in their efforts to manage disaster risk. If they are well conceived and clearly expressed, policy frameworks should convey the different roles and responsibilities of both public and private stakeholders, including business. This section reviews current global and Asia-Pacific DRM policy frameworks, as well as some selected national frameworks to illustrate the various types of private sector participation.

### 4.2.1 International level: The Hyogo and Sendai Frameworks for Action

International efforts to engage the private sector in DRM have evolved over time. The International Decade for Natural Disaster Reduction (IDNDR) recommended national policy measures in 1989 "to mobilize the necessary support from the public and private sectors."[2] The Yokohama Strategy for a Safer World presented at the first World Conference on Natural Disaster Reduction in 1994, elaborated this earlier statement by calling for the "integration of the private sector in disaster reduction efforts through promotion of business opportunities."[3]

The Hyogo Framework for Action (HFA) became the global blueprint for disaster risk reduction from 2005 to 2015 when it was adopted by 168 countries at the Second World Conference on Disaster Reduction in January 2005. UNISDR was designated as the secretariat for its implementation as

[2] *United Nations General Assembly Resolution A/RES/44/236. annex B, sect. 3, para. c. http://www.un.org/documents/ga/res/44/a44r236.htm*
[3] *United Nations Economic and Social Council substantive session of 1994. E/1994/85, sect. 9, para. (p). http://www.un.org/documents/ecosoc/docs/1994/e1994-85.htm*

it focused on "building the resilience of nations and communities to disasters". The HFA urged Governments to "promote the establishment of public–private partnerships to better engage the private sector in disaster risk reduction activities; encourage the private sector to foster a culture of disaster prevention, putting greater emphasis on, and allocating resources to, pre-disaster activities such as risk assessments and early warning systems" (UNISDR, 2005).

While the HFA called on public-private partnerships to mobilize resources, the important role of the private sector for DRM and building resilience was not sufficiently recognized in the HFA. As a result, only half the countries reporting their progress on achieving framework intentions routinely cited engagement with businesses (UNISDR, 2013a). However, the noted importance of private sector involvement in DRM became somewhat more evident during the later years of the framework as increasing evidence demonstrated important links between disaster risk and business interests.

When the HFA concluded, the succeeding Sendai Framework for Disaster Risk Reduction (SFDRR) was adopted by 187 United Nations Member States at the Third World Conference on Disaster Risk Reduction in March 2015. This latter framework provides a renewed opportunity for the private sector to engage directly with Governments and policymakers by providing their expertise to create future disaster risk management policies. It places more emphasis on implementation than the HFA did and includes specific measures to realize public-private partnerships. It stresses the need for all stakeholders, including businesses, to "work more closely together and to create opportunities for collaboration", as well as for businesses "to integrate disaster risk into their management practices" [4]. The SFDRR further encourages the private sector to integrate DRM in business models to avoid the creation of new risks and to reduce existing risks. [5]

Of the four priority areas for action in the SFDRR (box 4-1), three specifically highlight roles for the private sector. The first priority of understanding disaster risk emphasizes the importance of building capacities in the private sector and the promotion of partnerships to share experience and good practices.

Box 4-1 *Sendai Framework for DRR priorities for action*

1. Understanding disaster risk
2. Strengthening disaster risk governance to manage disaster risk
3. Investing in disaster risk reduction for resilience
4. Enhancing disaster preparedness for effective response, and to *"build back better"* in recovery, rehabilitation and reconstruction

The second priority focuses on strengthening governance to manage disaster risk. It specifically calls for the further development of national and subnational frameworks of laws, regulations and public policies to guide the public and private sectors in their efforts. Attention is directed towards enhancing DRR initiatives and their means to provide transparency and accountability, such as by the development of quality standards, certifications and awards for DRM.

[4] *United Nations General Assembly Conference document A/CONF.224/L2, para. 7.*

[5] *UNISDR created a Disaster Risk Reduction Private Sector Partnership Working Group to involve the private sector in disaster risk reduction by mobilizing resources through core business arrangements. It encouraged joint actions to further sustainability, increase philanthropy, corporate social responsibility and for sharing experiences. (http://www.unisdr.org/partners/private-sector).*

The third priority highlights the importance of public and private investment in disaster risk prevention and reduction. It cites structural and non-structural measures as being essential to enhance economic, social, cultural and environmental resilience. Using policy instruments and actions to transfer or share risk and to ensure financial protection for public and private investments made to reduce the fiscal impacts of disasters can be beneficial. Strengthening resilient private investments through disaster risk prevention and reduction measures such as standardized building codes can enhance safety in critical facilities and physical infrastructure.

The SFDRR provides a more explicit and resourceful international basis for engaging the private sector in DRM. Its inclusion of public policies that provide incentives and opportunities for risk-sensitive private investment also can stimulate additional voluntary commitments. The SFDRR Framework calls for the promotion of cooperation among academic, scientific and research entities and networks, and the private sector to develop new products and services to help reduce disaster risk, in particular, those who help developing countries address specific challenges.[6]

### 4.2.2 Regional level progress

DRM policies are discussed at the regional level through the ESCAP Committee on Disaster Risk Reduction and in the biennial Asian Ministerial Conferences on Disaster Risk Reduction (AMCDRR). The evolution and emphasis of predominant issues are reviewed in the context of each of these regional institutions.

#### *The ESCAP Committee on Disaster Risk Reduction*

The ESCAP committee convenes every other year and provides countries with policy advice, technical assistance and measures to strengthen institutional capacities. It extends particular consideration to high-risk, low-capacity countries including the least developed countries (LDCs), landlocked developing countries (LLDCs), and small island developing States (SIDS), as well as motivating wider participation and the development of collective views in global DRR forums.

The committee consists of government officials representing disaster management interests and other related professional disciplines from relevant government sectors. ESCAP's Division for Information and Communications Technology and Disaster Risk Reduction provides a secretariat to support the committee. As ESCAP's responsibilities engage representatives drawn from many areas of interest among its Member States, the committee can relate to DRM issues across a spectrum of influential responsibilities. These sectors include the work of development planning and finance, trade and investment, transportation, statistics, space technology, the environment and other official pursuits that have extensive involvement in public-private partnerships.

Following the Indian Ocean tsunami, the member States of ESCAP decided to use the convening power of the commission as a forum for States to promote the implementation of the HFA in the region. Resolutions and decisions were ratified calling on States, United Nations organizations and other institutions to recognize the unique role of the private sector in society and to support regional cooperation to advance DRM in its various forms. Public-private partnerships involving DRM in trade and investment activities have since gained new impetus.

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[6] *SFDRR, para. 31 (c).*

An example of this can be seen following the conclusion of the Sixth Asian Ministers Conference on Disaster Risk Reduction in July 2014. Recommendations from the conference about business engagement in DRM were carried forward to other forums. In September 2014, ESCAP conducted a regional workshop on the use of space technology and geographical information systems (GIS) for disaster risk reduction. One session was dedicated specifically to discussions about the private sector's use of science and technological innovation in DRM.

In November 2014, the ESCAP Business Advisory Council (EBAC) held the 11th Asia-Pacific Business Forum in Colombo, Sri Lanka. This periodic event is attended by business leaders, their stakeholders and government officials who jointly shape the investment environment and resulting trade conditions in the Asia-Pacific region. At this meeting, attention was particularly focused on the opportunities likely to arise from the forthcoming international sustainable development agenda after 2015. EBAC organized a side event for businesses, government officials, United Nations agencies, regional organizations and representatives of the international donor community to discuss private sector participation in DRM. Following the discussions, EBAC's Task Force on Inclusive and Sustainable Business decided to sharpen its focus on disaster risk management and climate change. It redefined its terms of reference to include the business community formally in future regional intergovernmental discussions about DRM.

As a regional economic and social commission of the United Nations, ESCAP formulates a sustainable development framework for Asia and the Pacific. It does this through an annual multi-stakeholder forum, the Asia-Pacific Forum on Sustainable Development (APFSD). Participating countries included disaster risks among their top development priorities in the APFSD's session held in May 2014. As a result, public-private partnerships associated with DRM will become an integral part of the innovative partnership and sustainable financing programme for development.

### *The Asian Ministerial Conferences on Disaster Risk Reduction*

The AMCDRRs are regional gatherings organized jointly by UNISDR and a different hosting Asian country every two years. They bring together many stakeholders from Asia-Pacific countries, including Government ministers and other senior officials, to discuss DRM policies and to coordinate regional efforts that can strengthen country's disaster resilience. They provide effective regional platforms for the exchange of DRM ideas, innovations and best practices. Each conference addresses specific themes in technical sessions and concludes by issuing joint political declarations (box 4-2). These consensus expressions of participating States provide a summary of the primary issues and most relevant themes for the stakeholders in attendance. They also provide insight into the political commitments or the continuing needs of the public sector concerning business resilience in the region.

At the First AMCDRR in Beijing in 2005, the main outcomes were clearly shaped by the HFA, which had been adopted earlier in the year as a comprehensive "blueprint" for global DRM initiatives. The conference promoted the HFA and sought commitments and actions from Asia-Pacific Governments to implement disaster risk reduction. Participants' expectations included initiatives to strengthen existing regional cooperation mechanisms. The conference acknowledged that DRM should be interdisciplinary and would require the collaboration of many stakeholders. However, the engagement of business was not specifically highlighted in the final summary of the proceedings.

[7] *First AMCDRR, Beijing, China, 2005, http://6thamcdrrthailand.net/6thamcdrr/Portals/0/Downloadable/PrevAMCDRR*

Box 4-2 *Asian Ministerial Conferences for DRR and their key themes*

- **First AMCDRR** held in Beijing, China, 2005 - HFA established
- **Second AMCDRR** New Delhi, India, 2007 - HFA reaffirmed
- **Third AMCDRR**, Kuala Lumpur, Malaysia, 2008 - *"Multi-stakeholder Partnership for Disaster Risk Reduction: From National to Local"*
- **Fourth AMCDRR** in Incheon, Republic of Korea, 2010 - *"Disaster Risk Reduction through Climate Change Adaptation"*
- **Fifth AMCDRR** in Yogyakarta, Indonesia, 2012 - *"Strengthening Local Capacities for Disaster Risk Reduction"*
- **Sixth AMCDRR** in Bangkok, Thailand, 2014 - *"Promoting Investments for Resilient Nations and Communities"*

The Second AMCDRR, held in New Delhi, India in 2007[8] reaffirmed Governments' commitments to the HFA. The conference was significant as its concluding declaration explicitly stated the importance of countries encouraging innovative public-private partnerships to strengthen disaster risk reduction. This was the first collective regional acknowledgement of the need to include business in DRM practice. It was further suggested that PPPs could be fostered within countries using corporate social responsibility initiatives, sustained business continuity programmes and opportunities to invest in disaster risk reduction.

The Third AMCDRR convened in Kuala Lumpur, Malaysia in 2008,[9] again emphasized the importance of PPPs for disaster risk reduction as the conference theme was "Multi-stakeholder Partnership for Disaster Risk Reduction: From National to Local". PPPs were elaborated with respect to corporate social responsibility and business continuity planning. They were invoked to promote fiscal policies that could enhance disaster risk management, including microcredit and microfinance schemes, and to encourage the creation of other multi-stakeholder mechanisms. The conference declaration also stressed the need to create an enabling environment for the development of catastrophe risk insurance markets to provide financial incentives for disaster risk reduction.

The theme of the Fourth AMCDRR Conference[10] in Inchon, Republic of Korea in 2010 was "Disaster Risk Reduction through Climate Change Adaptation". With attention devoted to other issues, business engagement in DRM was not explicitly mentioned in the conference declaration.

The Fifth AMCDRR Conference[11] held in Yogyakarta, Indonesia in 2012 provided compensatory recognition of the role of business in DRM by establishing a private sector stakeholders' interest group. The group endorsed terms of reference and agreed a short-term workplan focused on the role of risk transfer. This subject reflected the overall theme of the conference, "Strengthening Local Capacities for Disaster Risk Reduction". Otherwise, the conference did not prioritize business involvement in DRM specifically, although the value of PPPs was reiterated. Attention was directed towards partnerships being involved in terms of local risk assessment, financing for local communities

[8] *Second AMCDRR, New Delhi, India, 2007, http://6thamcdrr-thailand.net/6thamcdrr/Portals/0/Downloadable/PrevAMCDRR/DelhiDeclaration.pdf*
[9] *Third AMCDRR, Kuala Lumpur, Malaysia, 2008, http://6thamcdrr-thailand.net/6thamcdrr/Portals/0/Downloadable/PrevAMCDRR/KualaLumpurDeclaration.pdf*
[10] *Fourth AMCDRR, Incheon, Republic of Korea, 2010, http://6thamcdrr-thailand.net/6thamcdrr/Portals/0/Downloadable/PrevAMCDRR/IncheonDeclaration.pdf*
[11] *Fifth AMCDRR, Yogyakarta, Indonesia, 2012, http://6thamcdrr-thailand.net/6thamcdrr/Portals/0/Downloadable/PrevAMCDRR/Yogyakarta.pdf*

to promote investments in their social and physical infrastructures. This was an important recognition of the need for stakeholders to alter priorities for greater public investment in prevention rather than concentrating predominantly on matters of response and recovery. Encouragement also was provided to develop schemes for microinsurance and pooling financial resources for risk mitigation. Each of these approaches stimulated regional exchange and promoted collaboration to enhance local resilience.

The Sixth AMCDRR Conference[12] held in Bangkok in 2014 was the last regional DRR intergovernmental meeting in Asia before the conclusion of the HFA, and the approaching Third World Conference on Disaster Risk Reduction (WCDRR) in March 2015. It was a unique opportunity for Asian DRM organizations and practitioners to shape the post-2015 global framework for DRR, to succeed the HFA. The conference theme was "Promoting Investments for Resilient Nations and Communities", which was supported by three sub-themes. They were enhancing resilience at local levels; improving public investments for disaster and climate risk management to protect and sustain development gains; and private sector roles in public and private partnership for DRR. Business involvement in DRM featured prominently in the final declaration and the outputs of this conference exceeded those of the previous AMCDRRs. They were especially pronounced with respect to the attention drawn to PPPs for DRR, illustrating means to encourage a shift from response-oriented actions to risk-informed investments as part of the business process. Sixth AMCDRR emphasized the need to increase dialogue among all stakeholders to identify barriers and opportunities to build an enabling environment for the different types of partnerships. Improving public investments for disaster and climate risk management to protect and sustain development accomplishments was encouraged. Suggested strategies included using risk-sensitive investments with inherent accountability measures in multisector development plans and strengthening institutional capacities to obtain, analyse and use risk information in development planning and implementation. The benefits of additional financial protection strategies could be considered order to promote resilient public investments, especially in high-risk areas.

Significantly, discussions at the Sixth AMCDRR conference marked a more nuanced consideration of business DRM in the region, than before. Participants recognized that business practices have the potential to create positive or negative impacts in terms of disasters as they can either reduce or increase risk levels in society. As such, there is a need for business and the public sector to focus on avoiding the creation of creating further risks by using more informed, risk-sensitive investments rather than only speaking about risk reduction. The 2014 conference also acknowledged that the vulnerability of businesses to disaster losses needs to be addressed through combined actions emanating from the SFDRR. The relevance of DRM for businesses was framed as being particularly relevant in Asia, where many micro, small and medium enterprises are vulnerable. These MSMEs bear a greater risk of losses from extreme events. In addition to identifying means to increase the resilience of MSMEs, the participants at the conference noted that sharing risk information among the private, public and non-profit sectors had to be improved.

The responsibility for businesses to strengthen resilience is evident from a review of the outputs from regional forums. Despite limited progress since 2005, this has progressed from the recognized value of PPPs to increasingly elaborated strategies. They involve an expanded constituency of businesses, public and non-governmental organizations including academic institutions in DRM policymaking processes.

[12] *Sixth AMCDRR, Bangkok, Thailand, 2014, http://6thamcdrr-thailand.net/6thamcdrr/Portals/0/Final%20Bangkok%20Declaration%20-6%20AMCDRR%20-final%2026%20June-0800%20hours.pdf*

The expressed need for greater participation of businesses on national and other multisector platforms has been an additional step to gaining the wider engagement of an entire society in DRM.

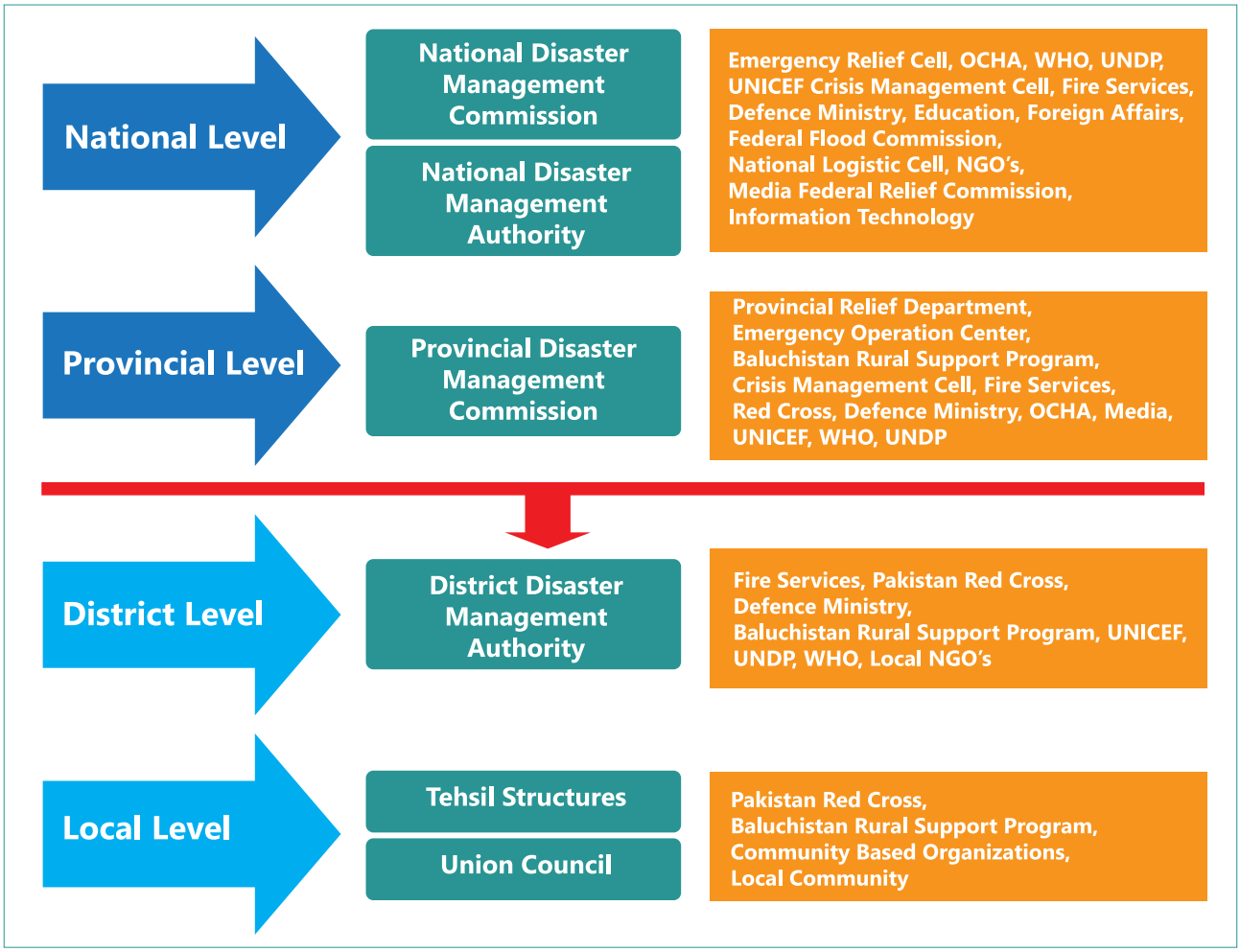
### 4.2.3 National level experiences

This section presents national institutional frameworks for involving the private sector in DRM activities in selected Asia-Pacific countries (boxes 4-3, 4-4). The strengths and weaknesses of current systems in Pakistan, Australia and the Philippines are considered in their respective national contexts to provide an overview of some of the different approaches being used in the region.

#### *Pakistan*

The institutional structure of Pakistan's disaster management programme is hierarchical with clearly designated structures and authorities at each level (Figure 4-1). Principally, the National Disaster Management Authority (NDMA) administers all decisions and allocates resources designated for disasters arising from natural events (Ainuddin and others, 2013). It determines the policies and is responsible for coordinating the implementation of its strategies by the various actors involved in disaster mitigation and response. These subsidiary offices include those of the District Disaster Management Authorities and Provincial Disaster Management Commissions, which exercise the authority to issue alerts and disaster warnings for local jurisdictions.

Figure 4-1 *Structure and mechanism of disaster risk management in Pakistan*




**Source:** *Ainuddin and others (2013).*

The primary national actors in Pakistan's DRM system are the Government, NGOs and civil society groups, although a lack of coordination among them has been noted as a systemic weakness (Ainuddin and others, 2013). Presently, the private sector plays little, if any, role in disaster management activities administered by the national authorities. The few localized examples of private sector involvement result from NGOs' efforts to collaborate with businesses. Increasingly, NGOs have advocated for more opportunities to increase businesses and commercial organizations in future DRM initiatives.

Greater involvement of the private sector would improve the country's DRM system in several ways. Beyond increasing the potential for increased human, technical and material resources, concerted business initiatives could publicize awareness and general public knowledge about hazards, vulnerability and disaster preparedness. By sharing their operational experience, organizational skills and other technical abilities such as critical analysis or GIS applications, businesses could strengthen DRM competencies. In terms of material support, businesses could supply specialized technical equipment including disaster simulators, early warning systems, and modelling technology or specialist to train national and local authorities in their use. Without pursuing any of these possibilities or similar opportunities, it will continue to be a struggle to increase the capacities of disaster management teams to empower local communities or to create robust disaster prevention programmes.

The NDMA has acknowledged that financial forms of risk mitigation should be an important component of the National Disaster Risk Management Framework (CDKN, 2012). Pakistan has well-developed insurance, banking and microfinance systems, so by engaging them strategies could be devised to reduce losses and contribute to faster recovery from disasters. The limitations and gaps in Pakistan's DRM framework represent opportunities for private sector collaboration and contribute to disaster management in the country. The Government would need to facilitate a greater willingness for public sector engagement with primary industries, such as telecommunications, logistics and transportation to improve coordination and collaboration. However, because of the sweeping implications that would be involved in such arrangements, it is realistic to note that a reformulation of the country's existing DRM system would depend on national legislative and regulatory reforms.

Box 4-3 *Cambodia's comprehensive legal framework for disasters*

The Cambodian Government has taken steps to strengthen disaster management provisions in the country, including an acknowledgement of the important roles that non-governmental actors and the private sector can play in the prevention and response to disasters. Draft disaster management legislation was prepared by the National Committee for Disaster Management (NCDM), and approved by Cambodia's Council of Ministers in January 2015. It will next be considered by the National Assembly.

Disaster management activities in Cambodia are organized under the Royal Decree on the Establishment of the National Committee for Disaster Management of 2002. The new draft law signals a greater commitment to disaster management efforts at a national level. It also promises to provide stronger mechanisms for disaster management and will enable NCDM to improve and strengthen its authority in provinces and districts. Previously, disaster management activities in Cambodia almost exclusively involved government authorities, ministries and official agencies, minimizing the roles that the private sector could undertake. Significantly, new laws recognize that local disaster relief societies, NGOs, and the private sector also can play valuable role in disaster management activities.

***Source:*** *Naren and Wright (2015), Amin and others (2011).*

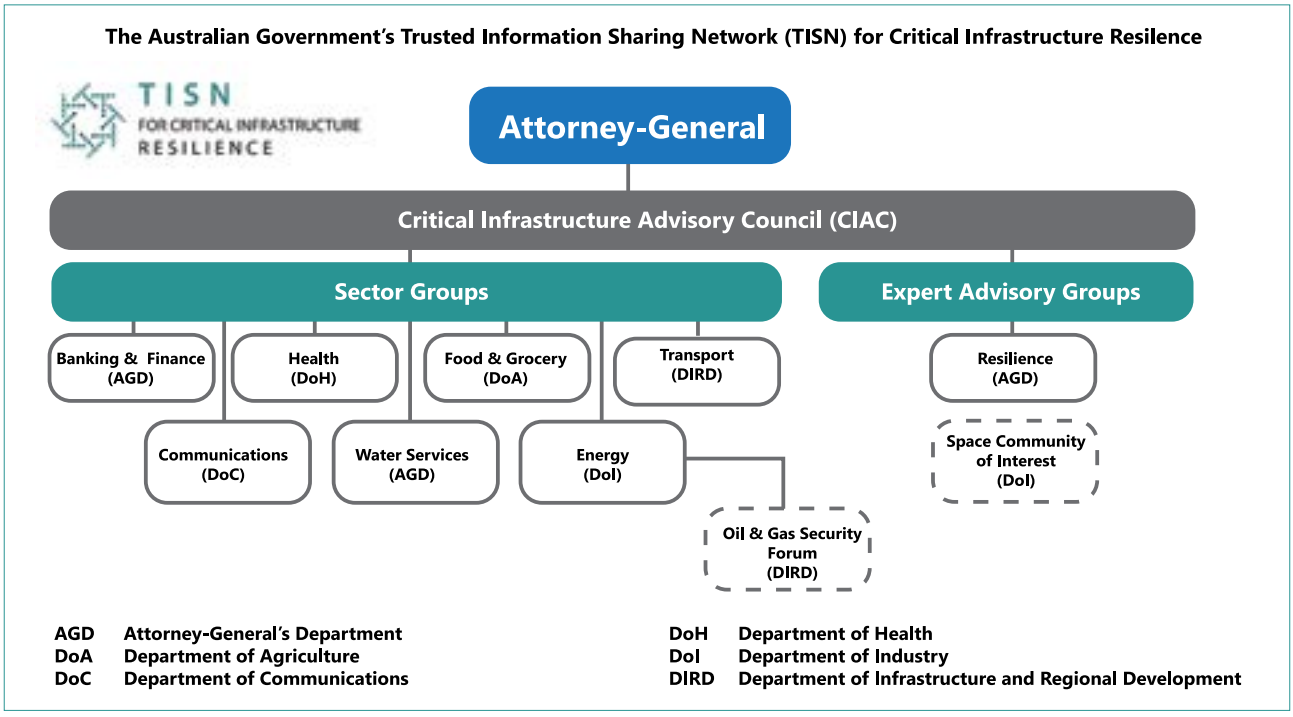
## Australia

Australia's experience highlights numerous examples of private sector contributions to risk reduction efforts across the country's multitier disaster management framework that encompasses commonwealth (national), state, district and local governments. In December 2009, Australia's superior governance forum, the Council of Australian Governments, agreed to implement a resilience-based approach to national disaster management. The commitment was formalized when the National Strategy for Disaster Resilience was adopted in February 2011. It reflected the reasoning that resilient DRM is "not solely the domain of emergency management agencies; rather, it is a shared responsibility between governments, communities, businesses and individuals" (Council of Australian Governments, 2011).

The value Australia attributes to the role of business in DRM is illustrated by the Trusted Information Sharing Network (TISN). This network is part of the Critical Infrastructure Resilience Strategy that is designed to safeguard the delivery of essential national services such as power, water, health, communications and banking. This business and government partnership provides a forum where partners from the private and public sectors can share vital information on security issues relevant to the protection of critical infrastructure and the continuity of essential services in the face of prevailing hazards.

The TISN scheme was established in 2003 and it has helped to foster an environment through which major private sector operators of critical infrastructure can collaborate with relevant government agencies (figure 4-2). This productive association has developed strategies and techniques to assess and mitigate societal risks while strengthening the resilience capacities of the businesses. By building confidence and increasing the cooperation between public and private stakeholders, TISN is an important facility for businesses to engage and inform influential government agencies.

Figure 4-2 *Australia's Critical Infrastructure Resilience Strategy*




**Source:** *Australia, Attorney-General's Department (2010).*

The Australian Government has acknowledged the value of public-private partnerships in disaster management endeavours for developing community risk awareness and providing essential services. Bajracharya and others (2012) cite examples of PPPs associated with DRM from Queensland's "Gold Coast" that have demonstrated local community efforts to engage resident businesses for building community resilience. The 8700 residents of the planned community of Varsity Lakes benefited from combined private and public sector interests to develop local disaster management strategies. A non-profit local community group, the Varsity Lakes Community Limited, disaster management officials of the Gold Coast City Council, the local governing council and an insurance company all contributed to the project. The consortium of interests was motivated to create a safe and secure community "from the ground up". The joint efforts produced a local disaster management guide and a checklist for preparing household emergency kits. The success of the project resulted in Varsity Lakes being certified as an International Safe Community by the World Health Organization (Bajracharya and others, 2012).

Australia has acted on the understanding that the task of building effective disaster resilience at local, national, or even regional levels, cannot be left only to governments. The private sector can play a central role in the design and construction of resilient infrastructure and, by doing so; it provides tangible inputs into national DRM efforts.

Box 4-4 *Fiji's experience with risk management regulations*

Tourism is a primary economic activity for many small island developing States, but the industry is also vulnerable to external factors such as disasters triggered by natural hazards. Appropriate regulations that can apply standards leading to resilience contribute to the protection of human lives and economic assets. They also support the sustainability of commercial sectors and their continuing contributions to the national economy.

The National Disaster Council of Fiji has developed guidelines and standards to regulate effective DRM procedures and to provides incentives for the tourism industry interests to exceed recommended building codes. According to Fiji's HFA report for 2011-2013, the use of legal standards increases the confidence of international investors. Fiji's National Disaster Management Office strictly enforces building zones ensuring that coastal residential areas are above tsunami and storm surge levels. Different agencies and technical departments work together to calculate hazard thresholds to determine planning zones and DRM policies. The Water Authority of Fiji has implementation policies to ensure that rural water systems are durable and can provide safe water to rural communities at all times. Crisis management systems are developed for all actors to minimize disaster impacts and facilitate recovery. Municipalities represent a good example since they are required by Fiji's Ministry of Local Government to incorporate DRM into their planning. Regulations benefit both the public and private sectors in their "systematic and strategic approaches to improving DRM since managing the resulting images after a disaster can be challenging (Mahon and others, 2012).

***Source:*** *Based on Fiji National Disaster Management Office (2012), and Wright (2013).*

## *The Philippines*

Private sector involvement in DRM activities in the Philippines is well established, having been consolidated through collaborative efforts and legislation implemented by the Government. The country's 1987 Constitution acknowledges the critical role of the private sector in the country's development, which has progressed to encompass the roles businesses can assume in national disaster risk management. The frequent occurrence of disasters in the Philippines and the likely business

interruptions has convinced many large Filipino businesses of the importance of their longstanding involvement in disaster-related activities. The Corporate Network for Disaster Response (CNDR) was created in 1990 as a private sector forum focusing on emergency response and disaster preparedness. The Philippine Development Forum is a stakeholders' policy forum dating from 2004 that is primarily interested in development agendas, but it has acknowledged that disaster mitigation and climate change adaptation measures are critical to sustainable development and national security. These and other organizations in the Philippines have worked with government agencies, local government units and development partners. They have formed partnerships or agreed to memorandums of understanding (MOU) with various stakeholders to initiate DRM and climate change adaptation (CCA) projects. The Government has offered taxation incentives to encourage large organizations to engage in CSR and philanthropic activities, although following disasters those efforts previously concentrated on emergency relief and recovery activities.

The country's National Disaster Risk Reduction and Management Council (NDRRMC) requires that one of its members be a representative of the private sector, signaling the inclusion of businesses as a legitimate partners in disaster management. Projects for building capacities in disaster prevention, mitigation and recovery were designated as preferred activities by the 2011 Investment Priorities Plan of the Government's Philippine Public-Private Partnership Program. Activities conducted under the guidance of the national PPP centre were designed to encourage businesses to invest in infrastructure development programmes in designated priority areas.

Notable PPPs that have advanced disaster management include the "SMART Infoboard" which was developed through a collaboration between the Philippines Government and SMART Communications. This emergency communications arrangement allows various government agencies to send free electronic message alerts across their disaster preparedness networks to their professional and public constituencies. This joint effort expands the reach of the many participating agencies that include the NDRRMC, the Department of Science and Technology's Philippine Atmospheric, Geophysical and Astronomical Services Administration (DOST-PAGASA), the Philippine Information Agency (PIA), and the Office of Civil Defense (OCD). SMART also developed the Batingaw smartphone application in cooperation with the OCD and the NDRRMC. This messaging service raises public awareness about DRR and increases personal and family preparedness by providing basic information about how people can reduce vulnerability during disasters.

In working through the OCD, the NDRRMC has signed numerous MOUs with the private sector to improve disaster response operations. Project DINA (Disaster Information for Nationwide Awareness) and the formation of the Intelligent Operations Center are both initiatives that resulted from joint MOUs. The Intelligent Operations Center was established by The Department of Science and Technology and the IBM Corporation as a central point of command for disaster management in the Philippines.

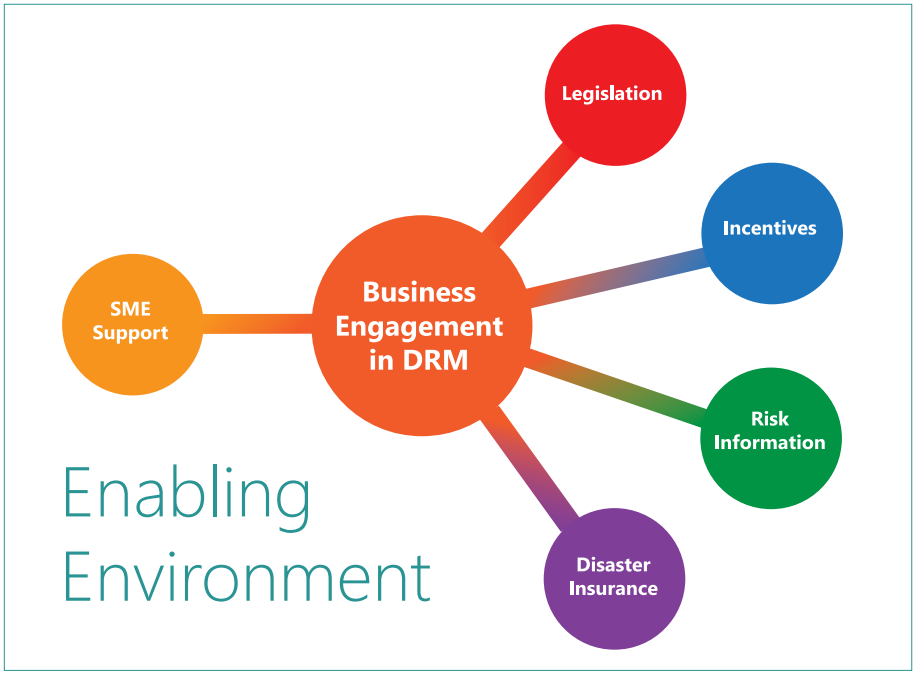
The Office of the Presidential Assistant for Rehabilitation and Recovery (OPARR), the national agency charged with the management of rehabilitation, recovery and reconstruction following large disasters, routinely engages with the private sector and NGOs supporting rehabilitation and recovery projects. The OPARR endeavours to sustain these collaborative efforts through regular consultations and the exchange of information with private sector partners.

The Philippines has established an effective framework of legal regulations, incentives and mechanisms to encourage even more private sector engagement in DRM activities. The emphasis aims to motivate Filipino businesses to pursue long-term, strategic preparedness measures to minimize disaster risks and their consequences, rather than to provide only short-term relief assistance after a disaster occurs.

## 4.3 Public policy options to create enabling environments

Involvement of the private sector in DRM remains limited overall, and commitments are fragmented. Chapter 3 discussed the limited extent of insurance being used to transfer disaster risks in Asia and the Pacific, particularly in developing countries. More attention is required to create enabling environments that combine sound legal and regulatory frameworks with sustainable economic incentives to support businesses investments in DRM (SELA, 2013). Figure 4-3 displays the features required to do so. Better risk information and a recognition of the value provided by financial instruments to offset a firm's exposure to residual risk are prerequisites to effective DRM. As emphasized in chapter 3, SMEs require additional support to enhance their resilience. The role of public policy is critical to encourage options that can create conducive environments for businesses to adopt DRM.

Figure 4-3 *Enabling environments for business engagement in disaster risk management*




### 4.3.1 Legal and regulatory frameworks

Addressing disaster risks involves multiple responsibilities and informed action from many stakeholders who are committed to increasing resilience in society (Takao and Rajib, 2012). As a crucial function of governance, Government justifiably needs to drive the strategies concerned, assuring that initiatives are well designed, sufficiently resourced and implemented responsibly. The Government also has to provide the necessary oversight to ensure that the necessary legal and regulatory frameworks are effectively designed, in place, and most importantly, enforced.

Essential control measures will vary from country to country depending on the political systems, risk levels, the vitality of the economy, institutional capacities and other factors. Nonetheless, basic components of an enabling environment can be described in general terms to avoid prescribing a universal framework for common use (UNISDR, 2009b). Table 4-1 indicates essential legal and regulatory components for assured and responsible DRM.

Table 4-1 *Components of enabling legal and regulatory environments*

| | Objective, goal and expected result | Instruments |
|---|---|---|
| Business | Align public and private interests for DRM<br>Identify incentives for investment and activities that advance DRM, e.g. in infrastructure<br><br>Establish agreed standards for conducting safe business, including obligations to develop business continuity plans<br><br>Support training in relevant skills and abilities<br><br>Promote preparedness and mitigation practice, e.g. increasing insurance coverage | Building codes<br><br>Corporate laws<br><br>Land use laws<br><br>Tax codes<br><br>Restriction on industrial or commercial zones<br><br>Labour law<br><br>Safety regulations |
| Public-private partnerships | Enable PPP projects and related activities, such as in procurement and public service activities<br><br>Provide incentives for PPP, e.g. through subsidies, tax rebates, etc. | Public administration laws (e.g. procurement)<br><br>Tax codes<br><br>Corporate laws<br><br>Labour law |

Many Asia-Pacific countries have made commendable progress in establishing legal frameworks for DRR (ESCAP and UNISDR, 2012), but some States have been more dynamic than others in their resulting actions given their varied circumstances. The evidence of effective actions in a country will convey the extent to which DRM knowledge has informed legislation, and how effectively the policies are implemented (ESCAP and UNISDR, 2012).

## ***Regulatory instruments***

Well-considered and clearly expressed legislation is the most effective way to empower agencies with new responsibilities and to mobilize stakeholders to invest in risk-sensitive endeavours. Other fields where risk-sensitive policies and regulations are better established, such as in energy, transportation and climate change can provide institutional guidance based on their experience (UNESCAP, 2013). The implementation of rules or treating DRM objectives as elements of law guarantees that a project will become operational and attain increased levels of performance within a specified time (Leontescu and Svilane, 2012). It is more difficult to enforce regulations for existing facilities and practices, but safety standards can be effectively applied in reconstructed structures when recovering from a disaster (Sudmeier-Rieux and others, 2013). This section provides some common regulatory instruments used by public officials to advance DRM in practice.

### *Building codes*

Governments establish building codes in most countries based on sound engineering and architectural principles to provide public safety. For a construction permit to be issued, the building design and construction plans need to meet minimum criteria for structural integrity under specified conditions, including seismic or other geophysical circumstances. These criteria vary among the different locations in a country and are typically calculated by the government using historical hazard data and other information that may be available to the public. However, beyond being enacted through legislative procedures, building codes are effective only when they are enforced and actually used in construction. Public sector authorities need to ensure that sufficient human, technical and financial resources are available to verify compliance with the standards of professional integrity and uncompromising administration of the permit system (box 4-5).

Box 4-5 *Building codes in Japan*

As one of the most seismically active countries in the world, Japan has some of the most rigorous engineering and construction standards. In 1981, it introduced the "shin-taishin" (new earthquake resistant building standard) amendment into the former *"kyu-taishin"* building code, setting a higher minimum level of earthquake resistance. The amendment required that a building should suffer no more than a limited number of superficial cracks and continue to function normally in moderate to strong earthquakes (Richter magnitude between 5 and 7), and that it should not collapse in a stronger earthquake.

Currently, the older kyu-taishin buildings are between 20 per cent and 30 per cent of all the buildings in the Japan. These buildings are still saleable but tend to have lower values than the newer shin-taishin buildings. Newer buildings designed with more modern and resilient methods, like the *"menshin"* base-isolation system that can withstand earthquakes of higher magnitudes, have the highest market values.

The positive outcome of the enforcement of this later code is clear. In the 1995 Hanshin Earthquake, only 0.3 per cent of the shin-taishin buildings suffered serious damage, compared to 8.4 per cent of the kyu-taishin buildings.

***Source:*** *Japan Property Central (2014).*

### *Land-use planning*

As part of wider planning responsibilities of Government and environmental management generally, regulations that support stronger zoning and land use are central to DRM practice as they limit the exposure of public and private investments in disaster-prone areas. Effective regulations can control population densities, site selection and development priorities. They can ensure the preservation of open spaces and the conservation of natural resources, or when necessary allow government authorities to acquire property located in hazardous areas (ADPC, 2011). Although regulations may be in place, policies are not always properly enforced, because of weak enforcement agencies or possibly divergent political interests (Sudmeier-Rieux and others, 2013).

### *Safety and resilience standards*

Governments frequently prioritize critical infrastructure and sectors that are crucial for the country's economy and national security. These can include such vital functions as food production, energy, public health, finance and banking, water and irrigation, communications, transportation and public safety.

Governments can enforce regulations that require the authorities who manage critical infrastructure to adopt a BCP, regardless of its ownership. As these essential services and critical industries always have some governing or oversight body, they should ensure that businesses have the required and comprehensive BCPs in place. In cases where the activities of high-risk industries such as chemicals, energy and waste management could cause potential human-induced disasters, Governments could issue regulations that require companies to purchase mandatory liability insurance.

### *Corporate law and the disclosure of business risk information*

Businesses have a responsibility to provide information about potential and actual risks that they may propagate, or which may affect their enterprise and society. Companies need to become increasingly sensitive to growing social demands for improved accountability and more transparent disclosure practices. In their best interests, businesses need to share information about the investments they make in risk prevention and reduction, as well as publicizing the losses they have suffered from disasters (box 4-6).

Box 4-6 *DISCO Corporation assures customers of continuous supplies*

DISCO Corporation is a manufacturer of precision processing tools and equipment. It has a large share of the global market and plays an important role in the supply chain of the semiconductor manufacturing industry. DISCO provides information about disaster risks and informs both customers and stakeholders about the latest disaster situations through its website and other means. It also shares its supply chain assessment standards with the public. If DISCO's supplies are threatened or become uncertain, the company informs its customers promptly, and will seek alternate suppliers to avoid losses. To reduce its own exposure to disasters, DISCO Japan maintains offices in Tokyo and Hiroshima. If a disaster disables one of them, other locations will be able to maintain customer services. When disasters occur, DISCO has a system in place to redeploy all of the company's service engineers to ensure rapid emergency repairs for customers and the supply of emergency equipment to the disaster-affected areas.

***Source:*** *UNISDR and ADRC (2007).*

Possessing and disclosing risk information are crucial initial requirements for demonstrating business commitments to DRR. Government regulators increasingly require businesses to disclose hidden risks (UNISDR, 2013b), so the protocols involved need to reflect the most appropriate policy mechanisms.

## ***The challenge of enforcement***

Despite the range of regulatory instruments available to public sector officials, determining the most appropriate means to employ for effective enforcement is a challenge in itself. Even when laws or new regulations are enacted, which clearly define the responsibilities and expected conduct of the private sector, the acceptance and implementation of them may be slow. This situation is likely to be hampered further if the laws have been drafted poorly, refer to dated regulations, or there is a lack of official enforcement procedures. These limitations may be more likely in developing countries, but sometimes business interests elsewhere are motivated to challenge enacted regulations or their enforcement through extended litigation. There also may be gaps in technical knowledge or limited dissemination of information in a country that hinders the implementation and monitoring of effective compliance programmes. As a result, some businesses may be unaware of the DRM regulations they are obliged to follow.

There are several challenges for public officials to engage the private sector in responsible and effective disaster risk governance. Laws and their related regulations need to state what behaviour is expected or prohibited and the circumstances that apply (box 4-7). For instance, does the law apply to specific conditions of threat or crisis, or refer only to specific functions of disaster management? In Indonesia, many policies are formulated to address disaster response at the time of a disaster. This limitation can be misleading for decision makers whose work entails other aspects of DRM, such as post-disaster reconstruction activities (UNISDR, 2014a).

There can be a general lack of awareness about laws' relevance to the private sector, or uncertainty may arise about their applicability in the particular circumstances of specific commercial interests. There also is likely to be reluctance on the part of the private sector to disclose information in legislative proceedings or regulatory matters. The lack of budgetary allocations dedicated to monitoring and enforcement responsibilities of public authorities can be another constraint. Any of these circumstances or similar concerns may restrict the realization of DRM activities. In Bangladesh, besides inadequate staffing and the lack of resources, administrative and financial inefficiencies have prevented the implementation of the country's technically sound DRM policies (UNISDR, 2014a).

Box 4-7 *Indonesian legal obligations for business in disaster management*

Indonesia Law 24/2007 (BNBP, 2007) cites three obligations of businesses to engage in DRM:

1. Business institutions shall adjust their activities to disaster management policy.
2. Business institutions shall be obligated to submit a report to the government or agency in charge of disaster management and to be transparent when informing the public.
3. Business institutions shall be obligated to consider humanitarian principles in performing their disaster management economic functions.

Violation by the private sector is punishable by imprisonment or fines as well as cancellation of business permit or revocation of the company's legal status.

***Source:*** *UNISDR and ADRC (2007).*

### 4.3.2 Incentive schemes

Monetary and other types of incentives can stimulate private sector engagement in DRM across the Asia-Pacific region. Businesses continue to create new risks and finance the construction of infrastructure in hazardous areas or fragile environments. Governments are, therefore, increasingly obliged to encourage the private sector to incorporate DRM into collective business practices and individual firm's strategic decisions. This presents opportunities for strengthening existing incentive mechanisms and identifying new ones.

Profitability is essential for attracting private partners, so economic incentives can be used to encourage the private sector to incorporate DRM into business practices (UNISDR, 2013b). A variety of monetary incentives can encourage business interests to make DRM investments more affordable or to make financing conditional on its use to meet minimum standards of resilience. By contrast, non-monetary incentives are generally limited to quality standards, including certifications and the assignment of public procurement and other contracts.

## Monetary incentives

In the context of DRM and public policy, monetary incentives can be used to encourage or direct business investments for increasing resilience. Some examples are suggested in table 4-2 and reviewed in the following paragraphs.

Table 4-2 *Selected monetary incentives for disaster risk management*

| Monetary Incentives | Description |
|---|---|
| Business taxes | Tax credits, deductions and exemptions provided to businesses that invest in DRM, in such areas as the construction of resilient buildings. |
| Sales taxes | Sales tax incentives typically provide an Exemptions from national sales taxes for the purchase of DRM measures (e.g. warning systems, maintenance of evacuation routes, signs and shelters). |
| Property taxes | Exemptions, exclusions, abatements and credits applied to offset the additional costs of making a structure resilient (e.g. additional seismic-resistant engineering). |
| Rebates | Encouragement for the installation of disaster-resilient features (e.g. floodproofing and redundant systems for information technology). |
| Subsidies, grants and soft loans | Promote the adoption of disaster preparedness practices (e.g. education and training in evacuation procedures), and the use of disaster risk reduction systems (e.g. warning systems, maintenance of evacuation routes and provision of vehicles, signs and shelters). |
| Loans | Financing arrangements for DRM systems or equipment, provide access to low-interest loans for integrating resilient programmes and practices into businesses. |
| Financial assistance after a disaster | Provision of assistance to individuals and companies affected by a disaster event for the purpose of relieving immediate suffering and to facilitate recovery and reconstruction. |

### *Taxation policies*

Tax relief measures are granted to adjust the distribution of resources, or to shift incentives to increase available resources for DRM, e.g. a percentage of a company's corporate tax could be contributed to a disaster fund. Governments may raise taxes for obtaining land or property in high-risk areas as a means to promote socially beneficial business behaviour. The reduction of taxes could encourage favorable rates to obtain resilient infrastructure, defined by prevailing building codes or certified standards. Providing tax rebates could be an attractive incentive for businesses that have invested in structural or non-structural risk mitigation measures (box 4-8).

Box 4-8 *The Development Bank of Japan's Business Continuity Ratings*

The Development Bank of Japan (DBJ) was the first bank in the world to offer a nationwide *"business continuity management rating."* It is awarded to companies that develop effective disaster preparedness and business continuity measures in anticipation of a disaster. DBJ offers several DRM products, such as earthquake proofing of facilities, preparation of data backup systems and financial incentives for investing in DRM. Companies undergo an auditing process of their existing DRM and business continuity measures. The results can be publicized to advertise the firm's disaster preparedness initiatives.

The DBJ business continuity rating has proven to be a practical tool for reducing resistance to companies' investing in DRM. Between the inception of the DBJ evaluation programme in 2006, and 2012, 54 companies have been awarded a BCM rating and 44.7 billion yen has been provided as DRM loans. The recognition provided by these awards and the financial benefits they produce, makes it easier for corporate leaders to make a convincing case for investing in DRM.

***Source:*** *UNISDR (2013f).*

Because of fluctuating exchange rates and their potential effects on PPP project arrangements, these collaborations tend to be more prevalent in countries with stable macroeconomic conditions (Hammami and others, 2006). For example, Japan uses a combination of regulations and tax incentives to encourage investments in earthquake mitigation, and special tax deductions for post-disaster reconstruction (box 4-8). Following floods in 2010 and 2011, Australia was able to make a rapid recovery because existing PPPs encouraged mitigation and recovery plans. They required businesses to apply for concessional loans to minimize future losses (ESCAP, 2013).

### *Subsidies, grants and soft loans*

Some measures in disaster risk management can be costly so subsidies, grants and soft loans may spur private sector engagement. Subsidies can stimulate the construction of safer infrastructure and encourage local businesses to invest in resilience enable more rapid recovery from a disaster. Examples of subsidies or partially funded grants can be beneficial for assessing, strengthening and retrofitting vulnerable housing and other structures. Subsidies can stimulate the use of standards in high-risk areas. Construction companies can use subsidies to reduce the cost of building supplies used in constructing safer structures. Banks and insurance companies can use public subsidies to provide preferential insurance, savings and credit schemes for disadvantaged communities. Governments can require small companies to implement simple BCP before receiving a subsidy or grant, providing them with training and information as part of the process.

### *Post-disaster financial assistance*

Following disasters, the Government, concerned citizens and often the international community contribute donations to ease the suffering of the affected people. Besides being charitable, there can be an economic benefit for many of the victims who may be entrepreneurs that experienced losses in their small businesses.

Most disaster assistance is usually directed to recovery and reconstruction efforts. The assistance should be used in a risk-sensitive way, with care taken to ensure that it does not create new risks.

Information campaigns and appropriate audits can be used before and after funds are provided to encourage their wise use.

The provision of financial aid to companies that had previously pursued irresponsible risk behaviour is unlikely to reduce underlying risks, but instead it will hinder accountability, and allow moral hazard problems to persist. Previous global financial crises demonstrated how some Governments have reinforced socially irresponsible commercial practices by restoring financial institutions that had directly contributed to the disaster. While justifications are made, primarily by the affected companies, such rescue polices undermine the competitiveness of other compliant businesses and has a negative impact on long-term economic efficiency. It is a sound public policy to require businesses that create potentially costly, to bear the costs of their actions.

## ***Non-monetary incentives***

In addition to macroeconomic conditions, investors are attentive to the institutional qualities and the regulatory environments in which they operate. Weak institutions and poorly enforced regulations create risks that decrease incentives for investors to join PPPs. Strong public institutions and the effective rule of law in society are conducive for creating effective PPP arrangements (Hammami and others, 2006). These expectations can be challenging for developing countries, where compliance issues may be problematic and enforcement is costly. In these situations, there is a need to combine regulatory measures with more assertive efforts to provide additional non-monetary incentives to private parties (ESCAP, 2013) (table 4-3).

Table 4-3 *Selected non-monetary incentives for disaster risk management*

| Non-monetary Incentives | Description |
|---|---|
| Procurement and contracts | Incorporate resilience requirements into tenders to benefit certified companies demonstrating prior risk-sensitivity. |
| Certification schemes and awards | Reward performance and increase organizational visibility; expand schemes in other relevant sectors, such as environmental management. |
| Technical assistance and resource transfers | Provide technical assistance, and transfer knowledge or skills that convey mutual benefits to suppliers and receivers. Stimulate new business opportunities and innovation related to emerging needs and societal expectations for DRM. |
| Reputation | Improve business or public reputations by participating in beneficial activities, such as certification schemes and CSR programmes. |
| Business opportunities | Create new opportunities for companies to increase their profits or create goodwill among the public. |

### *Procurement and contracts*

Public procurement and the issuance of contracts can serve as incentives to engage the private sector in DRM. By including beneficial DRM attributes as desirable criteria in tender requirements or associating the contract to commercial resilience, successful bidders will be encouraged to meet higher standards.

### *Certification schemes and awards*

The adoption of certification schemes, measures of commercial recognition or adherence to international standards can promote effective PPPs. This is a common practice in other commercial areas such as the construction of energy-efficient buildings, forestry and sustainable tourism (Johanesson and others, 2013; FM Global, 2010; Mahon and others, 2012). An urban sustainability certificate could be expanded to include DRM interests, by considering an assessment of drainage, runoff capacity, flood risk and heat absorption (UNISDR, 2013c).

Award programmes can be used to recognize business achievements in reaching performance objectives, productivity improvements or innovation in DRM. Awards and public recognition of "approval" can be used in marketing and to raise organizational visibility. By pursuing certification and award schemes, businesses can generate faster growth and greater returns on their investments, as these strategies become increasingly valued by customers (box 4-9).

Box 4-9 *"Tsunami Ready" certification encourages partnership in Indonesia*

To improve the tsunami preparedness of the hotel industry, the Indonesian Ministry of Culture and Tourism has cooperated closely with the Bali Hotels Association, a commercial association of more than 120 hotels. Together, they developed the "*Tsunami Ready Toolkit*".

The toolkit assists hotels prepare for tsunamis. It consists of self-assessment guidelines, standard operating procedures, background information and common standards to create evacuation signs for use on the properties. It also includes a checklist for critical information (e.g. information sources and interpretation, evacuation procedures, evacuation routes and shelters, community relations, cooperation and post-tsunami preparedness) which enables hotels to assess their state of preparedness. Tsunami Ready hotels are certified when they meet the tsunami safety standards for the hotel industry as outlined in the toolkit. Certified hotels receive a logo and are listed on the Tsunami Ready website.

The AYANA Resort and Spa in Bali became Indonesia's first fully certified Tsunami Ready hotel in April 2011. This designation has become a competitive advantage and a marketing tool. Other hotels have realized these benefits, including The Hard Rock Hotel, The Haven Seminyak, Sanur Paradise Plaza Hotel & Suites, Anantara Seminyak Bali Resort & Spa and the Marriott Courtyard Nusa Dua.

***Source:*** *Kesper (2008).*

### *Technical assistance and resource transfers*

Public and private sector entities often may have knowledge and skills beneficial to one another. A public organization may have the technical resources to design and implement DRM strategies that can be traded for access to a private company's marketing assistance. This type of collaboration offers both parties the chance to explore potential business opportunities, access emerging markets or new clients. It also can encourage innovations for responding to emerging needs and meeting the growing societal expectations for DRM.

*Reputation*

Additional non-monetary incentives could also include an improved Good professional and commercial reputations are desirable assets for any organization, so enhanced public impressions derived from philanthropic actions or through conventional CSR in community, disaster-related activities are advantageous. As consumers become more demanding, the ability for a business to demonstrate compliance with safety standards makes good business sense. Improved safety for clients, evident attention devoted to customer care, or protection for their assets provided by risk-sensitive services can be powerful marketing tools to gain a competitive edge through the positive corporate images they convey.

*Business opportunities*

It is becoming more widely recognized that engagement in disaster-related circumstances can present new opportunities for companies to increase their profits while also demonstrating their "corporate citizenship". The benefits can even extend to the communities where the business operates.

Before a disaster occurs, companies' decisions to invest in DRM activities can limit disaster damages and losses, maintain business services, build public confidence in its resilience, and possibly develop new business opportunities. By creating adaptive or mitigating solutions to risk, businesses may be able to reach new markets or strengthen their market position. The development and installation of communications systems for disaster warnings and response activities, using weather-indexed agricultural insurance and conducting emergency response training programmes are products and services that can strengthen resilience. A joint venture between UNDP and Deutsche Post DHL, "Get Airports Ready for Disasters", is designed to identify and fix problematic issues that could delay emergency assistance in a crisis. It prepares airport workers for disasters, training them to cope with surges in air traffic and other logistic needs to make aid delivery faster and more efficient. The initiative has been implemented in Asian disaster-prone countries including Bangladesh, Indonesia, Nepal, and the Philippines, training more than 300 people at more than 21 airports (UNDP, 2014).

New business opportunities offer possibilities for companies to display their corporate citizenship. After the GEJ earthquake in 2011, Apple invited Tokyo residents into its stores to watch the news, communicate with their families and recharge their devices. Stranded employees and their families were invited to sleep at the stores or provided hotel rooms and private transportation. These considerations cost little and may only have minor individual effects, but the overall value received from gestures of goodwill is considerable and unlikely to be forgotten. As a by-product, they may also provide a competitive advantage where proactive considerations are highly valued (Diermeier, 2011).

The disrupted supply chains resulting from the 2011 floods in Thailand opened unexpected business opportunities for companies based elsewhere. Other business opportunities have been developed after disasters, as in the case of new crop insurance products that were created or the construction of new forms of disaster-resilient infrastructure (Brinded, 2013). At the World Conference on Disaster Management in Toronto, Canada in 2013, speakers suggested the temporary use of mobile homes in remote communities and the deployment of charging stations for personal electronic devices to disaster sites (Profit, 2013).

Box 4-10 *Public-Private Catastrophe Risk Fund, Thailand*

The 2011 Thailand floods proved to be one of the world's most costly disasters in terms of insurance payouts. Premium rates have increased sharply, and limits have been imposed since then. Many property insurers and reinsurers withdrew from the markets because the high level of insured losses. This made flood insurance difficult to obtain at any cost. Consequently, Thailand's Office of Insurance Commission established a THB50 billion ($1.65 billion) catastrophe fund to offer competitive insurance coverage for disasters related to natural hazards. This catastrophe fund acts as primary reinsurer and purchases reinsurance to increase capacity. This risk-sharing scheme between the Government of Thailand and the Thai non-life insurance sector offers protection for households, SMEs and industrial factories.

***Source:*** *Adapted from Meghan and Stahel (2013).*

### 4.3.3 Role of the public sector in insurance and reinsurance

The intended attributes of disaster risk financing and transfer instruments discussed in chapter 3 pose considerable challenges for Governments. However, as insurance can be a powerful means for businesses to invest in DRM, some examples of productive environments for DRM financing and insurance are presented below.

#### *Addressing market failures*

Governments can influence insurance markets in several ways to avoid or minimize market failures (box 4-10). Some options of escalating public sector interventions follow:

- Become a contingent provider of liquidity for insurance companies through previously arranged loans. They would try to relieve potential financial pressures that insurers could face when settling claims after severe disaster losses.
- Act as a guarantor for liabilities arising from disaster risks that usually have an upper limit.
- Act as a reinsurer to support national insurance companies that cannot obtain reinsurance at a reasonable cost in the national or international markets.
- Become a direct insurer when the private sector is unable or unwilling to provide insurance. While there is no risk sharing, the private sector undertakes the marketing, premium collection and settlement of claims through their existing network for efficiency, but on behalf of the Government.

#### *Reliable information*

The availability of reliable and consistent data about hazards, exposure and vulnerabilities is crucial to reducing uncertainties and lower the costs of risk financing and transfer tools. Often, data are not shared among research institutions, private companies (e.g. insurers), state agencies, local governments and end users. Governments should take a lead in communicating location-specific information as empirical evidence shows that adaptation outcomes are influenced by location-specific factors (Aakre and others, 2010).

*Multilayered insurance responsibilities*

Arrangements that allow public and private sectors to share the differential roles and responsibilities in transferring risk could produce effective solutions. To be successful, they cannot undermine the principal expectation that the fundamental responsibility for protection lies with the exposed parties. Litan (2005) proposed a novel approach to disaster insurance based on four layers for bearing different magnitudes of risk. The first level of risk needs to be borne by the people most likely to be affected by a disaster to encourage them to adopt prior mitigation measures and to avoid moral hazard problems. The second level of risk should be assumed by private insurance companies. Private reinsurers and capital markets can cover the third levels. The fourth level of remaining or residual risk can then be borne by the public sector, multinational pools and international financial institutions.

*Linking insurance with building codes and industry standards*

Governments can encourage insurance companies to offer discounts on premiums for businesses that meet specified standards in business continuity management, building codes or other recognized risk reduction parameters. Risk-based pricing schedules could be an attractive alternative to accommodate people who are exposed to a risk, but who have reduced their potential losses by investing in resilience. Such arrangements would be more justifiable than uniform or "flat" pricing strategies that apply to all policyholders in the same location regardless of their actual levels of exposure.

*Linking risk reduction investments to financial and property strategies*

Governments need to make the adoption of risk mitigation measures financially attractive to property owners. When banks hold a financial interest in property through a mortgage or loans, with appropriate public sector support, they could issue a loan to enhance the resilience of the asset with a payback period identical to the life of the mortgage. The terms can be arranged so that there are financial benefits to the bank, the borrower, the insurers and even the reinsurers as the overall value of the property increases as the risk is reduced (Kunreuther, 2006).

An alternative strategy could consider Governments' feasibility to subsidize interest rates for loans that are used to finance structural risk mitigation measures. Other subsidies could be used to reduce premiums for individuals who become uninsurable because of risk-based pricing. Governments could advocate for the use of risk-based pricing in insurance, which provides a more equitable degree of fairness to both customers and insurers. In extreme cases, they could compel businesses to purchase insurance when their activities present serious unmitigated risks to society.

### 4.3.4 Disaster risk information

Disaster risk information (DRI) essentially refers to the collation and consolidation of knowledge needed to understand, communicate and act on the risks associated with a particular hazard. DRI needs to capture and reflect the form and dynamics of the hazard, as well as the vulnerability and the exposure of the assets and population threatened by it.

Prior to a disaster occurring, there is a need for DRI to involve mapping, assessing and monitoring functions to build resilience against the risk. During a disaster, information such as space-derived data

can be used to assess disaster-affected areas and their resulting situations for emergency response and recovery. Information and communications technologies (ICT) are essential for supporting necessary emergency services and other DRM activities. During recovery after a disaster, RDI provides the data and information required for damage and the loss assessments that are necessary to rebuild in a more resilient manner, complementing earlier risk assessment and hazard maps.

The public sector plays a critical role in identifying regional and local deficiencies in disaster management strategies, which could potentially be improved by accessing private sector information and experience. There is often a perception that DRM is the responsibility only of government, but since supply chains can be disrupted by disasters globally, sharing information among different sectors of the economy has become imperative for reducing risk.

While large corporations are fully conversant with these current requirements, SMEs often lack the capacities to undertake their own risk analysis (ESCAP, 2014). Suitable capacity building programmes for DRI, and reflecting business regulations and operational standards specifically focused on SME business environments can help overcome this issue. SMEs often lack expertise and technical abilities to assess risks because of their smaller size and fewer employees. As they must remain focused on their business operations, SMEs frequently have only a limited view of their exposure to potentially serious disaster risks. These issues highlight the importance in raising the awareness of SMEs and assisting them in becoming aware of the opportunities that they can pursue to access affordable DRI. Some larger corporations are beginning to support their SME suppliers through training and assistance in conducting risk assessments as important elements of their supply chain resilience and business continuity strategies.

Despite BCM's growing practice, the destruction of the basic infrastructure needed to operate a business, such as roads, electricity and water, is beyond the control of any individual corporation. As discussed in chapter 3, Japan has proposed the extended concept of area business continuity plans, which include the analysis of hazards and the specific characteristics of local businesses. Reliable and easily accessible DRI is central to developing any effective BCM or plans. Governments are developing GIS portals and using modern information services for planning and disaster risk management. These elements are combined in the creation of "geo-portals", which provide timely information to decision makers during critical periods of a disaster. Geo-portals for disaster risk reduction and response exist in China, the Cook Islands, Mongolia, Nepal, and Thailand, among other countries. When they incorporate the appropriate information, these portals also can be used for urban and land-use planning by assessing how infrastructure, people and areas might be exposed to hazards.

ESCAP provides a regional platform for countries to share satellite images to be used by at-risk, low-capacity countries exposed to significant disaster risk. The initiative has now been expanded to drought monitoring and early warning in six pilot countries. At the onset of a disaster, ESCAP facilitates access for affected countries to obtain high-resolution satellite images through the International Charter on Space and Major Disasters and with the collaboration of other specialized remote-sensing agencies. Businesses certainly can benefit from this generous exchange of information and collaboration with the public sector by building a stronger economy.

There are considerable opportunities for the private sector to contribute information as well if businesses are prepared to use them. Research on aggregated mobile phone global positioning system (GPS) data reveals valuable information about the location and movement of people, which

can be especially useful during the disrupted conditions during a disaster. This information can be invaluable for planning disaster risk reduction, yet it is prohibited in more developed countries because of privacy laws. Options could be explored that allow governments to utilize this information in an aggregated form for the benefit of the population without jeopardizing the privacy of individual citizens.

It is possible to visualize and analyse data on many scales, but in practice, the scale of the input determines the accuracy of the analysis. A foreseeable problem with DRI is that data sets will become too large or complex in the future, making them difficult to use with traditional data processing and storage applications. Because there are these and other challenges related to the analysis of information, including its capture, curation, search, sharing, storage, transfer, visualization, and information privacy, new techniques will be required continuously. Currently, "big data" commercial analysis and applications, and particularly "crowdsourcing" and other features of social media are being developed rapidly to provide relevant opportunities for DRM applications.

Geoscience Australia is currently working on developing a tool to streamline and simplify the massive amount of data available for planning, risk reduction and other purposes. Satellite data can be used to assess anything from drought-affected areas, water resources and pollution to soil quality. When it is coupled with social, economic and physical data concerning infrastructure, land use, population and physical hazards, this information can be a powerful tool for long-term planning. The concept of a "data cube" is being developed to combine data from multiple sources for easier access and efficient use by governments, businesses and academia. In effect, remotely sensed Landsat data units ("tiles") are stacked in time sequences covering the same area. These multiple layers form a "cube" of combined Earth observation data (NCI, 2013). The data cube makes this comprehensive information available as interactive information, which allows users in businesses or governments to generate economic activity and employment or assess risk in their business operations. While this is another example how government information can benefit the private sector, businesses also should be forthcoming in assisting governments with their own contributions, given freely.

The power of privately owned technology for disaster risk management has been widely recognized since the Haitian earthquake in January 2010. Technology can generate a real-time traffic map using data gathered from moving vehicles and then provide it to the public quickly through the internet. Similarly, observation data from flood sensors can be distributed to car navigation systems and smartphones. Mobile telephones have rapidly become very useful GPS platforms to relay data about the location and movement of people (World Bank, 2013), as well as recording and transmitting other information about local conditions during a disaster. Another business application of technology during a disaster occurred when satellite operator Thaicom assisted Advanced Info Service to establish an emergency mobile phone network during the 2010 floods. It was able to do this through the company's satellites and the commercial IPSTAR backup communications network after the severe flooding in southern Thailand interrupted all mobile phone networks in the area (IPSTAR, 2010).

The use of DRI should be consistent with the provisions of the International Charter on Space and Major Disasters that provides the basis for a unified system of space data acquisition and data delivery to countries affected by disasters. Similarly, DRI should complement the spirit, purpose and objectives of the Tampere Convention on the Provision of Telecommunication Resources for Disaster Mitigation and Relief Operations, especially when the provision and availability of telecommunications equipment extend across international boundaries.

### 4.3.5 Raising awareness raising and building capacities for smaller businesses

Chapter 3 discusses the importance of SMEs to the economy of the Asia-Pacific region, contributing to community livelihoods, supply chains and economic growth. They comprise over 90 per cent of private enterprises and employ over 50 per cent of the region's workforce (APEC, 2014). However, SMEs are often seriously underprepared when disasters happen. Globally, 25 per cent of SMEs never reopen after a major disaster (WEF, 2014). In Thailand, 240,000 small businesses in 32 provinces were affected by the 2011 floods (APEC, 2012). Among the 337 SMEs, which ceased operations following the Great East Japan earthquake in the same year, 90 per cent of them were bankrupt within six months (ADRC, 2013).

Box 4-11 *Strengthening resilience in the Republic of Korea*

In 2007, the Government of the Republic of Korea initiated efforts to improve the country's private sector DRM provisions through the Assistance to the Autonomous Activities for Disaster Mitigation Act. This legislation was administered by the National Emergency Management Agency (NEMA) and established comprehensive disaster management standards for the country.

Organizations that adhered to the standards and achieved certification could benefit from discounted insurance premiums, tax reductions and financial support for the implementation of DRM programmes. The act facilitated the establishment of the Association of Business Continuity and Disaster Mitigation for increasing the exchange of knowledge among enterprises. Since 2013, NEMA has built upon this progress by encouraging businesses to obtain disaster mitigation certification so they can benefit from BCP advice provided by authorized training agencies.

***Source:*** *Adapted from APEC (2014).*

A 2012 survey revealed that only 13 per cent of SMEs have a business continuity plan, and more than half of the organizations sampled were unaware of the business practice (ADRC, 2012). These facts illustrate the need to raise the awareness of risks facing smaller businesses and to strengthen their disaster risk management capacities. Governments can provide important support to improve their capacities. They can formulate DRM policies at the national level by developing and implementing regulatory legislation to ensure that businesses adopt DRM measures. Governments' efforts to encourage the creation of PPPs can further stimulate SMEs involvement in DRM activities.

Box 4-12 *Web-based support for resilient small businesses business resilience resources in New Zealand*

Following the major earthquake near Christchurch, New Zealand in 2011, the New Zealand Government strengthened DRM provisions for SMEs, which had been seriously affected. Auckland City Council formed a focus group composed of SME representatives, leaders from larger private sector organizations and council members who identified the need to promote BCP among SMEs.

A business resilience website (www.resilientbusinesses.co.nz) was selected as the primary medium to engage SMEs. The initiative was championed by large companies and promoted by chambers of commerce and national business associations. The website was an adaptable and cost-effective resource that provided organizations with open access to user-friendly, interactive tools to assist them in building BCPs tailored to meet SMEs' needs.

***Source:*** *Adapted from APEC (2014).*

National Governments can provide practical assistance to support local authorities and communities to build their resilience by training SMEs in such activities as conducting risk assessments, implementing business continuity programmes or organizing public awareness. Governments can lead efforts to facilitate SMEs access to relevant data and information regarding disaster risk. These resources will be essential if smaller business respond to Government incentives to obtain financial assistance for SMEs to increase their DRM practices. Despite the important roles that Governments can play in improving the resilience of businesses, public officials often lack the necessary abilities to provide the comprehensive support needed by SMEs to address DRM issues. This is particularly the case in developing economies where interest in BCM is growing, despite a current lack of clear policies, resources and expertise. International partners can support national Governments improve the resilience of SMEs by providing policy guidance and technical assistance at national and regional levels. Numerous international partners have demonstrated their commitment to strengthening private sector disaster resilience in the specific needs of SMEs. Their efforts contribute to developing tools and guidelines, and building capacities through training and guidance. They advance DRM by engaging with national bodies responsible for the growth and vitality of SMEs and their association with chambers of commerce and industry as well as departments and ministries responsible for DRM. Furthermore, international partners establish important linkages for SMEs with influential business platforms such as the APEC Small and Medium Enterprises Ministerial Meetings and ESCAP's Asia-Pacific Business Forum (box 4-11, 4-12, and 4-13).

Box 4-13 *ADPC trains trainers for smaller enterprises' continuity planning*

The Thailand floods in 2011 underlined the need to strengthen disaster resilience across the country's private sector and particularly for SMEs since they were so severely affected. Working with Thailand's Office of SME Promotion and the Department of Disaster Prevention and Mitigation, ADPC enlisted the support of international organizations to prepare a training programme to develop business continuity planning for Thai SMEs.

Using training material developed with APEC, ADPC conducted two sessions to train trainers in early 2014. Representatives from government agencies and other public and private organization officials involved with BCP activities participated in the training. It was designed to provide business continuity tools and knowledge that participants could integrate into the activities of their organizations and then disseminate further to SMEs across the country.

Trainers from the National Economic and Social Development Board, the National Food Institute, the SME Bank, the Thai Chamber of Commerce and the Thai Industrial Standards Institute completed the course. The range and national standing of the organizations represented demonstrate the value the organizations placed on strengthening the DRM capacities of national institutions as well as smaller enterprises.

***Source:*** *ADPC (2015).*

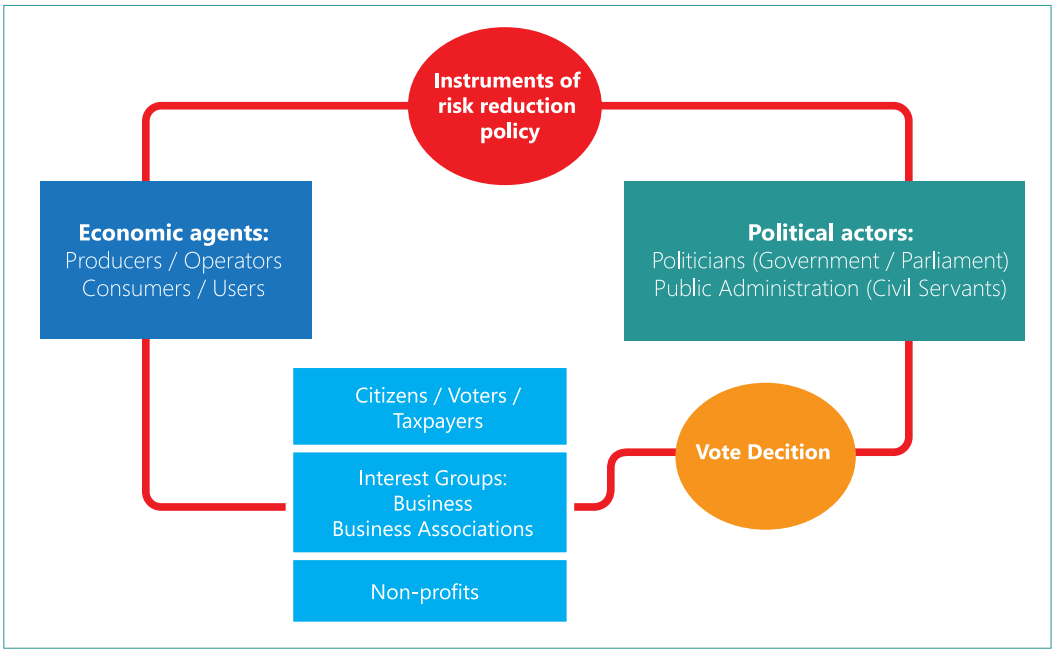
## 4.4 Policymaking challenges and opportunities

Besides being the destructive events that define them, disasters also can be powerful catalysts for constructive change. They "open windows of opportunity" during which new DRM policies, strategies and measures can be introduced to strengthen the resilience of society. Global and regional intergovernmental forums, such as the WCDRR, the AMCDRR or ESCAP, equally represent important policy opportunities. They facilitate efforts to elaborate the roles of both the private and public sectors, along with those of academia and non-profit organizations in DRM for strengthening resilience. This function and the collective commitments it stimulates, pave the way for national Governments to pursue relevant policy changes. This section presents several challenges that can be addressed beneficially by taking advantage of current opportunities.

### 4.4.1 Political economy issues of disaster risk reduction

From a public sector perspective, there are several challenges for making and adopting policies related to disasters. Some are rooted in the "times of normalcy" when DRM and the long-term benefits of resilience are not necessarily a priority either in societies or among the populations of many countries. Policymakers often struggle to gain either political or social support for investing resources in any disaster risk mitigation measures. The subject is simply not at the forefront of public thinking. National and local government inertia and bureaucratic inefficiencies arising from governmental cycles and the terms of office for elected officials also can constrain more far-sighted decision-making.

Figure 4-4 *Political economy model of disaster risk reduction*




***Source:*** *Adapted from Weck-Hannemann (2000).*

Figure 4-4 illustrates only some of the many stakeholders, interest groups, beneficiaries and economic interests that determine the complex political economy in which policymakers operate. It is evident that many interests influence the decisions of public officials charged with DRM planning and the viability of resulting actions.

A local or municipal government agency may "rationally neglect" investments for what it considers to be low-probability events (Sobel and Leeson, 2006). It can be difficult for government officials to appreciate the value of an investment that may only pay off in decades. Naheed Nenshi, the mayor of Calgary, Canada discussed this issue at the World Economic Forum's (WEF) annual meeting in 2014, following the floods that had affected his city a year earlier. He related the dilemma of considering large and costly DRM investments for long-term mitigation against the short political cycles of an incumbent leader's tenure in government (WEF, 2014). Retaining assured political support and budgetary prudence regularly take precedence over public interests (Daniels and Trebilcock, 2006; Sobel and Leeson, 2006).

National, provincial, state or local political administrations may decide to invest in projects that can provide more immediate benefits to taxpayers, but there is typically a bias in the decision towards current rather than future benefits. This reasoning often results in limited investment in DRM by the public sector (Sobel and Leeson, 2006).

### 4.4.2 Preferential mitigation measures

In cases where the public sector does choose to implement disaster prevention and mitigation measures, political considerations can influence the types of intervention that are selected. In the World Development Report, Kelman (2014) contends that structural mitigation measures take precedence over non-structural ones as "political capital is rarely gained from implementing DRM, except in cases where it is visible and tangible". Decisions therefore favour large, physical structures such as floodwalls, levees, avalanche barriers or retrofitting buildings that can display the expenditure was used to protect the public.

Conversely, the OECD (2013) states, "continuously adapting structural measures to withstand ever greater disruptive events may neither be economically feasible nor socially viable". Often, non-structural measures can provide an effective, less costly and more sustainable alternative to structural mitigation. Policy makers need to consider the benefits of non-structural means that can complement tangible structural ones, but there will continue to be a demanding effort required of decision makers to convince prevailing political sentiments.

### 4.4.3 Policy opportunities for the private sector

The private sector has a central role to play in addressing areas of DRM where the public sector lacks funding, technical or human resources or sufficient innovation to provide effective solutions. A common barrier for public officials to overcome is to look beyond smaller, incremental changes to existing situations. Existing ways of operating or addressing issues are "intellectually feasible" to the extent that "the status quo dominates other forms of organizational decision-making" (Dunleavy and O'Leary, 1992). Comprehensive changes Measures that are more comprehensive may be better suited to a vastly changed set of social circumstances or physical conditions posed by disaster risks, but they are more likely to require consensus on the need for new strategies. In the case of DRM, this would involve not only policy makers, but also other stakeholders and beneficiaries, supporting the implementation of new disaster interventions (Twigg, 2007). The role of the private sector can be beneficial as businesses often consider more innovative or expansive perspectives of risk.

Commentators on disaster circumstances frequently suggest that windows of opportunity open

for enacting significant changes in DRM policy following disaster events. Disasters bring into sharp focus the need for change, emphasizing failings and the limitations of existing systems. They provide opportunities to redress neglected aspects of disaster risk reduction. (Birkmann, 2008; Manyena, 2013) (box 4-14)

Box 4-14 *Disaster provides a window of opportunity: Sri Lanka after the Indian Ocean tsunami*

Following the devastation caused by the Indian Ocean tsunami of 2004, the Government of Sri Lanka took advantage of the public and political recognition of the need to overhaul and adapt national disaster management strategies. Legislative changes and a restructuring of the agencies and institutions responsible for DRM were part of a long-term Sri Lankan response to the tsunami. Six months later in May 2005, the country enacted the Disaster Management Act (No.13) providing the legal basis for a significantly revised DRM system in Sri Lanka.

The act established a National Council for Disaster Management to provide high-level input into DRM planning and created a Disaster Management Centre with offices in each of the country's 25 districts. The country's first comprehensive national disaster management plan, Towards a Safer Sri Lanka, A Road Map for Disaster Risk Management was published in December 2005. It was a direct result of the tsunami, which had struck the country a year earlier.

***Source:*** *Sri Lanka Disaster Management Centre (2005).*

Commentaries about emergent policy opportunities following disasters have tended to emphasize public sector experiences. However, Sandra Wu, the Chair and Chief Executive Officer of Kokusai Kogyo in Japan and the Chair of UNISDR's PSAG, described how the GEJ earthquake and tsunami in 2011 led to an important change in Japan's DRM planning. In her view, both the public and private sectors shared the recognition that "saving lives was more important than protecting the status quo" (WEF, 2014). Policymakers revised their earlier reliance on structural mitigation by adopting the greater value in combining both non-structural and structural approaches. This experience capitalized on opportunities to enact changes in DRM policies to strengthen resilience, safeguard lives and protect infrastructure and economic activity in the event of future disasters.

Disasters can also provide opportunities for policymakers to initiate legislative changes and to enhance budgetary allocations. Legislative initiatives can create new laws or improve the enforcement of existing ones. The heightened awareness of disaster risk after a disaster can stimulate political and public support to attract the funding required to enact changes.

Regardless of the actions taken, policy modifications and revised operational activities influenced by a disaster are inherently reactive responses to the destructive events. Intergovernmental forums should seize other opportunities to become more proactive in adopting new strategies for strengthening resilience. In this way, windows of opportunity can be used by the public sector to overcome the challenges associated with introducing improved DRM understanding and practices in the private sector and throughout society.

# Chapter 5

# Collaborative Arrangements

In recognizing that "DRM is everybody's business", collaboration among stakeholders is essential to address the scale and complexity of the work involved. Many different types of collaboration shape the creation and effectiveness of partnerships that span various interests to support disaster risk-sensitive investment.

There is a need for the public and private sectors, civil society organizations, as well as academia, science and research institutions to work more closely and create opportunities for collaboration and allow businesses to integrate disaster risk into their management practices. Such collaborative working relationships foster productive multisector partnerships. Engaging businesses in disaster risk management requires individuals, institutions and organizations from various sectors and with different types of experience drawn from their national, regional or global activities.

This chapter presents the purpose, benefits and challenges of partnerships between businesses and other stakeholders involved and considers ways that can advance the collaboration involved. It suggests a multisector partnership framework and considers possible bilateral arrangements between business and the public sector (conventionally, "public-private partnerships"), non-profit organizations and academic institutions. These relationships are analysed as the various associations conducted at national, regional and global levels accommodate business interests in different ways.

## **5.1** Multisector partnerships and collaboration

Significant research has studied how businesses, public sector agencies and non-profit organizations relate to each other to address social issues. There has been less analysis done about how multisector relationships try to solve social problems and particularly those arising from disaster circumstances. The Sendai Framework stated, as one of its guiding principles that coordination mechanisms within and across sectors, with relevant stakeholders at all levels, are key to the success of disaster risk reduction. They require the full engagement and a clear expression of responsibilities among public and private stakeholders, including the business sector and academia. Shared interests and sustained commitments are crucial to ensure mutual outreach, partnership and complementarity in roles, accountability and follow-up.

Kong (2013) examines this issue in terms of recovery from a disaster and concludes that it may be more effective when the three sectors collaborate. The benefits of collaboration among the sectors can be realized in other aspects of DRM if suitable frameworks exist to motivate common efforts.

Table 5-1 *Benefits from multisector collaboration*

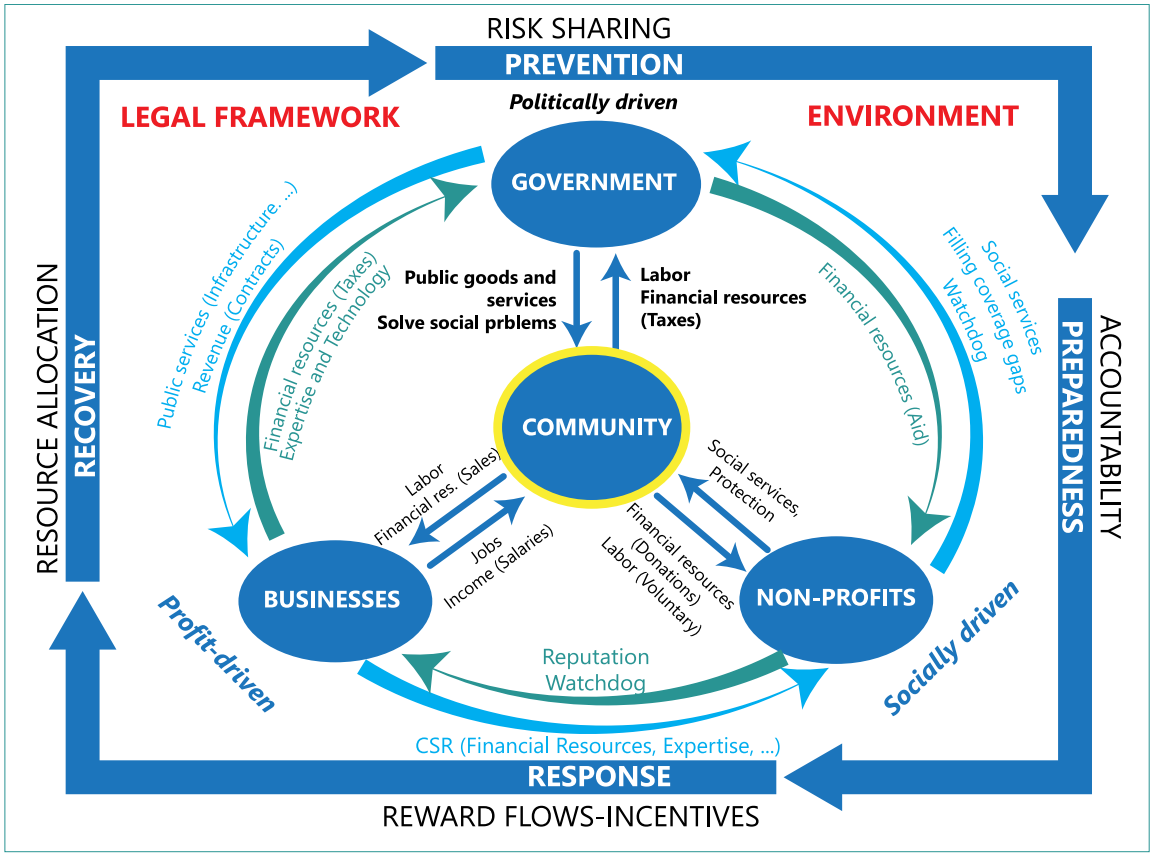
| | Business | Non-profit organizations | Government |
|---|---|---|---|
| Organizational reputation | • Enhance corporate reputation<br>• Create customer loyalty<br>• Gain distinctive identity<br>• Counteract negative image | • Provide legitimacy<br>• Promote non-profit brands<br>• Generate financial resources<br>• Attract contributions<br>• Attract volunteers | • Improve government or political image<br>• Develop community trust<br>• Generate political commitment |

| | | | |
|---|---|---|---|
| Responsibility and account-ability | • Create social value in addition to economic value<br>• Create trust among stakeholders<br>• Act in socially responsible ways | • Fulfil their social mission<br>•<br>• Increase the number and scope of community development projects | • Protect vulnerable citizens<br>• Solve social and ethi-cal issues<br>• Manage environmental crises<br>• Regulate social pol-icies |
| Relevance to organization's goals | • Increase equity value<br>• Gain competitive advantage<br>• Increase economic profit<br>• Achieve social profits<br>• Act in socially responsible ways | • Gain financial support<br>• Solve social problems<br>• Assist communities to become more resilient<br>• Generate more awareness | • Reduce political and economic pressures of social problems<br>• Solve social and ethical issues<br>• Protect citizens |

***Source:*** *Adapted from Kong (2013).*

Table 5-1 outlines some benefits that multisector collaboration can provide. Businesses can improve their reputations by extending them beyond matters of profit to include social issues important for community development. A company's good reputation will likely increase sales and revenue. For non-profit organizations, strategic collaboration can potentially assist them in generate higher revenues, which can improve their self-sufficiency (Guo, 2006). This security can then allow them to fulfil more of their social objectives. The Government is likely to benefit from multisector collaboration by reducing its social expenditure and solving social problems more effectively and efficiently. This productive relationship can increase their reputation and political support (Swartz, 2013).

Figure 5-1 *A flow chart of a multisector partnership framework*




***Source:*** *Created, based on Guo (2006) and Kong (2013).*

Figure 5-1 is a flow chart detailing a multisector collaboration framework, where the primary relationships among the government, businesses and non-profit or civil society organizations are represented. Significantly, the community is at the core of the framework. The key concepts involved are the incentives and rewards connecting partners, an appropriate allocation of resources among them, and a fair distribution of the risks.

Any effective multisector partnership requires incentives and rewards for the stakeholders even though they will vary among them. Businesses may expect a burnished reputation from non-profit organizations, new contracts from the Government and increased revenue from the community to achieve their profit-driven goals. Non-profit enterprises and civil society organizations anticipate contributions from businesses and the community, or grants from the government to continue their work addressing social objectives. The Government can seek technical expertise from the private sector and a community-based perspective of social issues and local awareness from non-profit organizations. Any successful partnership needs to be able to deliver beneficial values to the individual members that they may be less likely to obtain on their own.

Resources and their fair distribution among members are essential for sustaining a partnership. Multisector partnerships try to balance the availability of goods and services or the use of technical expertise from the private sector with the local knowledge and implementation capacities of non-profit organizations. There is a decided benefit in structuring partnerships so that each member provides its particular competence and can capitalize on its relative value to the wider group by doing what it does best. Partnerships also need to share their collective risks fairly and equally. This implies demonstrating accountability in terms of both sharing the consequences of disaster risk, and the corresponding responsibility to reduce it through one's capabilities. More specifically, the members of multisector partnerships need to assume their own risks in fulfilling the partnership agreement to conduct the DRM project activities. These operational risks may be financial ones, have environmental consequences or be related to public safety. Regardless of their nature, the risks need to be distributed fairly among the members of a joint endeavour. All of the stakeholders in multisector partnerships need to abide by applicable laws and regulations and remain keenly aware of their shared responsibilities regarding the natural and social environments in which they are acting. Equally, Governments should ensure that prevailing laws and regulations do not hinder DRM activities (box 5-1).

## ***Coordination in multisector partnerships***

A study of successful partnerships conducted by R3ADY Asia-Pacific and Mercy Corps Indonesia in 2015 emphasized the importance of ensuring the clear understanding of partners' roles. A common understanding of the coordination structure and internal communication procedures is essential for smooth operations. The responsibilities need to be defined carefully and translated into agreed functional roles from the beginning. The designated functions should be compatible with each participant's abilities and consistent with their organizational motivations. Initial efforts to detail members' respective relationships, interests, competencies and operational roles may forestall later misunderstandings.

A high level of commitment and mutual trust is necessary to ensure that the partnership survives initial challenges and can grow from the partners' strengths rather than being disrupted by them. Evidence shows that partnerships that enjoy strong institutional backing from senior management are more likely to be effective (R3ADY Asia-Pacific and Mercy Corps Indonesia, 2015).

Box 5-1 *A multisector partnership for early warning in Sri Lanka*

In Sri Lanka, the Disaster Management Center (DMC) centralized national DRM initiatives to implement the HFA since 2005. A public-private partnership of the DMC, the telephone service provider group Dialog Telekom PLC and the University of Moratuwa launched the Disaster Early Warning Dissemination System in 2008. The MOU between the organizations allowed the DMC to use a private network to disseminate messages across the country *"for the benefit of the public"* through messaging services, cellular broadcasting technology and alarm devices. This collaborative arrangement substantially improved the early warning capacity of the DMC.

***Source:*** *UNISDR (2014b).*

## **5.2** Public-private partnerships

The Sendai Framework attaches importance to PPP and calls for the promotion and support of collaboration among relevant public and private stakeholders to enhance the resilience of business to natural disasters.[1]

Public-private partnerships are medium to long-term arrangements between public and private sector interests, where designated tasks or responsibilities traditionally undertaken by the public sector are undertaken or shared by the private sector for joint benefits. The European Commission defines a PPP as "the transfer to the private sector of investment projects that traditionally have been executed or financed by the public sector" (European Commission, 2003). The Asian Development Bank defines PPPs more generally as "a range of possible relationships among public and private entities in the context of infrastructure and other services" (Asian Development Bank, 2008). PPPs have been used to finance and implement a wide array of projects including energy and water infrastructure, hospitals and medical services, education, airports, and seaport container services. While the emphasis has often been on infrastructure, PPPs are now being used in a variety of public services in many countries. They are increasingly recognized as effective means for countries to reduce public spending while enabling public services to be provided at less cost and with greater efficiency.

The construction of a toll road is a typical example of a PPP, where both the public and the private sectors share risks. The acquisition of land is the responsibility of the Government, while the private sector builds, operates and maintains the toll road for a specific period. The public sector can have the private sector build and maintain the road, which under more routine circumstances would be a responsibility of the public sector. In return, the private sector can generate revenue by collecting tolls.

Public-private partnerships are beneficial as they mobilize the technical and financial resources of companies, as well as their commercial, managerial, and operational expertise. They can provide public services more economically while also generating a profit. Joint undertakings can create both benefits and challenges in their various forms, which are outlined in tables 5-2 and 5-3. However, there is currently a lack of consensus on what constitutes a genuine PPP. The World Bank categorizes service contracts as public procurement projects while the Asian Development Bank describes them

[1] *SFDRR, para. 31 (i).*

as PPP agreements. Some PPPs retain Government ownership while others reflect shared ownership by both private and public sector interests.

Table 5-2 *Benefits of multisector partnership agreements*

| Benefits (for the society) |
|---|
| Increased efficiency in the delivery of public services and infrastructure |
| Increased technical knowledge and abilities |
| Limited, or no, public sector expenditure |
| Improved quality of public services |
| Reduced whole life costs |
| Generates commercial value from public sector assets |
| Developing local private sector capabilities |

Table 5-3 *Challenges of multi-sector partnership agreements*

| Challenges |
|---|
| Assessing risk transfer |
| Limited incentive for continued investment (especially towards the end of contracts) |
| Limited competition in the private sector (especially in large infrastructure projects) |
| Setting tariff payments that represent fair pricing for the private sector and public users |
| Creating a clear legal and regulatory framework |
| Coordination between different partners may be difficult |

The different types of PPP agreements can be qualified by the degree of private sector participation, as illustrated in figure 5-2. At the lower end, the private sector handles the operation and maintenance of services, management and lease contracts while the public sector retains the ownership of the assets.

Figure 5-2 *Types of public-private partnerships, by degree of private sector involvement*

| **Service Contracts** | **Management Contracts** | **Lease Contracts** | **Concessions** | **Build-Operate-Transfer** | **Joint venture** | **Privatization** |
|---|---|---|---|---|---|---|
| Public ownership, with private sector responsibility for providing services. | Public ownership, with private sector responsibility for managing a major component or entire operation. | Public ownership, with private sector responsibility for management, operations and some renewals. | Public and private ownership, with private sector responsibility for operations and financing, including specific investments. | Public and/ private ownership, with private sector responsibility for investment and operation of new infrastructure or a major component. | Public and private ownership, with public and private sectors both involved as owner and operator. | Private ownership |
| **Low** → **Private sector participation** → **High** | | | | | | |

Concessions to build-operate-transfer and joint ventures are usually focused on infrastructure and involve private ownership to some extent. For these concessions, the private sector assumes the construction, operation, management and maintenance of the asset, while the public sector maintains overall ownership and sets operational standards. In a concession, the private sector collects a tariff from the users of a system, although the tariff rate is usually established beforehand with the public sector. Other conditional schemes to "build-own-operate-transfer" and to "build-rent-own-transfer" are specialized concessions (ADB, 2008). In these cases, the private company provides the investment to build the infrastructure, and crucially also owns and operates it for the length of the contract. Joint ventures are an extension of this concept by sharing the risk and investment between the private sector and the public sector parties. They are an alternative to complete privatization, where the infrastructure is owned and operated only by the private company.

### 5.2.1 Public-private partnerships for disaster risk reduction

Effective DRM requires collaboration among stakeholders through public-private partnerships (Box 5-2). Although the term has frequently been used for the commercial construction of public infrastructure and provision of public services, PPP can also describe other mutually beneficial associations in socioeconomic development (UNDP, 2009; World Intellectual Property Organization), undated; World Bank, 2011).

Box 5-2 *Public-private partnerships for disaster risk reduction*

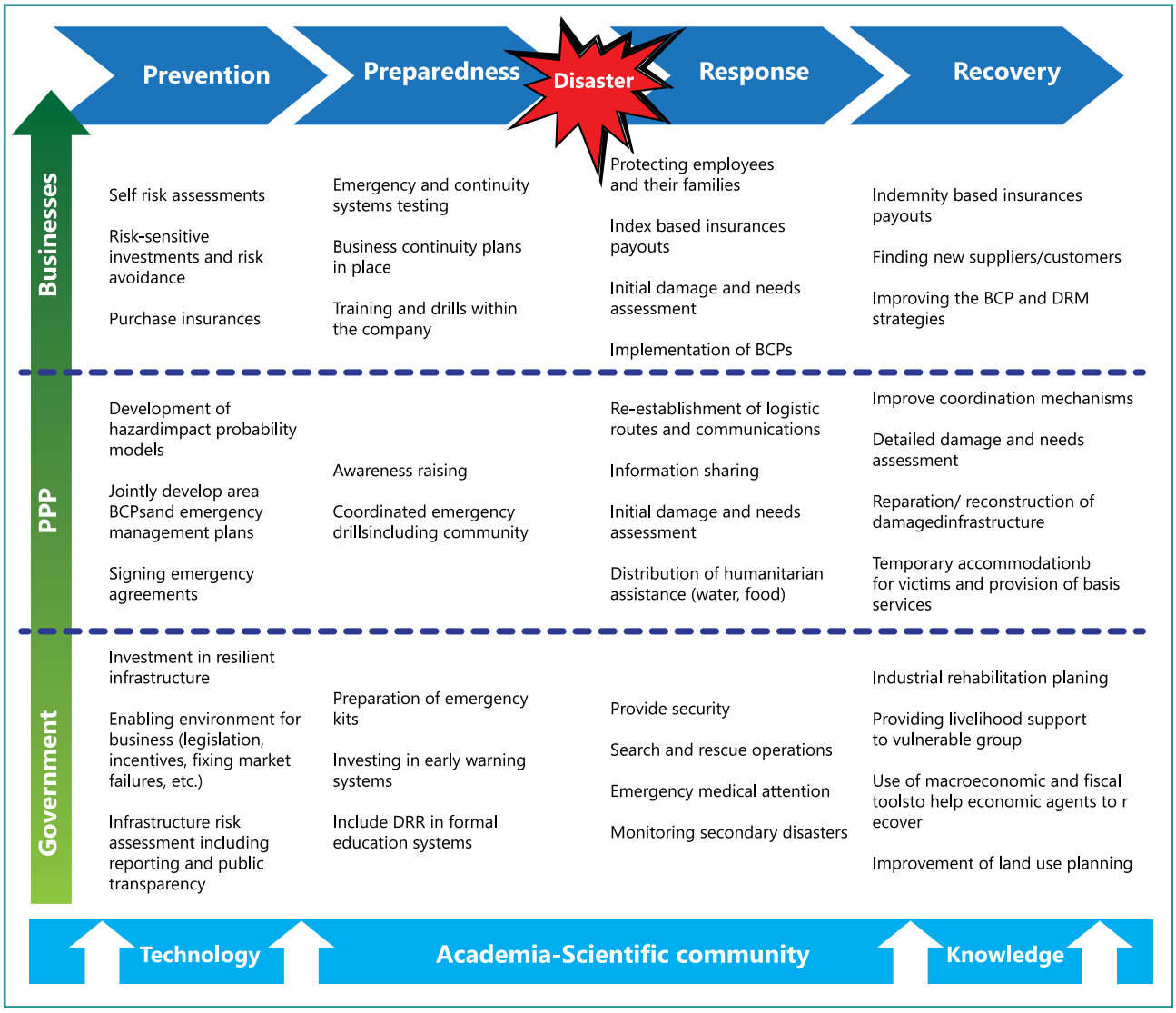
Daikin Industries, Ltd. collaborated with five community associations and Soka City municipality in Japan to establish a cooperative agreement. Multiple relationships were established to improve the delivery of emergency assistance for the communities, support the disaster management activities of the local government, and to hasten the recovery of disrupted company services. The agreement identified measures to provide office space, energy, water supplies and other critical requirements or facilities in the event of a disaster.

***Source:*** *UNISDR and ADRC (2007).*

Partnerships between firms and governments are reshaping disaster management strategies, operations and tactics. The effects can combine to strengthen community resilience at the time of disasters in multiple ways. Strategically, when firms and Governments collaborate, they can alter the focus of government agencies involved in disaster management.

Public-private partnerships reduce the burdens placed on governments to provide essential goods and services during crises, permitting public officials to focus instead on other strategic priorities. Operationally, multisector partnerships enable government agencies to move internal resources rapidly, making the system more responsive to changing community needs. In this way, public-private partnerships can play a substantial role in responding to and recovering from disasters.

Figure 5-3 *Examples of public and private sector involvement in disaster functions*




***Source:*** *Developed by Author.*

Figure 5-3 illustrates some examples of disaster-related actions classified according to the relative involvement of the public and private sectors. The actions are indicated variously as being conducted only by government authorities, through partnership arrangements, and only by businesses. The selected examples of disaster-related activities illustrate some of the different responsibilities undertaken by each of the sectors, rather than provide a comprehensive record of all the essential tasks.

### 5.2.2 Benefits of public-private partnerships for disaster risk management

A successful PPP requires a clearly defined and mutually agreed purpose, an appropriate allocation of resources and the equal sharing of risk and rewards between the public and the private sector participants. A PPP that can provide better service and demonstrate efficient management in comparison to public sector capacities can be effective and influential. A successful PPP can inject additional private sector financing into an endeavour while distributing associated financial risks among the participating entities. The primary attributes of PPP arrangements for DRM are increased management expertise and the availability of advanced technologies, physical assets and financial resources of the private sector. However, the public sector needs to foster an enabling environment

for this collaboration to occur. Incentives can be beneficial in this respect through financial rewards such as revenue flows, tax advantages, public subsidies or discounted loans for the private sector. Businesses will value other benefits too, such as increased brand recognition and employee satisfaction. A successful PPP must balance the business obligations to earn market-based returns with the public sector's need to improve DRM capabilities at a reasonable cost (Cities Development Initiative for Asia, 2011).

As an effort to improve the governance system for DRM, the Sendai Framework calls for mainstreaming and integration of disaster risk reduction within and across all sectors.[2] The review and promotion of the appropriate definition of roles and responsibilities, coherence mechanisms and further developments of national and local legal frameworks, regulations and public policies, will guide the public and private sectors to:

- Address disaster risk in publically owned, managed or regulated services and infrastructures.
- Promote and provide incentives, as relevant, for actions by persons, households, communities and businesses.
- Enhance relevant mechanisms and initiatives for disaster risk transparency, which may include financial incentives, public awareness-raising and training initiatives, reporting requirements and legal and administrative measures.
- Put in place coordination and organizational structures.

The United States Federal Emergency Management Agency (FEMA) has identified eight benefits of public-private partnerships for disaster resilience (FEMA, 2014).

1. They enhance situational awareness. Bilateral information flows can provide mutual benefits: the public sector can expand its base of information beyond existing government sources while the private sector can benefit from timely and reliable government information, which can inform business decisions.

2. They improve decision-making. Sharing information between sectors can provide decision makers with current, relevant and accurate data to make judgments and informed choices.

3. They access additional resources. Public and private collaboration can pool physical resources, strategic thinking and business knowledge for making communities more resilient to disasters.

4. They expand communication possibilities. Combined communication systems extend access to larger and more diverse audiences.

5. They enable better coordination among different elements of the private sector. Partnerships can induce collaboration and better coordination in such areas as planning, preparedness, and response activities among the participating members.

6. They increase the effectiveness of emergency management efforts. Partnerships can increase transparency and trust between parties. Businesses have influence in the communities where they work, and governments can benefit from a better understanding of the capabilities, limitations and requirements of the private sector.

[2] *SFDRR, para 27 (a).*

7. They maintain strong relationships, built on mutual understanding. Relationships forged among actors working together in a disaster can facilitate more effective response and recovery if subsequent emergencies.

8. They create communities that are more resilient. Partnerships progressively build additional local capacities to prevent, protect against, respond to, and recover from crises. Collaboration, coordination and communication between government and private sector partners on a continuous basis will strengthen lasting relationships and lead to stronger community resilience.

### 5.2.3 Challenges for public-private partnerships, and possible solutions

Challenges need to be addressed if PPPs are to become more evident in advancing DRM practice. Precise definition and a mutual understanding of the various parties' expectations are critical factors for successful PPPs. Solutions for some of the challenges that arise in PPPs are considered in the following paragraphs.

#### *Unclear expectations, and uncertain roles or responsibilities*

The parties contemplating partnership arrangements need to define for each other what they require or expect to achieve through their joint efforts. Failure to do so could threaten intended arrangements, damaging the parties' reputations in the process. Mutual trust among the participants is essential. Each party needs to contribute equally, or at least as agreed, and none should take advantage of another's efforts. If a party fails to fulfil its commitments, its reservations can jeopardize others' willingness to become involved, perpetuating an ambiguous and ineffectual relationship.

These problematic situations are likely to arise in the definition or distribution of the respective roles of the private and public sector participants. If there are uncertainties in matters of oversight, direction, or the extent of specific management or implementation responsibilities that each party will assume, the partnership will fail. Coordination problems will appear, leading to possible breaches of the agreement, and certainly limited accomplishments. Unintended complications also can place employees in uncertain positions of responsibility or conflicted loyalties. As Busch and Givens (2013) ask, "How do private sector employees remain good stewards of public funds and at the same time continue to report to private sector supervisors?"

These uncertainties will compromise any serious possibilities to ensure accountability to the various stakeholders who each have different interests in the partnership. The government and business members involved in a PPP need to address matters of accountability directly at the beginning of the partnership through contractual agreements that contain clear terms, obligations and deliverables.

#### *Privatization potentially undercutting public sector capabilities or responsibilities*

There is an additional risk to PPPs' effectiveness and vitality if the DRM capacities of the public sector are diminished by outsourcing too many of its functions to private companies (Busch and Givens, 2013). In the case of DRM responsibilities, public disaster management agencies may reduce their operational capacities and diminish their professional knowledge if they engage in too many or overly comprehensive partnerships with the private sector. These conditions may result from budgetary

constraints that limit adequate preparedness or the availability of sufficient material resources. It also could be motivated by reasoning that suggests public disaster management agencies should instead concentrate on the management and coordination of DRM rather than operations. Rigorous evaluation is needed to ensure that any potential efficiencies gained from a distribution of duties between private and public sector interests would not alter governments' responsibilities to protect citizens and the society from harm or loss.

### *Addressing matters of shared confidence*

Some businesses may be reluctant to participate in PPPs or cooperate sufficiently because of their concerns about intellectual property rights or that their commercial trading advantages could be compromised. These intangible assets require time and effort to build, so companies are careful about protecting them. Government agencies need to be attentive in addressing the possible reluctance of businesses to engage in partnerships. Their concerns can be alleviated by offering assurances of confidentiality or other means to instill confidence in PPP arrangements.

## 5.2.4 Emergency agreements in Japan: a successful partnership

Emergency agreements (EAs) are an effective PPP strategy used in Japan to create commitments for building resilience in local communities. They are similar to business continuity plans in that they try to reduce the impacts of a disaster by preparing countermeasures in advance. At their core, EAs are contractual agreements involving a business or industry association able to provide specific goods or services, and a public sector entity, which is typically a local government authority. The EA can be initiated by a special request or activated automatically when a previously identified condition occurs, such as an earthquake of a specified magnitude.

A survey of 66 prefectures and cities in Japan conducted in March 2012 identified 7,378 EAs in effect with local governments (UNISDR, 2014a). Most of the agreements (6,415) were signed between local governments and private sector entities.[3] Even more of all the existing agreements (6,546) were established after the 1995 Great Hanshin-Awaji earthquake, so their durability demonstrates the effectiveness as well as the sustainability of the arrangements.

The many EAs in use indicate that local governments across Japan are addressing specific needs they have identified through prior DRM planning with local resources from businesses in their own communities. The advantages of local authorities using the reservoir of specialist skills and tools in the private sector have been recognized in the 2013 Global Assessment Report on Disaster Risk Reduction (UNISDR, 2013b), and noted in other UNISDR publications of good practice (UNISDR, 2013d; UNISDR, 2013e).

Local governments have valued having private sector experts available immediately "to assure success in reaching the last mile" by meeting individual needs convincingly in their communities. EAs demonstrate a highly visible promise from the private sector company to the community, delivered through the local government. Businesses will do their utmost to fulfil this promise to be available to offer emergency assistance in times of need by improving their resilience. Businesses, including general contractors, supermarkets and manufacturers among others credit EAs as a motivation to improve their business continuity and preparedness (UNISDR, 2013f).

[3] *Among the other EAs, 912 were made with other local government authorities, most commonly as mutual aid pacts with administrative bodies in different geographical areas. The remaining 42 EAs were signed with a combination of both private and public partners.*

The possibility of providing water to surrounding communities encouraged hospitals, universities and factories to invest in resilient infrastructure, and specifically in water supply systems. The prospect of signing an EA with a local government to announce the joint initiative publicly further motivated the institutions' commitments (UNISDR, 2013f). Emergency agreements have proven to be popular and effective mechanisms because they address private sector interests at local community levels. This approach has enabled individual communities to implement realistic actions with tangible impacts communities in an environment that both community organizations and companies know and understand. Emergency agreements are a model of engagement that speaks to local governments, because it demonstrates how the public sector can involve the private sector pragmatically, whether the partners are businesses or industry associations, SMEs or large global corporations. All of these actors can contribute to local activities that improve the resilience of the community. A characteristic feature of EAs is that while their scope and subject emphasis can vary, their purpose and identities are grounded in local capacities and demonstrated relevance.

The goods and services provided by the private sector through the EAs are not donations, so there is an obligation for the public sector to provide fair remuneration after crises. That is essential for the execution of the promised actions by the private sector to ensure the continued growth of the trust-based, and mutually beneficial, relationship.

These EAs have shown their effectiveness in Japan. Even though countries have different political and cultural approaches to fulfil civic responsibilities, and mutual trust can be built through various means, the success of EAs provides useful insights. Local governments elsewhere could consider the possibility of casting EAs in local circumstances with relevant business communities. Shopping malls, conference venues, and major transportation terminals could serve as emergency accommodations or as depots for emergency supplies. Construction companies could consider prior arrangements to lease manpower, technical expertise, transport or specialized equipment at times of urgent need. National Governments and non-profit organizations can consider contingent arrangements to finance EA activities.

## **5.3** Business and non-profit organizations

Businesses often find themselves more likely to achieve better performance when entering into a partnership with non-profit organizations that share a similar agenda (Lafferty, Goldsmith and Hult, 2004; Porter and Kramer, 2006). Since consumers have become increasingly demanding, a company's decision to embrace a public cause simply makes business sense. Collaborating with non-profit organizations can be a beneficial marketing device to gain a competitive advantage by demonstrating a positive corporate reputation. Many consumers prefer to do business with a company that represents values and interests beyond only making a profit (Andreasen and Kotler, 2003).

Collaboration between the private business sector and non-profit organizations requires sound coordination and engagement at all levels. Contributions are required from both the non-profit and the business entities involved, ideally with reinforcement from the public sector, to achieve productive relationships. Shared financial and human resource commitments ensure the sustainability of partnerships and networks regardless of the scale at which they are organized. Networks equally need to ensure that the core competencies of all members are identified and shared on a continuous basis prior to and throughout any joint actions. A coordination mechanism between businesses and

non-profit organizations ensures that the collaboration is based on the following features:

- Acceptance of societal resilience as a shared aim, mission or purpose with an appreciation of partners' attributes and a mutual understanding of the parties' differences.
- Understanding the notion of disaster risk-sensitive and responsible business incorporates social and environmental perspectives, in addition to expected economic interests.
- Common recognition of the need to address local risks with a long-term perspective to provide solutions.

There is a challenge to establish proactive enabling environments that can transform partnership relationships into interactive ones that can transcend philanthropic gestures with only limited lasting impact. The dissemination of best practices of collaboration between business and non-profit interests needs to occur in local, subnational and national settings in a country. Best practices can be realized through the implementation of strong monitoring and evaluation activities, ensuring that the results are shared, with corrective actions taken to improve areas of weakness. Beyond efforts that encourage a wider distribution of information relevant to identifying and reducing risks in a community, government and business leaders can provide clear guidelines to encourage business participation in DRM.

In collaborating with the private sector, non-profit organizations should be more attentive to the characteristics and motivations of businesses than they often are. CSR managers frequently seek information and documentation they can utilize to justify the company's CSR strategy and influence the executive management. Non-profit partners can offer more support in this respect than they do, in part because of their relative unfamiliarity with either constraints or different contexts under which private sector partners are working within a business environment. Non-profit organizations can extend support to business colleagues by considering approaches that benefit both of their interests. Businesses often lament that they could be more helpful in relating to DRM needs if civil society organizations and NGOs would be more explicit about the resources they require. Socially engaged non-profit organizations and NGOs can do a better job explaining to businesses what they do in their projects and indicate more specifically, what they need from businesses.

Their respective objectives may well be different, but the common interests can be difficult to identify clearly, much less to communicate effectively with PPP partners. One may think that non-profit organizations occupy a middle ground and are well placed to "interpret" between the public and private sectors. However, socially motivated organizations have their own organizational identities, value systems and distinctive working environments. Sometimes neither the public nor the private sector understands non-profit enterprises so well. The problem is even more challenging when the needs of SMEs are taken into account with their more localized working environments grounded in communities with correspondingly fewer resources or options to draw upon even under routine conditions.

These issues underline the importance already mentioned for PPPs to be particularly focused on assuring that potential partners understand the objectives of any joint endeavours with their respective roles and means of accomplishment. In following the direction provided by the SFDRR, the successful promotion of collaboration between non-profit organizations and businesses will require the endorsement and strong support from both Governments and business associations.

Both of these domains need to become more engaged in reporting private sector participation in the future national SFDRR monitoring activities. The expectations of accountability need to be expressed more explicitly, defined better for specific stakeholders and shared more widely throughout the DRM community of interests.

DRM initiatives in developing countries need to place local communities at the centre of the combined efforts. Governments need to be accountable for ensuring that appropriate enabling environments are created and supported. National targets should focus on establishing relationships among different elements of the business sector and non-profit organizations, with details of their outcomes rather than their intentions serving as measures of performance.

Box 5-3 *Japan Platform activities following the Great East Japan earthquake and tsunami*

Two cases of collaboration between businesses and non-profit organizations after the Great East Japan (GEJ) earthquake in 2011 follow (box 5-3 and 5-4). An additional example of DRM partnership between the AXA Group and the NGO, CARE International, is presented in annex III.

Japan Platform (JPF) was a tripartite cooperation system organized to provide international assistance after the GEJ earthquake and tsunami. It included NGOs, the business community represented by Keidanren, the largest business association in Japan, and Japan's Ministry of Foreign Affairs.

The partners worked in close cooperation, based on equal roles to avail of each sector's particular attributes and to maximize the use of their combined resources. While normally extending relief assistance abroad, JPF realized that it could contribute to the relief efforts in Japan after the GEJ earthquake and tsunami.

Many supplies and services were offered, but there was a lack of coordination between the business sector and NGOs. JPF saw an opportunity to assist by sharing an inventory of available donations with NGOs working in the affected areas. This initiative created a common point of contact for both businesses and NGOs, increasing the efficiency and effectiveness of the aid efforts.

Because of its previous relationships, JPF was able to act as a broker between companies like Nissan and Bridgestone that provided relief materials for the GEJ earthquake, but which were later sent to Africa. Japan Platform's familiarity with the available resources, the suppliers and the priority needs of other countries enabled JPF to facilitate the effective use of the relief materials.

***Source:*** *The Japan Platform (2011).*

Box 5-4 *Cloud-based information services following the Great East Japan earthquake and tsunami*

The amount of data that had to be gathered and assessed after the GEJ disaster was overwhelming. The resulting information that needed to be analysed and shared systematically for the relief needs was equally abundant. Many local government offices were affected by the tsunami and the resulting nuclear crisis, which further complicated the requirements for handling all the information rapidly and effectively.

To address these demands, Fujitsu Limited dispatched an information technology (IT) engineer to the affected areas to establish a "*cloud*" data storage system. The cloud service was operational within five days and provided an IT platform that allowed the vast amount of information to be organized and used quickly. The cloud system enabled the information to be managed from one platform, which expedited relief operations. The outputs from the cloud system were shared widely and used throughout the aid community. This system also has been used elsewhere in disasters by managing information on avian influenza and foot-and-mouth disease.

***Source:*** *Fujitsu (2015).*

## **5.4** Partnerships between business interests and academia

Partnerships between businesses and academic institutions are necessary to create resilient communities. The Organization for Economic Cooperation and Development (OECD) has recognized that knowledge is the foundation of economies, and that information drives economic growth and productivity (OECD, 1996). It further established that the policies of such "knowledge-based economies" grounded in the production, distribution and use of knowledge and information should be utilized to enhance peoples' well-being (OECD, 1996). Protecting a community from natural and technological hazards is an important element in maintaining its well-being.

Partnerships between business and academic institutions and interests do exist, but they are few and greatly underutilized for advancing DRM knowledge and practice. The SFDRR has expressed a renewed recognition of the importance of research, science and technology to enhance disaster risk reduction, as well as acknowledging the private sector's role as an important stakeholder in disaster risk management. There is now a pressing requirement to bring both of these interests together and to encourage opportunities through which they can create more evidence-based approaches to comprehensive DRM practice.

A knowledge-based economy creates opportunities for businesses to collaborate with research and academic community partners. Academia produces knowledge, which business uses and combines with additional information and its experience to create value. Neither domain possesses these characteristics exclusively, but their combined attributes are less evident in DRR endeavours. Knowledge about disaster risks is distributed formally by study and research, and through more informal but empirical means that can include community activities. Both uses of knowledge can increase economic performance and contribute to mitigating losses, especially when the knowledge is informed, accurate and communicated effectively. In the case of disasters, a focus needs to be directed towards the conditions and needs in local communities. Businesses have several roles in

communities. The dominant one is economic given their primary objectives to make money and build value. Other corollary interests are to support community development and sustainability because they support business success. Academic institutions and research interests have benefitted from businesses for financial support and to develop the means to market applications for innovative techniques or inventions. If a business can remain operational during a disaster, then its employees, their families, the local economy and the community also benefit.

Academic institutions can work with businesses to identify weaknesses and research can propose possible solutions. With their experience in learning educational bodies can assist business in the development and delivery of training or short courses to educate businesses, employees and others on many topics related to hazards and disaster circumstances more generally. Both academia and businesses are significant employers in the communities they share, so they each are influential enterprises.

Partnerships can benefit both participants but are not without their challenges. Differences in the cultures of different participants can be a difficult problem. Businesses tend to act quickly and require rapid decision-making, whereas academic institutions and researchers are more deliberate in their management and reflection. There are also potentially serious questions about conflicting interests than can arise in some research initiatives sponsored by businesses. Some companies address these issues by supporting an overall field of research, rather than subjects specifically concerning their business interests. Partnerships can be beneficial by providing joint mechanisms like ethics review boards to address some of these concerns.

### *Examples of Partnership*

The AXA Research Fund provides an example of a business and science partnership, which finances research. Its mission is "to boost scientific progress and discoveries that contribute to better understanding and better preparation against environmental, life and socioeconomic risks" (AXA Research Fund, 2014b). The fund does not fund research in its specific business areas, and it states that it does not own the intellectual property rights of the research products. Since 2007, it has granted more than €114 million (about $130 million) to 410 research projects in 30 countries, engaging researchers of 49 nationalities (AXA Research Fund, 2014b). The sponsored research has addressed both the physical and social impacts of hazard phenomena as well as studying the circumstances and consequences of major disaster events.

The SAFE STEPS project is an example of a public service initiative resulting from a partnership between business and a scientific institution. Prudential Corporation Asia is an asset management, life insurance and consumer finance business. It collaborated with the National Geographic's media channel through the Prudence Foundation, the charitable arm of Prudential Corporation Asia. National Geographic has been a scientific and educational institution since 1888. This partnership between business and science identified a lack of basic public disaster information, and the participants worked together to find a solution, which became SAFE STEPS (Prudence Foundation, 2014).

Launched in 2014, SAFE STEPS is an Asian public service initiative to provide basic education about hazards and information on preparing for them. The materials used include a website, posters, informative cards and public service announcements. The partners in SAFE STEPS also established other relationships with the International Federation of Red Cross and Red Crescent Societies (IFRC),

media outlets, Governments, and NGOs. Some of their accomplishments include more than 40,000 page views on the website (www.safesteps.com) and 11,000 views on YouTube. SAFE STEPS reaches more than 24 million households every day through the Fox media network, alone. It has appeared in 2,000 schools, reaching 10,000 children in Thailand.

The crucial features of any successful partnership result from strengths that each member brings to the relationship. It is important to acknowledge the different motivations for participants' involvement, and that different arrangements work better in various situations. Vital and productive partnerships are long-term efforts and cannot be considered as single joint activities. If members of the business and academic communities can bring these components together, contributing their abilities and building a mutual trust that all members value, the results will strengthen disaster risk management for the public.

## **5.5** Collaborative platforms and forums

Regardless of the country where they live, people are involved in a rapidly changing global environment determined by complex political and economic developments over which they have little control. Rapid technological innovation and the consequences of a changing climate add to the present conditions of uncertainty in which crises occur more frequently and with greater severity. Governments, businesses, and people all struggle to understand and adapt meaningfully to these rapidly changing environments wherever they live and work.

Many existing platforms promote the engagement of many actors in DRM in national, regional and global contexts. These arrangements exist to facilitate the systematic involvement of various actors, including the private sector, to engage meaningfully in concerted efforts that can advance DRM in practice (Humanitarian Futures Programme, 2012). The development of neutral platforms to share information can address the challenges of collaboration that inevitably exist among organizations with different interests, but which also share common goals.

Experiences from the humanitarian field show that platforms are struggling to define and measure their impacts. Challenges include overcoming an inconsistent record of forging links with governments, and a lack of information, or at least methods, to learn sufficiently from experience. There is an overall need to be more adaptive to changing environments. The private sector can offer additional or innovative opportunities with its focus on the use of technology, social media, risk information, research and analysis (Humanitarian Futures Programme, 2012). Extended business networks and their intrinsic professional relationships are very different from existing humanitarian and disaster-related communities of practice. They would serve as an asset to further collaboration with other relevant platforms and actors in different geographic scales.

### 5.5.1 National platforms

Governments recognize that countries can benefit greatly from DRM frameworks that include local private sector engagement, even though current practice in existing national platforms in Asia-Pacific countries is limited.

Strong national platforms for disaster risk reduction will facilitate multisector collaboration and can increase public and private accountability. National platforms can initiate working groups on collaboration with businesses by inviting representatives of the private sector and locally important industry associations to participate (box 5-5).

Singapore developed a national platform in 2008 to enable public-private collaboration in DRM. It established the National Business Continuity Management (NBCM) programme to strengthen the resilience and competitive advantage of businesses located in Singapore. It has the primary objective of assuring long-term sustainability of large companies and SMEs (National Business Continuity Management Centre, 2010).

The Government appointed the Singapore Business Federation (SBF) to oversee the programme and to coordinate with other business associations in activities such as workshops and training sessions. The SBF concentrated on raising the awareness of business continuity and businesses could access related materials or receive other support to obtain BCM certification through the programme. These practical steps are intended to encourage more interaction between the public and private sectors on DRM. Other countries could emulate Singapore's initiative to engage businesses in DRM through chambers of commerce or national industry associations. Governments will need to provide an enabling environment and other supportive forums similar to national DRM platforms if they are to succeed in increasing private sector involvement on a national scale.

Elsewhere, the Government of Viet Nam developed a national DRM action plan for the private sector through the Viet Nam Chamber of Commerce and Industry. This partnership developed and implemented disaster preparedness activities in subnational areas of the country while it engaged in more routine public awareness, information dissemination, training and capacity-building activities (ADPC, 2013). Other national business platforms in Asia include the Business for Peace Alliance in Sri Lanka, CiYuan in China, the Corporate Network for Disaster Response in the Philippines and the Disaster Resource Network in India.

Box 5-5 *The Trusted Information Sharing Network for Critical Infrastructure Resilience in Australia*

The Trusted Information Sharing Network (TISN) for Critical Infrastructure Resilience has been established by the Australian Government to build a partnership between business and public authorities for ensuring the resilience of the country's critical infrastructure. Businesses and government officials share information on security and the protection of critical infrastructure in a disaster. Since this national obligation is a responsibility shared between the private sector and Government, TISN has seven infrastructure sector groups of owners and operators to enable a better joint understanding of comprehensive infrastructure issues that contribute to achieving disaster-resilient communities.

***Source:*** *Modified from Australia Attorney General's Department (2010).*

### 5.5.2 Regional platforms

Regional platforms build relationships across sectors and among countries, linking national Governments to regional bodies and integrating private sector interests into national and regional initiatives. Regional associations provide a wider focus for DRM and partnership issues, so their collective support for individual national programmes can allow long-term influence in the region. They play a crucial role, at the national level, in building the knowledge of government officials at all levels.

The resulting relationships can benefit various elements in civil society including local communities and volunteers, as well as addressing private sector interests. Platforms and related associations encourage sharing experiences, lessons learned and good practices. They offer a potential for DRR training and education, including increased access to existing educational institutions and other forms of and peer learning.[4] At regional and global levels, stakeholders would find them useful for sharing current information and programme experience, providing means to advance consolidated regional concerns, and for promoting common efforts and partnership with a wider international audience. [5]

Regional platforms include the Asia-Pacific Business Forum (APBF) that has emphasized inclusive and sustainable business, and the Pacific-Asia Travel Association (PATA) with its emergency preparedness scheme. The Pacific Humanitarian Team and the Pacific Platform for Disaster Risk Management are both based in Fiji. The Top Leaders Forum is a private sector initiative that was established in the Philippines in 2012 to foster dialogue between regional business leaders and UNISDR. It was created to highlight primary DRM issues, to share experience and best practices, and ultimately to advance DRM practices and build resilience.

Although these are beneficial initiatives, they tend to be located in only a few countries. As the existing regional business platforms such as APBF are not currently focusing specifically on DRM issues, the region would benefit if there were to be designated DRM business platforms. Organizations such as ASEAN, APEC, SAARC, ESCAP and UNISDR could build on their existing regional business networks and advisory councils to advocate for the creation of a strong multi-stakeholder regional platform for DRM.

### 5.5.3 Global platforms

Global platforms can use the private sector's expertise to engage as a partner to help build wider relationships that can address shared interests and operational challenges. They also fulfil an advocacy role that is directed towards specific or more general DRM issues. By engaging private sector participants, improved coordination is possible through global platforms for transboundary issues, which are assuming greater importance as the number of global value chains increase. It is important for all stakeholders in DRM to become conversant with the lessons from previous disaster situations and to learn from best practices as DRM measures are implemented around the world. The United Nations Global Compact is considered by the Sendai Framework to be the primary United Nations initiative for DRM engagement with the private sector and businesses. It has the potential to become even more involved in promoting the critical importance of disaster risk reduction for sustainable development.[6]

The Disaster Risk Reduction Private Sector Partnerships (DRR-PSP) is a global association of private sector members and UNISDR to mobilize actions to reduce disaster risks. As discussed in chapter 3, the DRR-PSP international platform hosts an interactive exchange among participants from major industries including financial services, telecommunications and construction, among others. An example of DRR-PSP activities occurred when an American company discussed DRM with a Mexican partner, which then promoted the subject with other Mexican companies. As a result, additional companies working in Mexico joined the DRR-PSP group. The Private Sector Advisory Group was formed to enhance private sector involvement as part of the DRR-PSP.

[4] *SFDRR, para. 14 (g).*
[5] *SFDRR, para. 25 (d).*
[6] *SFDRR, para. 48 (f).*

The biennial Global Platform for Disaster Risk Reduction held in Geneva, Switzerland is the primary global forum for sustaining continued international commitments to the subject. This international meeting takes stock of national and technical accomplishments, shares experience and enables Governments, organizations and businesses to rededicate their policy commitments to DRR. Participants represent Governments and local authorities, non-profit organizations and civil society leaders, international organizations, academic and technical institutions and commercial interests. The Global Platform offers an opportunity to extend DRM concepts around the world by involving stakeholders from more than 160 States and Territories and nearly as many organizations. Following the example of the Global Platform, six additional regional multi-stakeholder forums are held in Africa, the Americas, among the Arab States, in Asia, Europe and the Pacific. As the influence of these platforms expands, they reflect the growing commitments of Governments to improve coordination and the effective implementation of DRM activities. They also link the many local, national and regional efforts that need to be involved to build resilient societies.

Other examples of global platforms that address different aspects of disaster and risk management interests include the Aidmatrix Foundation and NetHope in the United States; Fleet Forum and the World Economic Forum in Switzerland; and Global Hand in Hong Kong, China.

# Chapter 6

# Conclusions and Recommendations

The role of the private sector as one of society's primary determinants for advancing disaster resilience is emphasized in the long-term global goal of disaster risk reduction. The SFDRR highlights the goal of substantially reducing disaster risk and losses in lives, livelihoods and health, in addition to protecting the economic, physical, social, cultural and environmental assets of people, businesses, communities and countries.

This follows from the analysis that there are positive signs of success and encouragement to continue efforts to increase disaster risk management in practice: awareness is rising in most countries; disaster-related human losses are decreasing in some circumstances; there is a growing willingness to pursue multi-stakeholder collaboration. However, the frequency and severity of disasters continues to grow, with more people becoming exposed to disaster risks. Recurring small-scale disasters and slow-onset disasters particularly affect communities, households and small and medium-sized enterprises, representing a high percentage of all losses (ESCAP, 2015b). Many challenges remain to be addressed.

The private sector is unavoidably aware of the threats that disasters pose to its interests and the societies in which businesses operate. That has spurred a growing interest in business engaging in DRM, but many companies remain passive players in the various national, regional and international DRM frameworks. The Sendai Framework recognizes the need for stakeholders to work more closely together and to create additional opportunities for businesses to collaborate and integrate disaster risk into their management practices. There is a need for the private sector to develop a united voice and to demonstrate a more assertive role in becoming an integral part of DRM agendas wherever businesses are involved. It is equally important for businesses to recognize that they create risks themselves. Therefore, they have responsibilities as direct stakeholders to be accountable, along with others, to Governments and the societies they depend on. The character and emphasis of business participation in DRM need to shift from reactive responses to proactive behaviour that can prevent and reduce risk. Perspectives should proceed from focusing on short-term gains, to seeking long-term benefits of stability and sustainability. Commitments can become more lasting as they progress from individual demonstrations of charitable corporate social responsibility actions to longer and substantive engagements with others that create shared and lasting value.

Governments have important roles to foster and support increased private sector engagement in DRM in the course of their work, instead of only when a crisis occurs. Various incentives have been suggested explored in the present publication, and Governments can influence the design and use of beneficial risk finance and transfer instruments. Smaller business enterprises require special support and are likely to yield more immediate local political returns from government efforts to engage them in DRM initiatives. Public officials can pursue a more systematic approach to distributing risk-related information, which raises public awareness and can stimulate local capacities to conduct risk assessments or adopt business continuity strategies. Partnerships created among businesses and governments, non-profit organizations, civil society and its institutions and other collaborative arrangements stimulate the many commitments required to achieve a resilient society. They increase the efficient use of resources, facilitate the exchange of information, enhance risk sharing, and at times of need, can assist the community to respond or recover. For partnerships to become more widespread and increasingly effective, continuing attention is needed to overcome challenges in their productive coordination of many interests, and maintaining the essential trust among the participants.

These conclusions build upon the previous recommendations of the two preliminary studies that motivated this present review of resilient business roles and opportunities (ESCAP and ADPC, 2014a;

ESCAP and ADPC, 2014b). The recommendations have been informed further by discussions at the Sixth AMCDRR in June 2014, presentations at the 11th Asia-Pacific Business Forum in November 2014, and the post-Sendai deliberations.

## 6.1 The role of the private sector: "With great power comes great responsibility."

The important roles, responsibilities and accountability of the private sector engaged with DRM should be highlighted as efforts continue to raise the awareness of DRR throughout all sectors of Asia-Pacific societies. Businesses can contribute their expertise and resources to build partnerships with governments and non-profit organizations to create resilient societies.

Businesses can pursue many beneficial roles in DRM frameworks if they are sufficiently informed, motivated and willing to do so. The first two elements will be advanced only if the private sector is engaged fully in DRM activities and regularly represented by a stronger voice in all relevant occasions. For the private sector to become influential in public policy forums, specific DRM interest groups need to be established within existing structures. Regional business advisory councils, such as those sponsored by ESCAP, APEC and ASEAN could create standing committees or similar arrangements to provide continuing emphasis to DRM-related issues for their membership. Ideally, the various interest groups would relate to one another, but it is more likely that individual participating members would be the vital links in the course of their routine business or industry relationships. Within individual countries, chambers of commerce and business associations are obvious venues to address business interests in DRM, as already occurs in many instances.

If they are carefully analysed, business investments can become powerful instruments for companies to determine the disaster risks they face, as well as elaborating the level of public exposure to disaster risks. The private sector needs to exercise this responsibility by undertaking more risk-sensitive investments that build profitable and sustainable business models, which also contribute to enhancing societal resilience. By considering the private sector as one of society's "risk shareholders", businesses can assume the responsibilities they have, as well as the potential benefits they could derive by contributing to a resilience society.

Businesses should focus on the benefits that effective DRM provides directly for them, such as safeguarding their operations and those of suppliers and customers. A critical place to focus would be ensuring the resilience of their supply chains, or aligning BCPs with those of their suppliers and customers.

All sectors of society, including business, need to become more transparent and accountable, which translate into disclosing risk information publicly and promptly. With a growing awareness of rights and obligations, all sectors of society are demanding informed and definitive actions to manage risks, if reputations are not to suffer. Businesses that are not sensitive to their own risk jeopardize the survival of other firms that comply with existing laws and regulations. This refusal to address one's risks undermines the sustainable development of society. Governments should protect responsible businesses by effectively enforcing existing laws and regulations.

## 6.2 Changing the emphasis for business engagement in disaster risk management

To further private sector engagement in building resilience, businesses need to take bold and informed steps. They can shift the emphasis of their risk management strategies from reactive and responsive preparations towards anticipatory and proactive investment in risk-sensitive business operations. Both the Sendai Framework for Disaster Risk Reduction and the concurrent international commitments to a future sustainable development agenda provide unprecedented opportunities for businesses to focus on long-term DRM goals rather than on short-term gains. Businesses should be encouraged to invest in shared societal benefits that are good for business and strengthen resilience instead of merely engaging in occasional CSR initiatives of limited value.

For businesses, shortsighted behaviour focused only on quick profits has proven to be problematic. Building resilience in a community, in business or society, requires foresight and the appreciation of long-term value. This foresight requires a willingness to make investments that yield benefits that accrue over time.

Systematic change is required to alter "perverse incentives" embedded in business practices. Existing practices such as executive compensation schemes that are tied exclusively to profitability should be revised to include measures that value productivity and long-term sustainability. The public sector has a corresponding responsibility to enact relevant laws and enforce them with effective regulations to oversee progressive changes for the viability of society. Planning and creating long-term resilience incur initial costs as does any other investment strategy, but accrued benefits can result from forward-thinking and sustained actions. Disaster risk needs to be factored into enterprises' cost-benefit analyses.

Businesses have recognized the internal benefits they have received from their investments in mitigation, or savings that have resulted from thorough business continuity planning. However, the knowledge they gained in the process now needs to be expanded and used more assertively to advance the most comprehensive values of resilience for businesses, the public sector and society. Governments can highlight specific benefits associated with enhanced business reputations, increased profitability, and competitive advantages gained through wise investments in DRM. Prominent leaders of industry can influence highly regarded business platforms and forums by communicating their foresight and commitments to assuring continued growth, productivity, corporate leadership and community well-being. None of these hallmarks of success arises through the destruction of assets or the loss of revenue because of a disaster.

DRM generates new business opportunities and creates mutually productive relationships by building resilience. The private sector can collaborate with governments through contingent emergency agreements to perform critical activities or to provide urgently required technical expertise rapidly after a disaster. The relationships established through joint efforts with the public sector at the time of crisis, such as restoring public services rapidly, can lead to further opportunities. Partnership arrangements that effectively resolve urgent problems for an entire community frequently have a way of paying invaluable economic, political or social returns. The procedures that determine how financial assistance is used for recovery and reconstruction activities need to be reconsidered. Disaster assistance should be provided in a conditional manner and monitored carefully by international

donors, the Government and businesses to ensure that it meets priority requirements. Particular attention is required by all contributors to recovery activities to ensure that they are not recreating the previous risk. Comprehensive audits should be conducted following the distribution of funds to hold recipient organizations accountable for their intended use.

Businesses can become more relevant and have increased influence on DRM if they move beyond CSR initiatives that are often philanthropic gestures of relief assistance or passing relevance. Efforts that can create shared value for both companies and the communities where they operate can create benefits with lasting value. Shared value initiatives use business and market-based solutions to address societal problems while they also can build resilience. They enable companies to compete effectively within their industry and maximize profits, creating positive social benefits over the long term.

## 6.3 Creating enabling environments for businesses to invest in disaster risk management

Governments have the primary responsibility to ensure the well-being of its citizens. As the reduction of disaster risk and protection from disasters should be a common concern for all, Governments need to develop and enhance the roles and contributions of many stakeholders, including the private sector.

Strong political commitment and leadership at all levels are needed to create enabling environments that can produce results. Essential elements that contribute to favorable conditions for resilient businesses include effective legislation and a variety of incentives designed to encourage their engagement in DRM. This objective can be pursued by public commitments to the widespread availability of risk information, encouraging risk disclosure and efforts to facilitate and support the implementation of DRM initiatives. Public policies that support the use of financial instruments and the wider availability of insurance are important components of an enabling environment that can encourage business involvement in DRM. Smaller enterprises can derive particular value from support that helps them to become resilient.

Successful enabling environments need to express the respective responsibilities of public and private stakeholders to ensure the mutual benefits of partnerships. The potential for joint enterprises to provide economic opportunities or benefits resulting from compliance with good practice are motivations for businesses to become involved with DRM.

Several governments in the Asia-Pacific region have gained valuable experience by collaborating with businesses in DRM endeavours. The distinctive features of these efforts often were stimulated by a serious disaster, but they are less frequently compiled as a regional resource for others.

### 6.3.1 Regulatory frameworks

Governments can use regulatory frameworks to encourage business engagement in DRM in several ways. They provide information about the practical action that needs to be pursued, such as adopting

building codes, employing land-use planning to limit exposure in hazardous areas, and applying safety and resilience standards for critical infrastructure. Regulations that require business continuity planning, mandatory liability insurance or impose the disclosure of risk information by businesses can contribute to safer societies.

Establishing regulations is only the first step, but enforcement is essential if the safety standards are to produce tangible results. The practical effectiveness of regulations depends on the allocation of financial and human resources, as well as constantly monitored operational procedures.

### 6.3.2 Incentives

Governments can stimulate private sector engagement in DRM through monetary and other incentives. Monetary incentives like tax credits or concessionary financing terms such as soft loans, subsidies and grants can encourage more affordable businesses investments in DRM measures. Other incentives can encourage efforts to increase resilience standards through such means as publicly recognized safety certifications and resilience awards, or using the application of industry standards to qualify for procurement or public service contracts. Similar incentives are used routinely in industries involved with energy, transportation and climate change so some of the experience may be transferable to enhancing business commitments in DRM. Incentive schemes can create an excellent opportunity for the public and private sectors to collaborate in public-private partnerships.

### 6.3.3 Making insurance work

Except for Africa, Asia is the continent least insured for disaster risks. The region lacks an insurance culture and market failures are attributed to the uneconomic insurability of disaster risk, insufficient underwriting information and pricing problems.

Although disaster risk financing and transfer instruments pose challenges for Governments, they can be tailored to encourage the private sector to invest in DRM. Governments can work more closely with insurance and reinsurance companies to overcome market failures and devise innovative programmes that can stimulate better use of insurance. Disaster risk financing and transfer instruments also need to be tailored to accommodate the special circumstances of SMEs. The public sector could work with insurance companies to provide lower premiums for resilient SMEs. Governments can bear part of the premium or become a reinsurer when adverse insurance market conditions otherwise prohibit coverage for small enterprises.

Other public sector initiatives can include the promotion of risk-based pricing over flat-rate premiums, and the use of multilayered approaches that spread the risk among the exposed company, the insurer, a reinsurer and ultimately government resources. These extended risk-sharing schemes have the potential to lower risk premiums. By bearing part of the risk, the insured organization has an incentive to invest in its resilience. More generally, the principle of linking insurance premiums to resilience standards can encourage a company to adopt sound risk management practices or to create a more resilient infrastructure.

### 6.3.4 Risk information

Effective disaster risk management requires a full understanding of the risk associated with a particular hazard and the vulnerable population exposed to it. Only then, can the risk be communicated and stakeholders can act to manage it. Reliable information about the risk and the conditions that influence it or the people exposed to it is essential. Unfortunately, this knowledge is often incomplete or not disseminated sufficiently to inform or engage entrepreneurs and business managers, or particularly, SMEs.

Disaster risk information is an integral element of any risk management strategy. It must be considered as important as any other information required by businesses in their operations. Disaster risk information can be provided to businesses economically without specific awareness campaigns or engaging in special activities if public authorities rely on existing distribution channels during their routine contacts with entrepreneurs and investors.

Public sector agencies associated with marketing local investment opportunities or other business advisory services such as business registration and entrepreneurial promotion certainly are conversant with local business environments. Their promotional information should contain disaster risk information. This transparent mechanism will increase the disaster risk awareness of entrepreneurs and investors and promote a locality's commitment to DRM as a safe place to do business. It may also stimulate potential business investors to initiate revised disaster risk assessments when they relocate into a different business environment.

The advances in information technology provide additional means by which Governments can develop and use risk information to benefit decision makers during critical periods of a disaster. If they are designed well, these same information channels can incorporate local data that would be useful for urban and land-use planning, or for coaxing the development of a locally relevant business continuity plan. The private sector can benefit from this DRM information by integrating it seamlessly into their ongoing business practices, enhancing their resilience capabilities at little additional cost.

There are also considerable opportunities for the private sector to contribute information and technology for safer local communities. Data generated by businesses or derived from their risk analysis can inform the government or contribute to public databases. Other data compiled by the private sector for business purposes, such as aggregated mobile phone GPS data that reveal the location or movement of people can be used for planning DRR. A strong regulatory framework that holds both the public sector and businesses accountable for disclosing reliable disaster risk information will contribute to the success of any information sharing mechanisms.

### 6.3.5 Support for small and medium enterprises

Small and medium enterprises are a dominant feature of the regional economy, comprising more than 90 per cent of private businesses. Any public-private partnerships for DRM will need to address the needs of these businesses as they tend to have fewer resources and more limited coping capacities to deal with crises. They are especially constrained when trying to recover quickly from a disaster because of limited DRM planning, few reserves or tenuous marketing and distribution arrangements.

Many SMEs are unprepared for disasters, and the majority of them are unaware of business continuity plans. This unfamiliarity emphasizes a crucial need to raise the awareness of the risks facing businesses, as well as proactively strengthening the DRM capacities of SMEs. Governments can play important roles to improve their resilience by initiating efforts to build capacities or by extending practical assistance. Public sector services can train SMEs to conduct risk assessments, or in methods to design and implement BCMs. Governments can lead public awareness campaigns in communities or localized areas that are particularly disaster-prone. In the routine conduct of civic responsibilities or official business with commercial establishments, public offices can facilitate access to relevant data and information about disaster risk. When there are limited resources and expertise in government agencies, international partners can provide technical assistance or other support to increase the resilience of SMEs. Similar initiatives to benefit SMEs can be supported through training or by business-to-business solutions that could be provided by large companies.

## **6.4** Working together through multi-stakeholder approaches

Effective DRM requires collaboration among different stakeholders working through bilateral and multilateral partnerships. Various arrangements with their different objectives can provide a range of benefits to all the parties involved while strengthening the overall resilience of society.

Partnerships between the private sector and non-profit organizations are becoming more relevant for DRM as previous charitable CSR contributions are supplanted by wards long-term strategic partnerships. With careful planning and shared objectives, they can produce profitable results for both parties. They can enhancing the reputation and brand values for companies, and generate a more stable resource base or increased efficiencies for their non-profit partners. Although partnerships between businesses and academic or scientific institutions are not new, they are underutilized to advance DRM. These institutions can conduct studies and deliver training or short courses for businesses. In return, businesses can support research that can be used by the businesses, government agencies and by local communities.

Public-private partnerships and other multisector arrangements can reduce the burdens of governments providing essential goods and services at critical times, enabling the public sector to focus on strategic priorities. Sharing DRM responsibilities can provide a more flexible use of resources while enabling more efficient and effective operations. However, joint agreements and collective efforts also can create problems in matters of coordination, differing goals and a lack of trust among partners. Governments need to be careful that they do not outsource public DRM functions to such an extent that they compromise the fulfillment of their legally obligated responsibilities. A successful partnership requires the appropriate allocation of resources, fair and equitable sharing of risk and the sufficient opportunities for beneficial returns among all the partners involved. It is important that all the public, private, non-profit, academic and community participants are aware and can accept each other's abilities and limitations so that common objectives can be achieved. Howsoever it is determined and managed, the leadership of a collective endeavour needs to guard against an over-estimation of its mission or assume exclusive or unwarranted capabilities. Partnerships need to be fit for designated purposes and will fail if they attempt to be all-encompassing or are mistakenly considered to be a competitive mechanism.

Given the many conditions that mould partnerships and the different attributes or limitations of potential members, it is difficult to provide a single blueprint to design an assuredly effective and

sustainable one. All stakeholders in a PPP or other multisector associations need to combine their efforts and resources, guided by recognized experience and documented best practices.

Multi-stakeholder forums or institutional platforms are useful means for exchanging good practices, strengthening coordination, developing professional and operational synergies and holding individual parties accountable for their respective responsibilities. They need to be strengthened, or as necessary established, at local, national, regional and global scales to promote the private sector's engagement with other DRM stakeholders. As occasions for sharing information and motivating additional commitments, they can address some of the major challenges of cross-sector collaboration in the evolving roles for intensified business involvement in DRM.

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Building resilience to disasters effectively will require the full engagement of the private sector as a prominent stakeholder. Governments need to raise the awareness of the role of the private sector in DRM across all sectors while also creating an enabling environment that will facilitate and motivate the private sector to assume more dedicated roles. Collaborative arrangements among businesses and all other risk shareholders will be essential for strengthening the resilience of Asia-Pacific societies. The private sector must, therefore, stand up to contribute to the crucial task of making societies more resilient, and be recognized as a critical component of building disaster resilience, as envisioned by the Sendai Framework for Disaster Risk Reduction.

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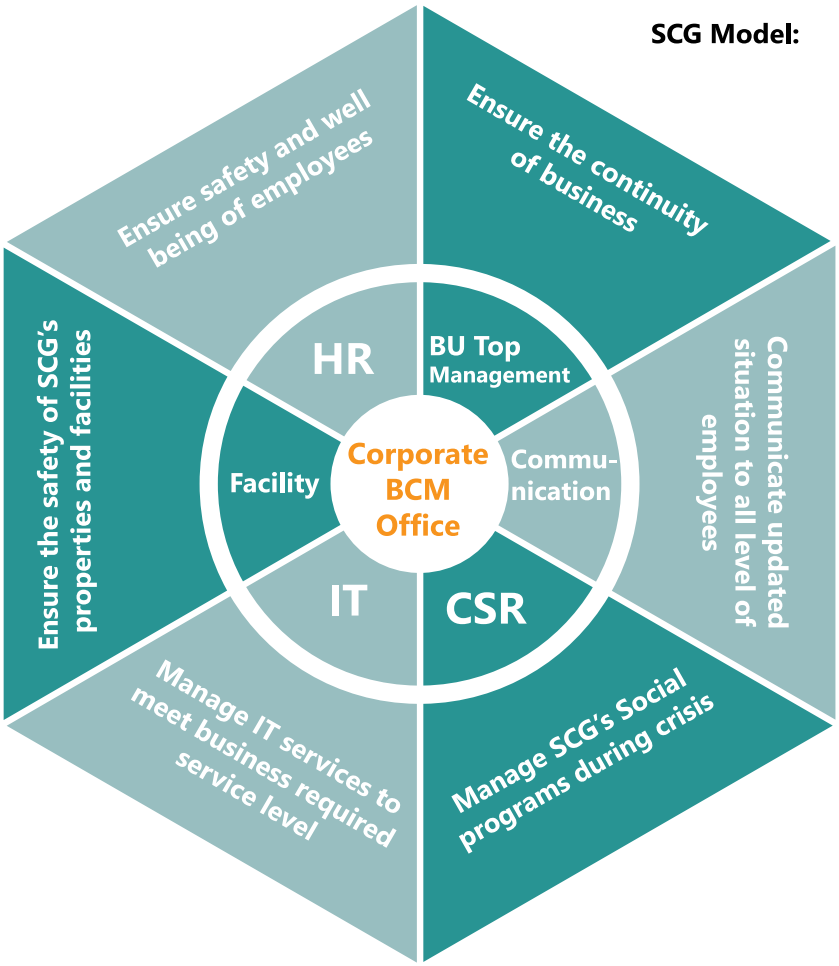
# Annexes

## **Annex I.** Three case studies on business continuity planning

**Case study 1:** Siam Cement Group business continuity planning, Thailand

The Siam Cement Groups (SCG) is a major Thai corporation that initially produced cement and sold other building materials for public infrastructure projects. As the second largest producer of cement in the country, SCG consists of more than 100 companies organized in five business groups trading in chemicals, paper, cement, building materials and distribution services.[1] The group employs approximately 24,000 employees in the Asia-Pacific region. The company has developed business continuity plans and was certified under the international BCM standard in 2011. Afterwards, a corporate BCM office was established to monitor possible risks to the company. The company's BCP was tested for the first time by the unprecedented Thai floods in 2011. Fortunately, a division of labor was introduced with a corporate crisis management team established comprising the BCM office, executive management, facilities, human resources, corporate communications, corporate social responsibility, and information technologies. The assignment of their distributed tasks follows.

**SCG Model:**




[1] *For more information about SCG's corporate BCM, contact suriyap@scg.co.th*

1. Corporate BCM office
   - Monitoring flood situation from available data sources
   - Analyzing and forecasting the situation
2. Executive management
   - Making decisions on the business issues
   - Ensuring that business can perform continually during the crisis
3. Facilities
   - Preparing all critical buildings and preventing them from being flooded
4. Human resources
   - Ensuring the well-being of all staff
   - Providing accommodation, transportation, food and other services to staff during crisis
5. Corporate communications
   - Continually updating the situation to employees with clear messages
6. Corporate social responsibility
   - Distributing relief supplies to affected communities
   - Implementing various CSR activities, such as "the big cleaning day"
7. Information technologies
   - Ensuring that IT work can be performed during the crisis

**Case study 2:** The Otagai Project, Thailand

The Otagai Project demonstrates close cooperation between Thailand and Japan in safeguarding SMEs from disasters caused by natural hazards. The project was proposed by the Japanese Government after the Chairman of Thailand's Strategic Committee for Reconstruction and Future Development and the Deputy Prime Minister of Thailand visited Japan in November 2011. The following month, Japan's Ministry of Economy, Trade and Industry (METI) and the Japan International Cooperation Agency (JICA) organized a seminar on Government Support Measures for SMEs – Recovery from Flood Disasters where the Government of Japan recommended a comprehensive policy programme. The resulting Otagai Business Continuity Project was assigned to the Department of Industrial Promotion in Thailand's Ministry of Industry and the National Economic and Social Development Board.

As otagai means "each other" or "together" in Japanese, the Otagai Business Continuity Project was a plan to help each of the countries when they face difficulties. The objective of the project was to promote strategic cooperation between the two countries through a joint business continuity concept that would span different working conditions. The plan would strengthen the countries' routine business activities during normal conditions and enable each to serve as a supplier to the other during crises. These mutually supporting contingent arrangements are intended to increase customers' confidence in both Thai and Japanese companies. The Otagai Project targets businesses located in the flood-prone industrial parks that cluster in Ayutthaya, Pathum Thani, Bangkok and Samut Prakan in Thailand..

The project pursues several strategies. The Japan-Thailand Sister Cluster Network builds relationships in three phases: a matchmaking initiative, creating a platform and providing financial support. Another strategy, the Cluster Sustainability Standard Setting, employs the THAICOBAN rating system to recognize both Thai and Japanese enterprises. The Financial Support: Business Fusion Fund for Innovation is a joint Thailand-Japan investment endeavour supported by local banks. The fund establishes reciprocal arrangements by which Thai companies support a Japanese industrial cluster of businesses while Japanese enterprises will do the same for the Thai industrial cluster.

A pilot project, Rice Valley, has been launched as a model that "promotes business competitiveness by a new standard of a management system about business continuity and its practical use". It was planned by METI with the objective to match Japanese technological expertise with the economical Indica rice variety grown in Thailand to develop new products that are more competitive in global markets. Moreover, these products can provide necessary alternatives or reserves if required after a disaster. Such a commercially motivated programme with strong BCP components can mitigate the impacts of supply chain disruptions during emergencies. The relationship also can develop further cooperation such as that which occurred between Niigata Prefecture in Japan and Nakhon Sawan Province in Central Thailand. A joint research team from Niigata University and Thailand's Kasetsart University is applying their innovative work in Nakhon Sawan with plans to implement similar projects in other Thai provinces.

**Case study 3:** Institutional support for the adoption of business continuity planning in Singapore

Among South-East Asian countries, Singapore has a highly developed awareness about disaster resilience of SMEs even though the country is less likely to suffer from severe disasters. Based on a survey conducted by Asian Disaster Reduction Center (ADRC, 2012), 57.6 per cent of SMEs in Singapore have BCPs in place, while more than half of the SMEs in other ASEAN countries have not adopted them. The Singapore Government believes strongly that the country's private sector must be prepared and resilient to become the world's business hub. Agencies responsible for disaster preparedness and BCP promotion include the Ministry of Home Affairs, the Disaster Recovery Institute Singapore (DRI Singapore), the Economic Development Board (EDB), the Singapore Business Federation (SBF), the Standards Productivity and Innovation Board (SPRING) and the Business Continuity Management Institute Singapore (BCMI). Most of the organizations and enterprises have developed their BCPs based on the Singapore Standard (SS540) under the control of the Management Systems Standards Committee. Other standards for specific sectors are the Business Continuity Management Guideline 2003 by the Money Authority of Singapore and the Singapore Stock Exchange Business Continuity Policy Rule 4.6.21.

Information about business continuity management (BCM) is widely available on various websites of government agencies (e.g. SPRING, SBF) and BCM-related organizations (BCMI, Singapore BCM Standard). For instance, the Flu Pandemic Business Continuity Guide can be downloaded from the SPRING website. Moreover, BCM templates and guidelines for the SS540 examination can be accessed on the Singapore BCM Standard website.

The Government announced the National BCM Programme in 2008, allocating SGD 30 million ($21.2 million, in 2008 dollars) and appointed the Singapore Business Federation to be the national focal point. The programme objective was to improve BCM resilience of SMEs and to strengthen their overall economic competitiveness. This initiative further encouraged SMEs to obtain BCM certification based on the Singapore Standard. With support from SPRING, SMEs can obtain a subsidy ranging between 50 per cent and 70 per cent to become certified in business continuity management under the Singapore Standard SS540. The Group Director of Quality and Standards of SPRING emphasized the importance of BCM:

"The financial and reputational implications of a business disruption can be very serious. BCM helps companies build up their resilience to handle events that pose a threat to their businesses. Having BCM measures in place enables them to recover faster, thus minimizing losses. Good crisis management also enhances a company's reputation as a reliable partner. This helps it to secure

business opportunities while boosting the company's growth." [2]

In January 2013, the SBF organized the Business Continuity Management Awards. Twenty Singaporean companies received awards, and SBF appointed six companies as the first BCM Ambassadors in a new recognition programme. By January 2013, more than 140 BCM activities were organized by the SBF, which have benefited more than 9,600 firms.

## **Annex II.** Microinsurance collaboration in Indonesia

The Government of Indonesia and the NGO, Mercy Corps Indonesia, collaborated on a programme initiated in 2014 to see how risk financing could be advanced by promoting a sustainable public-private partnership. The Indonesia Liquidity Facility after Disaster (ILFAD) developed an innovative solution for risk financing for disaster recovery in partnership with banks, microfinance institutions and insurance companies. The objective was to facilitate the injection of cash into disaster-affected areas rapidly through locally managed and sustainable financial service systems.

Despite the circumstances that make Indonesia very exposed to natural hazards and frequent disasters, community awareness about disaster preparedness remains limited in many areas. There is often even less familiarity about the readiness of financial institutions and their capacities to respond effectively in the aftermath of disasters. To overcome these problems, training and basic knowledge were provided to support microfinance institutions (MFIs) in building their capacities to become more resilient to disasters. Crucially, locally managed facilities were created to provide the cash needed in local communities for recovery activities. The ILFAD programme collaborated with 135 MFIs and facilitated the development of these liquidity mechanisms by working with banks and insurance companies.

There were challenges encountered in gaining access to loan capital since this exceeded the capacities of most MFIs in Indonesia. More generally, disaster-related financial products were limited in their number, scope and coverage. However, as the programme proceeded, the demand for disaster recovery financial products grew and continued to increase exponentially. There have been related benefits too, as disaster awareness is on the rise among households, more people realize that they need protection against disasters that can be sustained. There also is a growing need to provide tailored disaster preparedness training and basic guidance for financial literacy.

The results demonstrated that there were benefits from a public-private model based on shared value partnership and a DRR savings product implemented through the market. The key elements for success were a locally tailored sustainable solution to disaster management and the facilitation of efforts that could yield a long-term impact and be sustainable. This pilot project demonstrated that as a public-private partnership, the ILFAD model has a potential. Similar DRR savings plans are being considered for replication by additional MFIs in Indonesia, with possible value elsewhere in the Asia-Pacific region.

Further information about the programme can be obtained from the Mercy Corps Indonesia Programme Director for DRR-CCA, by an email request to bpathak@id.mercycorps.org.

[2] *http://www.spring.gov.sg/NewsEvents/PR/Pages/Singapore-Business-Federation-launches-BCM-Ambassadors-Programme-and-promotes-new-Singapore-Standard-ISO-22301-20130124.aspx#.Ul5eflO4EdU*

# **Annex III.** A case of business and non-profit partnership: AXA and CARE International

## Context

Since 2011, the AXA Group has joined forces with CARE International, the development NGO, to help vulnerable populations prepare better for climate-related risks. This partnership reflects AXA's corporate responsibility policy and its primary interests in risk research and education.

AXA and CARE worked together on a series of programmes to raise awareness and encourage preventive actions related to disasters resulting from natural hazards. These programmes target communities particularly exposed to these risks in developing economies, and they aim to reduce the human and economic impacts of resulting disasters. Project activities include campaigns to raise public awareness about risks, improved early warning systems, and training to reinforce communities' response capacities. In a specific mitigation activity, mangroves were planted as a natural barrier to limit the effects of future disasters. The joint activities are being implemented in Benin, Indonesia, Madagascar, Mali, the Philippines and Viet Nam.

Since 2011, €2.7 million has been invested by AXA in these projects, benefiting about 756,000 people in Asia and Africa. In 2014, AXA and CARE renewed their partnership until 2016 with a financial commitment of €2.3 million, targeting 1.2 million beneficiaries and expanding their joint activities into Central and South America.

### The Philippines project

AXA supported CARE's Natural Disaster Risk Reduction Project and emergency activities in the Philippines for 16 months, from June 2010 through October 2011, with a total budget of €501,568. There were 54,000 direct beneficiaries.

### Objectives

The project, Advancing Safer Communities and Environments against Disasters, was created to increase resilience and reduce the vulnerability of communities, schools and local government units in high-risk areas. It focused on consolidating and enhancing previous disaster risk reduction and climate change adaptation accomplishments.

The CARE project in the Philippines engaged schoolchildren to create a local culture of safety and disaster risk reduction that reached their families and into their communities. The project worked with the public school system as a primary strategy since children spend many hours at schools, which are particularly vulnerable to disasters. Schools also are important venues for raising public awareness and building a culture of safety and disaster risk reduction. They provide opportunities to involve children at an early age, but they also serve to extend information throughout a community for people of all ages. Schools also serve as temporary shelters in most high-risk areas during severe natural hazard events.

### Results and impacts of the project

Communities, municipal and provincial local government units, civil society organizations, and businesses consolidated project gains, replicated sustainable disaster risk reduction activities, and institutionalized DRR. Public schools in three municipalities invested in the creation of safer schools and mainstreaming DRR in the school curriculum. All project stakeholders and the major DRR actors developed a common DRR and CCA agenda, shared DRR tools and knowledge and coordinated their various roles to improve the quality of DRR at national and local levels.

## Sample activities

### Teaching about natural disasters

The pupils of 89 schools in the municipality of Calabanga were given theoretical and practical lessons on what to do in the event of a tsunami, flood or earthquake. They were taught how they could identify any dangers they might have to face. AXA's employees from Turkey attended these courses and shared the experience of an earthquake drill from their country with the children.

### Simulating a typhoon alert

In Calabanga, typhoon simulation exercises are frequently conducted with the assistance of the local authorities. The programme aimed to teach the local populations the correct responses. The evacuation of the most vulnerable areas is now faster and more efficient; residents know where the strategic gathering places are, and a transportation system has been arranged to move residents to safety. Three AXA "Hearts in Action" volunteers participated in a typhoon alert exercise that involved several villages.

### Local support and assistance

AXA Tech sponsored five volunteers to go to the Philippines where they supported the CARE humanitarian assistance mission after Typhoon Haiyan by providing emergency telecommunication services. AXA Philippines also provided emergency assistance to its employees, agents and their families by offering flights to safe areas and financial assistance to cover the cost of necessities immediately following the disaster.

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