STRENGTHENING DISASTER AND CLIMATE RESILIENCE OF SMALL & MEDIUM ENTERPRISES IN ASIA

Thailand

ENABLING ENVIRONMENT & OPPORTUNITIES
The iPrepare Business facility for engaging the private sector in Disaster Risk Management is a joint initiative by the Asian Disaster Preparedness Center (ADPC), the Asian Development Bank (ADB) through the Integrated Disaster Risk Management (IDRM) Fund and Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH within the framework of the Global Initiative on Disaster Risk Management (GIDRM). It focuses on building disaster-resilient businesses in the region through partnerships to strengthen the resilience of the private sector, particularly SMEs; providing technical assistance in strengthening resilience on a demand-driven basis; supporting governments in strengthening the enabling environment that promotes risk sensitive and informed investments by private sector; and facilitating knowledge sharing at the regional and national levels.

The Asian Disaster Preparedness Center (ADPC) is an independent regional non-profit organization that works to build the resilience of people, communities and institutions to disasters and climate change impacts in Asia-Pacific. Over the past 30-years, ADPC has expanded its scope and diversified its operations for a programmatic approach that offers long-term and sustainable solutions to addressing the underlying causes of disasters and climate change risks.

The Asian Development Bank (ADB) is a multilateral development finance institution dedicated to reducing poverty in Asia and the Pacific. ADB assists its members, and partners, by providing loans, technical assistance, grants, guarantees, and equity investments to promote social and economic development. With support from the Government of Canada, ADB established the Integrated Disaster Risk Management (IDRM) Fund in 2013, to assist the development of proactive IDRM solutions on a regional basis within ADB’s developing member countries in Southeast Asia, including Cambodia, Indonesia, Laos, Myanmar, Philippines, Thailand and Viet Nam. The Fund provides a strong mechanism for supporting ex ante investment in IDRM and complements the existing financing modalities of ADB for supporting ex post relief and recovery activities.

In order to respond more effectively to the global challenges posed by disaster risks, the German Government, led by the Federal Ministry for Economic Cooperation and Development (BMZ), has founded the Global Initiative on Disaster Risk Management (GIDRM). The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ GmbH) has been commissioned to manage the GIDRM. The aim of the Global Initiative is to bring together German and regional experts from the public and private sectors, civil society and the academic and research community, to facilitate mutual learning across national boundaries as well as to develop and pilot innovative disaster risk management solutions. The Global Initiative focuses on three priority areas including Disaster Response Preparedness and Civil Protection; Critical Infrastructure and Risk-sensitive Economic Cycles; and Early Warning Systems.

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Towards a Road Map for SME Disaster Resilience in Thailand

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Acronyms

ADB  Asian Development Bank
ADPC  Asian Disaster Preparedness Center, Bangkok
AEC  ASEAN Economic Community
APBSD  ASEAN Policy Blueprint for SME Development
APEC  Asia-Pacific Economic Cooperation
ASEAN  Association of Southeast Asian Nations
ASEC  ASEAN Secretariat
BOI  Board of Investment
BCP  Business continuity plan / planning
BCM  Business continuity management
BMZ  German Ministry for Economic Development and Cooperation
CCA  Climate change adaptation
DBD  Department of Business Development
DDPM  Department of Disaster Prevention and Mitigation
DPM  Disaster prevention and mitigation
DRR  Disaster risk reduction
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<td>Industrial Estate Authority of Thailand</td>
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<td>Ministry of Natural Resources and Environment</td>
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<td>NCIF</td>
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<td>OCC</td>
<td>Office of Climate Change, Office of Natural Resources and Environmental Policy and Planning (ONEP), MonRE</td>
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<td>ONEP</td>
<td>Office of Natural Resources and Environmental Policy and Planning, MoNRE</td>
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Key Terminology

**Business continuity management (BCM)** – (ISO 22301:2012)

“Holistic management process that identifies potential threats to an organization and the impacts to business operations those threats, if realized, might cause, and which provides a framework for building organisational resilience with the capability of an effective response that safeguards the interests of its key stakeholders, reputation, brand and value-creating activities.”

**Business continuity plan (BCP)** – (ISO 22301:2012)

“Documented procedures that guide organizations to respond, recover, resume, and restore to a pre-defined level of operation following disruption.”

**Coping capacity** – (UNISDR)

“The ability of people, organizations and systems, using available skills and resources, to face and manage adverse conditions, emergencies or disasters.”

**Disaster** – (UNISDR)

“A serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources.”

**Disaster risk management (DRM)** – (UNISDR)

“A serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources.”

(Note: While the UNISDR definition of disaster is used in this report, as widely agreed international terminology, it is noted that s.4 of Thailand’s Disaster Prevention and Mitigation Act 2007 (as translated into English) defines the term differently. As is the case in many national laws, disaster is defined as a range of hazards, both natural and human-made, rather than the consequences of those hazards, as in the UNISDR usage. In the Thai law a disaster is defined as “fire, storm, strong wind, flood, drought, epidemic in human, epidemic in animals, epidemic in aquaculture, and epidemic in plants and other public disaster either natural disasters or human-made disasters, accidents or all other incidents that effect to life, body or properties of the people, of the government. And in this regards, air threats and sabotages are also included.” This makes it clear that the law intends to deal with multiple hazards.)

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1 UNISDR Terminology 2009 (also defines disaster risk, emergency response, exposure, hazard, mitigation, preparedness, recovery, risk, vulnerability etc.). Available at http://www.unisdr.org/we/inform/terminology.
Disaster risk reduction (DRR) – (UNISDR)

The concept and practice of reducing disaster risks through systematic efforts to analyse and manage the causal factors of disasters, including through reduced exposure to hazards, lessened vulnerability of people and property, wise management of land and the environment, and improved preparedness for adverse events.”

Emergency response – (UNISDR)

“The organization and management of resources and responsibilities for addressing all aspects of emergencies, in particular preparedness, response and initial recovery steps.”

Resilience (IPCC2)

“The ability of a system and its component parts to anticipate, absorb, accommodate, or recover from the effects of a hazardous event in a timely and efficient manner, including through ensuring the preservation, restoration, or improvement of its essential basic structures and functions.”

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Executive Summary

A disaster-resilient enterprise is one that has the capacity to anticipate, resist or absorb, and then accommodate or recover from a hazard that affects it, returning to at least the equivalent state of economic health that it enjoyed beforehand, and continuing to grow and develop without detrimental long-term effects.

This report presents the results of a survey on the disaster resilience of small and medium enterprises (SMEs), and provides a strategic policy analysis of the enabling framework for SME disaster resilience in Thailand. It is the result of cooperation between the iPrepare Business facility, its key country partners, the Office of Small and Medium Enterprises Promotion (OSMEP) and Department of Disaster Prevention and Mitigation (DDPM), Royal Thai Government, and other government and private sector organizations in Thailand.

The country report is also part of a regional project, “Strengthening the Disaster Resilience of Small and Medium Enterprises in Asia”, which is being implemented by the iPrepare Business facility and country partners in Indonesia, the Philippines, Thailand, and Viet Nam, with the support of the Asian Development Bank (ADB) Integrated Disaster Risk Management Fund, a fund financed by the Government of Canada, and the German Ministry for Economic Development and Cooperation (BMZ) through the Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ) within the framework of the Global Initiative on Disaster Risk Management (GIDRM).

Specifically, the report is based on desk research on relevant laws, policies, institutions and secondary literature, consultations during a country mission in August 2015, and the Thailand SME Resilience Survey undertaken as part of the project. It is divided into 6 parts.

Part 1 looks at what we mean by disaster-resilient SMEs, then frames the discussion in terms of the two main categories of risk that SMEs face – (1) shared community disaster risk, and (2) business continuity disaster risk. It proposes that national systems of disaster prevention and mitigation (DPM), including climate change adaptation (CCA), provide the most effective and efficient legal, policy and institutional basis for improving SME resilience to shared community disaster risks. For business continuity disaster risks, the national laws and institutions targeted to broader SME development provide the best vehicle for policy intervention. The two guiding questions then asked for the Thailand policy analysis are:

1. To what extent do climate and disaster prevention and mitigation systems either include SME representatives at national level, or integrate SMEs into local institutions, risk awareness campaigns, emergency response and recovery operations at local level?

2. To what extent is climate and disaster resilience factored into the picture of an economically healthy SME through policy schemes targeted at SME development and promotion?
Part 2 examines what we know about Thai SMEs economic structure from national statistics, and what this can (and cannot) tell us about their disaster risk. In summary, according to OSMEP data from the year 2014, SMEs make up 99.73% of the total 2.74 million enterprises in Thailand. Amongst SMEs, 99.53% are small and only 0.47% are medium, according to the national classification system (which is based on number of employees and fixed assets, but varies according to industry sector—see Figure 2). In 2014 SMEs employed 80.3% (approximately 10.5 million) of all employees of enterprises, but they accounted for a more modest 39.6% of GDP. SMEs are concentrated in the trade sector (wholesale and retail trade, automotive repair) which accounts for 42.37% of SMEs, then the service sector (including hotels and restaurants), with 38.88% of all SMEs, followed by manufacturing, with 18.1% of SMEs. Although only 1.17% of SMEs are in the agricultural sector, they nevertheless make up over 99% of the enterprises in that sector, so they are also the key to agricultural sector development. OSMEP has also estimated that the SME economy continued to grow in the first half of 2015, at a rate of between 3.0% and 4.4%. SMEs are thus a vibrant and major part of Thailand’s economy, and their resilience to disaster is an important aspect of continued economic growth and development for the country as a whole.

Part 3 presents the result of the SME Resilience Survey of 425 enterprises—47% small, 35% medium, and 18% large. The survey found that respondents were most concerned about the disruptive effects of floods, then regional or global economic crisis, with fire, civil unrest, and power blackouts also of high concern, for both anticipated and experienced disruptions. These findings indicate that SMEs in Thailand are likely to be most receptive to an all-hazards approach to disaster resilience rather than one focused on natural hazards only.

Such disruptions had a major impact on business continuity, profitability and long-term viability of SMEs. The 2011 floods and other past disasters’ main business impacts were reported as lengthy cessation of operations (45 days on average in the 2011 floods) and high costs of damage (29.9 million Baht on average in 2011). More precisely the reported disruptions meant: employees were unable to go to work; enterprises were unable to deliver products; there was damage to facilities and equipment; suppliers were not able to deliver materials/services; and raw materials were damaged.

The main business continuity management (BCM) tool the survey asked about was the adoption of written Business Continuity Plans (BCPs). Although only about 15% of small enterprises and 21.5% of medium enterprises surveyed had a written BCP, this compared favorably with a 2012 survey that showed none of the Thai SME respondents had a BCP. Motivation for using or not using BCPs were:
For enterprises without a BCP, the main reasons for not preparing one were lack of knowledge or capacity to prepare one or, of more concern given the number of major business disruptions in recent years, a belief that they were not likely to experience any disaster disruption. BCP was of interest to them if it could help them avoid economic loss in the event of business disruption, to meet customer requirements, to be seen as having good business practices, experience in a previous disaster, and gaining client confidence. SMEs need to see a competitive advantage in developing a BCP.

The enterprises that had developed written BCPs had done so to avoid economic losses, to gain client confidence, and to protect employees, as the top reasons, along with ensuring they could meet commitments during disruptions, customer requirements and previous disaster experience; and they had found their BCPs useful in the event of actual disruptions. Just over one-third of the group with BCPs reported their BCP had connected to the community or local disaster preparedness plan, suggesting that BCP of itself may encourage greater engagement with the local disaster prevention and mitigation system due to increased awareness of risks. This finding was reinforced by the fact that enterprises with BCPs also reported more use of risk financing mechanisms.

Setting aside the question of BCPs, the SMEs surveyed also made limited use of written disaster preparedness plans. Most of the small enterprises, and almost half of the medium enterprises, did not have any written disaster preparedness plans. To the extent such plans were used at all, the main types were plans concerned with emergency response, evacuation, risk assessment, and emergency communication.

In terms of BCM and disaster-resilience capacity, fewer than one in five respondents had attended either BCP-related or DPM-related training. This, along with the low uptake of BCP and the low level lack of other emergency planning, indicates that SME disaster resilience may be improved by training on both DPM and BCP, especially when the two are linked as key elements of business continuity. Respondents also supported tax and financial incentives as key measures the government should provide to encourage SMEs to prepare BCPs, along with consultancy services or incentives for BCM capacity building, and non-financial incentives such as certification schemes and award recognition.

In terms of existing risk financing mechanisms, surveyed enterprises reported their top mechanisms included fire insurance, motor/car insurance, insurance for employees, and natural catastrophe insurance. Small enterprises had fewer risk financing mechanisms than medium and large enterprises. They tended to deal with disruptions and emergencies by: reducing expenses; using savings; and using loans from banking institution, as well as using other types of loans with interest, and support from family and friends. Large (47%) and medium (35%) enterprises were more likely to have insurance mechanism to deal with business disruption. The survey sample group also indicated that there was a large gender gap in SME leadership, with only 25% of the SMEs surveyed being led by women. The government may need to take this gender imbalance into account in both the roadmap process and in future policies to promote and support SME disaster resilience.
Part 4 and Part 5 of the report overview the laws, policies and institutions underpinning (a) the companion systems of disaster prevention and mitigation (DPM) and climate change adaptation (CCA) and (b) the policy implementation mechanism for SME promotion, support and development as business enterprises. This analysis looks for opportunities for SME participation, awareness of SME disaster-resilience within the mandates of these institutions, and the extent to which these systems interact systematically to support SME disaster resilience. The overall picture this analysis presents, is that:

- SME needs could be better addressed within both the DPM and CCA systems;

- Although OSMEP and other SME support institutions demonstrated a high capacity to support SME disaster recovery following the 2011 floods, it could usefully focus on the disaster risk reduction, prevent and mitigation component of business continuity to prevent such loss and damage in future disasters; and

- At present the DPM/CCA and SME support institutions appear to work in separate spheres, whereas it is likely that SME disaster resilience can be developed most effectively if the DDPM, CCA, OSMEP and other SME support institutions are able to work more closely towards this policy objective, with the benefit of each others’ data and spheres of expertise.

Part 6 identifies stakeholders and issues that could be addressed during an SME disaster resilience road mapping process, as a way to break down the global question of “SME disaster-resilience” into bundles of concrete actions, based on the findings of this report. The key areas of focus it proposes are:

- The roadmap process and stakeholders: Issues: inclusion of SMEs in country regions and women heads of SMEs (a minority); development of SME organizations for ongoing participation; inclusion of DDPM, CCO and the range of government institutions involved with SME finance, insurance and development.

- Legislative and Statistical base for government SME support: Issues: review of statistical data on SMEs; and potentially creating a micro enterprise category.

- Multi-hazard BCM: Issues: how to strengthen SME capacities in all-hazard BCM; SME disaster resilience needs assessment by sector; training and support for BCM and other incentives.

- Institutional cooperation mechanisms for response and recovery support: Issues: integration of DDPM, OSMEP, DIP and the financial institutions support for SME disaster resilience as a cross-cutting issue; institutionalizing support for SME emergency response and initial recovery; institutionalizing planning for future recovery cooperation.
Private Sector and SME Capacity. Issues: ways in which Government institutions can access existing private sector capacity and improve organizational structures for SMEs to tackle disaster resilience.

Insurance. Issues: reviewing extent of SME use of insurance or other risk financing mechanisms in the context of the National Catastrophe Insurance Fund (NCIF).

Disaster prevention and climate change adaptation - reducing underlying risks. Issues: using risk mapping at regional, city and local levels, to provide the necessary technical data for enterprise and area BCPs; raising SME awareness of climate and disaster risk; ensuring BCM and BCP standards and training materials take an all-hazards approach.
Introduction

This report is a strategic policy analysis of the enabling framework for disaster-resilient small and medium enterprises (SMEs) in Thailand, which also includes the results of a 2015 SME Resilience Survey undertaken as part of the same project.

The report takes into account relevant laws, policies, and government institutional frameworks of Thailand, as well as private sector initiatives that interact with government policy. Although the focus is on SME business continuity in the face of the major natural hazards that often cause disasters in Thailand, including a projected worsening of weather hazards due to climate change, the report adopts a multi-hazard approach that encompasses technological and mixed hazards. It also recognizes the importance of general or economic resilience of SMEs and the policies to support this, as the underlying economics affecting SME profitability and development also impact their disaster resilience. For example, SMEs need access to finance for basic business development in normal times. They may also need access to disaster risk financing to cope with devastating disaster losses, but risk financing alone will not ensure their long-term business continuity. Many aspects of SME disaster resilience are an interaction between the underlying economic health of the enterprise, and measures taken to reduce disaster risk and survive disaster shocks. This brings together two policy pillars that are present in Thailand, and indeed in most other ASEAN countries, but which rarely have cause to interact. The first is the policy framework to develop and promote SMEs as business enterprises. The second is the national framework for disaster prevention and mitigation.

The purpose of the report is to identify the main disaster risks for SMEs in Thailand, to report on the SME Resilience Survey findings, and then consider aspects of the enabling environment for SME disaster resilience that are working well, as good practice examples in the national and regional context, as well as to identify areas that could be enhanced through stronger policy support or resources, and new approaches that might be considered as part of a Thailand roadmap for SME disaster resilience. It is based on:

- desk research on laws, policies and secondary resources
- an SME survey undertaken by ADPC in Thailand from August – October 2015; and
- a country mission by the international consultant in August 2015 that included discussions with partners and other stakeholders concerning implementation of policy responsibilities, and both government and private sector initiatives.
This report is just one part of a government and stakeholder process towards developing a roadmap during the remainder of 2016 for increasing Thai SME resilience to disasters. It is also part of a much broader regional project being implemented by the iPrepare Business facility, called “Strengthening the Disaster Resilience of Small and Medium Enterprises in Asia Project,” (the regional project), which includes Indonesia, the Philippines, Thailand, and Viet Nam. The project aims to build disaster-resilient enterprises by: 1) identifying actions to strengthen resilience of SMEs; 2) providing technical assistance in strengthening resilience to selected SMEs on a demand-driven basis; 3) supporting governments in strengthening the enabling environment that promotes risk-sensitive and informed investments by SMEs; and 4) facilitating knowledge sharing at the regional level.

In Thailand, the iPrepare Business facility is working with partners from the government and private sector in project implementation. The main government partners are the Office of Small and Medium Enterprise Promotion (OSMEP) and the Department of Disaster Prevention and Mitigation (DDPM). Other public organizations involved are the SME Bank and the Department of Revenue. Private sector partners are Thai SME Council, Isuzu Motor (Thailand) Co., Ltd., and Toyota Cooperation Club.

A key component of the regional project has been an SME Survey in each project country of SME perception of risk, experience of disasters, preparedness for likely hazard events, and business continuity planning for mitigation and recovery. The preliminary learning from the country policy projects was shared in a regional forum in April 2016, which now feeds into a national roadmap process for SME disaster resilience in each project country. A regional project synthesis report will also be prepared. The regional project is supported by the ADB’s Integrated Disaster Risk Management Fund, financed by the Government of Canada, and the German Ministry for Economic Development and Cooperation (BMZ) through the Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ) within the framework of the Global Initiative on Disaster Risk Management (GIDRM).
SMEs play a vital role in all the ASEAN economies, making up the vast majority of enterprises (between 88.8 and 99.9 percent), and contributing significantly to national employment (between 51.7 and 97.2 percent), across all economic sectors and in both rural and urban areas. They also provide significant economic opportunities for women and youth, and account for a substantial slice of GDP, between about 30-35 percent on average. In contrast to their numbers and share of employment, however, their share of total exports remains small, at between 10.0 and 29.9 percent, and they have thus been identified as requiring additional support for development and promotion.

Regional policy support for SMEs through APEC, ASEAN and other organizations will be considered in a regional project synthesis report to be completed later in 2016.

The concept of resilience can be applied to economic shocks and SME reactions to them, but is also now widely used to talk about the capacity of people and communities - including enterprises - to prepare for, cope with, and recover from, challenges such as major natural hazards. A disaster-resilient enterprise is one that has the capacity to anticipate, resist or absorb, and accommodate or recover from a hazard that affects it, returning to at least the equivalent state of economic health that it enjoyed beforehand, and then continuing to grow and develop without detrimental long-term effects.

In addition to purely economic and business challenges, SMEs in Southeast Asia also face business disruption, economic loss

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3 ASEAN. 2015. “ASEAN Strategic Action Plan for SME Development 2016-2025”. P.1. (In fact these ASEAN figures refer to Micro, Small and Medium Enterprises (MSMEs) – but for these purposes MSMEs are equated with SMEs.)
6 UNISDR Terminology 2009, at http://www.unisdr.org/we/inform/terminology
and sometimes complete closure as a result of the impacts of natural hazards, such as the 2011 floods in Thailand and neighbouring countries. Hence this report aims to identify some of the best ways to support Thai SMEs disaster resilience, based on existing practice in Thailand, and the additional potential of current frameworks.

What is disaster resilience?

A disaster-resilient enterprise is one that has the capacity to anticipate, resist or absorb, and then accommodate or recover from a hazard that affects it, returning to at least the equivalent state of economic health that it enjoyed beforehand, and continuing to grow and develop without detrimental long-term effects.

Although the word ‘disaster’ is widely used to refer to large-scale natural hazards, when used in the disaster prevention and mitigation context, it refers not to the hazards themselves, but to the effect that they have on communities, including SMEs. A widely accepted definition of disaster is:

*A serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources.*

The terms ‘hazard’ and ‘disaster’ are not restricted to natural phenomena and their effects, but also include technological or human-made hazards, which also often compound the effects of natural events to create mixed hazards that result in worse disasters. For example, flooding may result in the spread of dangerous pollutants if industrial or agricultural premises have not adequately protected chemical supplies from floodwaters.

Analysis of SME disaster risk also needs to consider the extent to which risks from climate change are taken into account, both by SMEs themselves and by government policies intended to support SME resilience and development. Thus, the terms ‘disaster risk’ and ‘climate and disaster risk’ are both used in this report to describe the natural hazards that SMEs need to consider, while noting that climate risk alone does not describe all relevant natural hazards (e.g. earthquakes).

The aim of the regional project is to address, so far as possible, the full range of physical hazards or their consequences that SMEs are likely to face, and which may affect their development, profitability or survival.

A key part of becoming disaster–resilient is the idea of disaster risk reduction (DRR), as resilience includes the ability to anticipate and prepare for foreseeable hazards so that they do not become disasters. It includes actions to prevent hazards occurring where possible, to reduce vulnerability or exposure to them, or to take protective measures to mitigate the effects of hazards. It also means having the capacity to cope with disasters when they occur, through preparedness and effective emergency response, including contingency plans, as well as to have support mechanisms in place for full recovery. Thus, disaster–resilience for SMEs is not just about how they respond to hazards and recover from disasters, it is also about SMEs assessing their underlying disaster risks and reducing them to an acceptable level, as part of business continuity management.

Characterizing SME disaster risk in the policy context

The underlying question of this report is how policy interventions can promote and support SMEs to attain disaster–resilience. In this regard it is therefore helpful to divide the disaster risks faced by SMEs into two broad categories: (1) shared community disaster risks and (2) business continuity disaster risks.

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7 The following terms are defined according to UNISDR Terminology 2009, available at http://www.unisdr.org/we/inform/terminology: disaster risk reduction, emergency response, exposure, mitigation, preparedness, recovery, vulnerability.
1. Shared community disaster risks

SMEs, even more so than large enterprises, are physically embedded in urban and rural communities (although some are now part of industrial estates and special economic zones). This means that their exposure to natural and other large-scale local hazards is, by and large, the same as that of the communities where they operate. Thus, many aspects of promoting disaster resilience for SMEs can be done through the same policy tools as are used for the general population. The main such tools are the national and local DPM system laws, policies and institutions, including those addressing climate change adaptation, and disaster risk financing.

In promoting disaster-resilience for SMEs regarding shared community risks, there are two key areas for government policy focus:

**SME inclusion in the local DPM system**

SME owners and employees need to be aware of the hazards in their locality and how to reduce their risk from them. This may include SME participation in local disaster risk assessments, community based disaster risk reduction programmes, or public awareness campaigns on local risks that are targeted to or inclusive of SMEs. SMEs may need to participate actively in early warnings systems, or opt in to a system to ensure they receive such warnings, especially if they are located in industrial parks or special economic zones where warnings aimed at residential communities may not be received or heard.

Disaster preparation for SMEs also needs to include fire, earthquake (where relevant) and other emergency drills as necessary, to ensure employees’ safety. Preparation may also need to include contingency plans to move stock and/or plant and equipment to a safe location in the event of flood or typhoon warnings. Many of these are the same measures as are needed for the surrounding community, and micro enterprises operating in community hubs may be equally well served by broad community-focused DPM. However, small and medium enterprises, especially those situated outside settlements, may not always be regarded as part of the ‘community’ for such purposes, but may also not be part of industry organizations that focus on larger enterprises. It cannot be assumed that SMEs have access to the relevant information or expertise on disaster risk reduction and emergency response.

**Risk based planning to reduce hazard exposure of SME concentrations.**

The role of local development planning in determining the location of settlements and enterprises within them can reduce SME exposure to hazards, (e.g. land use planning to avoid flood plain settlement, or else public works to ensure adequate drainage or water diversion). While a broad examination of local risk governance is outside the scope of this project, there are some aspects of SME geographical exposure that can realistically be tackled. These concern location planning for new SME concentrations and special measures to manage risk in established concentrations of SMEs. For example:

- National laws establishing industrial estates could require that natural hazard risks and climate change projections are part of site/locality risk assessment for planned new areas where the intention is to concentrate enterprises. In Southeast Asia, this will apply particularly to the manufacturing and technology sectors, in which there are very high numbers of SMEs. A related policy initiative could target risk assessment of existing industrial estates, working with the local enterprises, and initiate remediation or mitigation measures for high risk localities.

- Local governments could potentially identify other high-risk localities with existing SME concentrations, such as shoreline retail and tourist precincts. The aim would then be to identify ways to reduce their exposure, or reduce their risk of damage from local hazards. For example, in development planning for new settlements, shoreline construction exclusion limits could be initiated. In established shoreline settlements, other regulatory innovations might be more practicable to reduce risk from sea level rise and typhoons, such as raising...
or strengthening buildings, creating storm shelters, or constructing sea dykes. These measures would equally benefit the surrounding community. For SMEs this type of initiative would be likely to target the retail and tourism sectors, in which there are also large numbers of SMEs.

2. Business continuity disaster risks

In addition to shared community disaster risks, SMEs may have particular vulnerabilities due to their industrial sector, type of activities or enterprise characteristics, as well as the nature of their supply chains and markets. These can be described as business continuity disaster risks. For example, the agricultural sector can suffer disaster due to drought, or the timing of heavy rain or storms, or crop pests, which have little effect on the communities where they are based. Small retail businesses may lose uninsured stock due to floods or fires, an economic impact lasting well beyond the hazard itself, or they could face loss of business due to prolonged power cuts caused by emergencies elsewhere. Many businesses may face major disruptions if road access is blocked or roads washed away, affecting their ability to take produce or merchandise to markets; and in manufacturing they may have difficulty obtaining raw materials or parts if their own suppliers are devastated by a disaster.

The very fact of being business enterprises makes SMEs vulnerable to specific economic loss and damage even from hazards that affect the whole community. Not only do they risk losing goods and assets, as do residents, but both owners and employees face the risk of short or long term loss of income if a disaster seriously disrupts their ability to operate in their normal premises (e.g. due to flooding or blocked physical access, earthquake-damaged premises that become unsafe, loss of communications, disrupted water or electricity supply), or if it negatively impacts their supply chains, distribution or service networks, or demand for their goods or services in a disaster-affected area. Loss of SMEs from a community following a disaster also impacts livelihoods and prosperity in the wider community.

These business continuity disaster risks arise from the same types of hazard as shared community risks, but they are not necessarily restricted to the immediate locality. Hazards that cause disasters in other areas can also affect SME supply chains or distribution networks. Preparation for such eventualities requires a more business-oriented approach to risk assessment and contingency planning.

Policy approaches to support resilience through business continuity management are likely to be the most effective for disaster risks related to business vulnerability. For this reason the policy tools used to encourage SME development and to support their broader economic resilience may be the best starting points to support SME business continuity planning (BCP) for disaster resilience, such as capacity building, tax concessions, access to finance and general reform of the business environment. These systems are aimed at business support, and also have multiple entry points to access SMEs to provide information about disaster risk and to provide incentives for SMEs to become disaster-resilient. However, while such frameworks focus on SME economic wellbeing, they can sometimes fail to take account of SME economic losses from disasters, or the reasons for such losses, including the extent to which these are preventable through DRR, contingency planning and disaster recovery support.

This categorization of SME risks leads to two guiding questions for the Thailand country policy analysis, due to the possibility that SME disaster resilience may fall between two pillars:

1. To what extent do climate and disaster prevention and mitigation systems either include SME representatives at national level, and/or integrate SMEs into local institutions, risk awareness campaigns, emergency response and recovery operations at local level?
2. To what extent is climate and disaster resilience factored into the picture of an economically healthy SME through policy schemes targeted at SME development and promotion?

**SME Disaster Risk in Thailand**

Thailand’s SME sector was seriously damaged by the devastating 2011 floods, which caused a 9.2% drop in the number of SMEs that year, although since 2012 their numbers have been increasing steadily. Although Thailand does not experience a high frequency of major natural hazards, the devastating floods in 2011 (total damage and loss approximately THB 1.43 trillion, or USD 46.5 billion) were ranked by the World Bank as the fourth most costly disaster after the Great Earthquake and Tsunami in Japan (2011), the Kobe Earthquake (1995) and the Hurricane Katrina in the United States (2005). Starting in northern Thailand in July 2011, the floods spread to the central and northeastern regions, eventually affecting 65 out of 77 provinces. 884 people lost their lives, over a millions lost their homes, and the private sector was severely affected, accounting for more than 90 percent of the total losses. The record level floods also inundated seven industrial estates in Ayutthaya and Pathumthani for the first time.

Small and Medium Enterprises (SMEs), until then rarely addressed as a target group, were hit hard by the floods. According to the Office of Small and Medium Enterprise Promotion (OSMEP), business operations of approximately 557,637 SMEs were disrupted, which amounted to THB 71,156.42 million per month, and around 2,325,644 workers lost their jobs. The hardest hit sector was the Trade and Repairs sector with 264,572 SMEs affected, followed by the service sector where 163,976 businesses were disrupted. At the same time, there were a total of 102,892 flood-affected SMEs in the manufacturing sector (with the food and beverage industry suffering the greatest losses, followed by those in textile and garment industries). Based on geographic areas, central Thailand experienced the severest losses and damages with 177,776 and 132,973 SMEs undergoing disruption in Bangkok and the Central Region (ADPC: 2014. 4).

The experience of the 2011 floods triggered many reviews of disaster preparedness within both government and private sector organizations, and this learning needs to be captured to ensure the question of SME disaster resilience is not forgotten. In a sense, one of the challenges is that, although Thailand is situated in a region of Southeast Asia that is subject to monsoonal climatic conditions, it is not one of the world’s higher risk countries in terms of exposure to natural hazards. Therefore the awareness of potential disasters is not always present, meaning its population is more vulnerable to the hazards that occur because the systems and culture to cope with and adapt to large-scale natural hazards are still being developed. As actual exposure to hazards in Thailand is relatively low, its disaster risk can potentially be controlled and lowered by reducing vulnerability and susceptibility, and improving coping and adaptive capacities to the hazards that do occur. Given Thailand’s susceptibility to risk from climate change, not the least of which is sea level rise, the need for such awareness and preparedness will only increase.

The natural hazards that are most likely to occur in Thailand are floods, typhoons, drought and fire (fire is usually mixed natural and human causes). Of these, floods present a high risk of causing disaster, while the others present a moderate risk of disaster. Risk of disaster is related to vulnerability and management of the hazard. Landslides and crop pests have a moderate risk of occurring, and also a moderate risk of causing disaster. Earthquake risk is low. It should be recalled that Thailand’s SME sector was also seriously damaged by the 2008/09 global

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financial crisis,\textsuperscript{13} and by disruptions in Bangkok due to prolonged civil unrest in 2010 and again in 2013-14. This mix of external risks indicates that SMEs need to consider a wide palette of potential business disruptions for the purpose of business continuity management (BCM).

Figure 1 also shows that some of the highest risks in Thailand arise from human causes, in particular explosions and accidents, both of which have a high risk of occurring and a high risk of causing disasters because management of them is rated as poor. These are usually described as ‘technological hazards’. These disaster risks are very relevant to SME operations, and therefore need to be included as priority items for SME resilience, including in their operational risk assessments and preparedness as part of BCP.

The focus for promoting SME disaster resilience in Thailand therefore needs to take account of the fact that natural hazards are not likely to be continuously present in the minds of SME proprietors as a potential cause of business continuity challenges, and that objectively the hazards they face are a mixture of natural technological and economic. The need for resilience to natural hazards may be seen as somehow in competition with the need for resilience against technological hazards, or economic downturns. A tailored approach to SME disaster resilience in Thailand, might therefore consider how all of these risks can be well integrated into BCP training and tools, so that DPM is not forgotten and yet the other very real risks to business continuity are also given sufficient priority, especially the technological hazards of explosions and accidents. This risk profile suggests that an all-hazards approach to SME resilience may be both the most persuasive and also the most useful in supporting their business continuity and development.

\begin{table}
\centering
\begin{tabular}{|l|l|l|l|l|}
\hline
Types of disaster & Hazard & Vulnerability & Management & Disaster Risk \\
\hline
Flood & high & moderate & moderate & high \\
\hline
Typhoon/hurricane & high & high & moderate & moderate \\
\hline
Earthquake & low & low & poor & moderate \\
\hline
Landslide & moderate & low & poor & moderate \\
\hline
Drought & high & moderate & moderate & moderate \\
\hline
Fire & high & moderate & moderate & moderate \\
\hline
Explosion & high & moderate & poor & high \\
\hline
Accident & high & moderate & poor & high \\
\hline
Epidemics & low & low & moderate & low \\
\hline
Pests & moderate & low & poor & moderate \\
\hline
Civil Unrest & low & low & poor & moderate \\
\hline
Refugee migration & moderate & low & moderate & moderate \\
\hline
\end{tabular}
\caption{Relative Risk of Hazards, Vulnerability, Level of Management and Disaster Occurrence in Thailand. DDPM 2012\textsuperscript{16}}
\end{table}

The definition of SMEs in Thailand is determined according to the Ministry of Industry’s 2002 regulation, which divides SMEs into four industry categories. In summary, SMEs in the manufacturing and services sectors are defined as having no more than 200 employees or less than B200 million fixed assets (just over USD 5.5 million), excluding land. In wholesale trade an SME has up to 50 employees or B100 million assets, and in retail trade it has up to 30 employees or B60 million assets. All the asset values exclude the land on which the business is conducted.

Thailand is now an upper middle-income country in which SMEs are central to the national economy. According to OSMEP data from the year 2014, SMEs make up 99.73% of the total 2.74 million enterprises in Thailand. Amongst SMEs, 99.53% are small and only 0.47% are medium sized, according to the national classification system set out in Figure 2. In 2014 SMEs employed 80.3% of all employees of enterprises, although they accounted for a more modest 39.6% of GDP.

SMEs are concentrated in two business sectors: the trade sector (wholesale and retail trade, automotive repair), with 1,159,932 SMEs, which is 42.37% of all SMEs; and the service sector (including hotels and restaurants), at 1,036,598 SMEs, which accounts for 38.88% of SMEs. SME GDP contributions in these two sectors has been gradually increasing, with the main growth for SMEs in the service sector.

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17 OSMEP. 2015. p. 4-1.
Figure 2  Definitions of SME size in Thailand

<table>
<thead>
<tr>
<th>Type</th>
<th>Number of employees</th>
<th>Fixed assets (THB million)*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Small</td>
<td>Medium</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>&lt; 50</td>
<td>51-200</td>
</tr>
<tr>
<td>Services</td>
<td>&lt; 50</td>
<td>51-200</td>
</tr>
<tr>
<td>Wholesale</td>
<td>&lt; 25</td>
<td>26-50</td>
</tr>
<tr>
<td>Retail</td>
<td>&lt; 15</td>
<td>16-30</td>
</tr>
</tbody>
</table>

Ministry of Industry’s 2002 regulation categorization depends on the enterprise having up to a certain number of employees or up to a certain value in fixed assets, excluding land.

Figure 3  Number of enterprises classified by size 2013–2014

<table>
<thead>
<tr>
<th>Size of enterprises</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of enterprises (person)</td>
<td>Ratio to total number of enterprises</td>
</tr>
<tr>
<td>Small &amp; medium enterprises (SMEs)</td>
<td>2,716,038</td>
<td>99.73</td>
</tr>
<tr>
<td>Small enterprises (SEs)</td>
<td>2,716,038</td>
<td>99.27</td>
</tr>
<tr>
<td>Medium enterprises (MEs)</td>
<td>12,645</td>
<td>0.46</td>
</tr>
<tr>
<td>Large enterprises (LEs)</td>
<td>6,966</td>
<td>0.26</td>
</tr>
<tr>
<td>Unknown</td>
<td>392</td>
<td>0.01</td>
</tr>
<tr>
<td>Total</td>
<td>2,723,396</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Source: OSMEP SMEs White Paper 2015, Table 4.1

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The next highest concentration of SMEs is in the manufacturing sector, with 495,077 SMEs, or 18.1%. There are only 32,081 SMEs in the agricultural sector, or 1.17% of all SMEs, but this is still almost the entire number of the enterprises in the agricultural sector, with SMEs making up 99.26% of the enterprises in that sector.21

SMEs are also important in Thailand’s international trade, in 2014 generating just over a quarter (26.25%) of export value and even more import value (30.05%). SME exports increased while the economies of trading partner countries, especially ASEAN nations and China, were growing, but dropped slightly with the economic slow-down in the region in 2014.22 However, OSMEP has also estimated that the SME economy continued to grow in the first half of 2015, at a rate of between 3.0% and 4.4%. SMEs are thus a vibrant and major part of Thailand’s economy, and their resilience to disaster is an important aspect of continued economic growth and development for the country as a whole.23

A brief overview of some key business sectors in Thailand and the damage they experienced during the 2011 floods and other crises highlights their potential vulnerability to disaster-related disruption as follows:24

- **Agricultural sector**: Agriculture contributes around 8 percent to Thailand’s national GDP and roughly 40 percent to the country’s employment and, as noted above, is dominated by SMEs, which are more than 99% of all the enterprises in the sector. Despite the fact that most farmers in Thailand are familiar with heavy rains and floods, the impact of the 2011 floods on the agricultural and food sectors was massive, due to damages and loss of crops and machinery. The price of agricultural products rose sharply in the last quarter of 2011 and the first quarter of 2012. This situation required immediate and costly relief measures specifically for this sector, launched by the Bank of Agriculture and Agricultural Cooperatives (BAAC) including low interest rate loans, exemption of all debt obligations in case of loss of life as well as 3-year debt rescheduling during 2011-2013. The Cabinet subsequently established the Committee on Agriculture Disaster Preparedness and Relief chaired by the Minister of Agriculture and Cooperatives to address disaster preparedness measures and mitigate loss of agricultural land. There is now an annual Agriculture Disaster Preparedness Plan published by the Ministry of Agriculture and Cooperatives, which focuses on prevention, preparedness, response and recovery, and covers three types of agriculture disasters namely flood, drought and outbreak of plant pests. Aside from those disasters, agricultural businesses especially livestock and food companies, also need to deal with influenza pandemics: the National Pandemic Preparedness Plan was created after the spread of SARS in 2003; and after the 2009 swine flu outbreak, the Department of Diseases Control published a self-learning manual on Business Continuity Plans (BCP).

- **Automotive Sector**: As one of the leading automotive manufacturers in the world, Thailand is home to major production bases for auto parts, including Japanese and American Original Equipment Manufacturer (OEMs) such as Honda, Toyota and Ford. The 2011 floods severely affected the industry, which had assembly locations around Ayutthaya and Pathumthani provinces. The short-term losses included a production halt for 2-3 weeks and production shifting to other ASEAN countries such as Indonesia and Malaysia. After 2012 the Thailand Automotive Institute tried to create awareness on BCP development in the industry, including use of the global industry standard for BCM (ISO/TS 16949), which requires contingency plans for BCM in emergencies (ADPC. 2014. 40).

- **Logistics Sector**: Transport and other logistics-related services contribute almost 27 percent of Thailand’s GDP. During the 2011-floods, this sector lost approximately 20,000 million baht, according to the Federation of Thai Industries (FTI). The massive losses of the sector resulted

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21 OSMEP. 2015. P. 4-1.
from the fact that most of the factories, trucks and warehouses were flooded.

Retail sector: The 2011 stoppage in the logistics sector also affected the retail sector, which is dominated by SMEs, due to their inability to receive stock. Based on data from the Development of Thai Capital Retailers Association, approximately 20,000 out of 600,000 retail businesses had already been closed down.

ICT Sector: Thailand produces around 45 percent of the world’s hard drives, and is the world’s second largest exporter of them. While the main producers are large enterprises, many SMEs are involved in related support industries. During the 2011 flood, a number of the hard drive makers were severely affected, either suspending Thai operations, or suffering supply chain problems, or limited access to factories (which led to a global shortage of hard disk drives or many months, and a 20–30 percent global price increase). SMEs in the related industries were severely affected. According to the Federation of Thai Industries’ electrical, electronics and allied industries club (EEAIC), at least half of the SMEs in the ICT sector affected by the 2011 floods closed down because of the high cost of damage; and only a third could resume their operations in the short term, some of these in rented temporary factories.

Tourism Sector: Tourism is one of the main drivers of Thailand’s economy (with close to 28 million visitors per year), and 80 percent of its enterprises are SMEs. The sector is highly sensitive to all types of crises including the SARS outbreak in 2003, the tsunami in 2004, the global financial crisis in 2008, flooding in 2011, and the political upheaval in 2010 and 2013-14. Physical damage as well as cancellation and postponement of trips brought about the loss of income to hotel and related businesses during these disasters, and during the 2011 flood the industry’s damage and loss was 94.9 billion baht. The tourism sector could bounce back from these events quickly in comparison with other sectors, in part because it trades on the country’s image and reputation. But for this to continue, a strong crisis management strategy is required, not only for business continuity, but also for the safety of domestic and international travellers. These are elements of the National Tourism Development Plan (2012-2016), which also recognizes and emphasizes climate change as well as disaster risks. The Tourism Authority of Thailand (TAT) also established the Crisis Communication Centre (CCC) in 2001, and some certification/standard programs have been launched help increase competitive advantage and improve the customer confidence.

The geographical location of an SME will often determine its initial hazard risk, which can be identified if local risk mapping has been undertaken, or if it is in a region well known for certain hazards (e.g. flooding in Bangkok). National statistics on SME locations can potentially be matched with national and local risk mapping data, to indicate priority areas, if this data is available.

For example, retail and service sector enterprises, by their nature, tend to be embedded within their communities, and primarily serve local clients. For many of them, their immediate disaster risk will also be very localized, or shared community disaster risks, in addition to supply chain issues and customer access. However, SMEs in manufacturing are more likely to be physically separate from residential and
light commercial areas in settlements, so they may need to have more specifically targeted initiatives on disaster risk assessments and resilience, even within Thailand’s system for disaster prevention and mitigation (DPM). For example, the office of Small and Medium Enterprises Promotion (OSMEP) could arrange for specifically targeted training for SMEs on DPM and disaster-resilient BCP within particular Industrial Estates, at the same time as, for example, the Industrial Estate Authority of Thailand (IEAT) conducts a risk assessment and risk mapping, including technological hazards, with the Department of Disaster Prevention and Mitigation (DDPM).25

SMEs in manufacturing, retail and wholesale trade, also appear more likely than the others to be affected significantly by supply chain and distribution blockages originating from disasters in other areas. Similarly for those in the tourist service sector, if tourists are unable to access their facilities due to travel restrictions or breakdown in services from disaster in another other locality. These are specific vulnerabilities in business continuity that can affect enterprises reliant on remote supply chain and distribution networks, and/or movement of clients from other countries or other parts of Thailand. Of course local supply and distribution networks are also disrupted by local disasters, and these threats to business continuity need to be part of BCP and other contingency planning.

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25 IEAT undertook structural flood prevention measures following the 2011 floods in 7 affected industrial areas.
How disaster-resilient are SMEs? – The SME Survey

The survey group

The SME Survey was based on 425 respondents (47% small, 35% medium, 18% large) from all of Thailand’s regions, although with a higher proportion from Bangkok. Compared with the proportions of SMEs nationally, it is recognized that this sample significantly under-represents small enterprises and over-represents both medium and large enterprises. This is an effect of the sampling method, where contacts were made through OSMEP activities for enterprise development and private sector networks, in which larger enterprises are more likely to be engaged, as well as drawing on a larger proportion of respondents from the more industrialized Bangkok area. However, small enterprises were nevertheless well represented, and the regional spread was strong, so the sample group is able to provide valuable insights on SME disaster resilience. The survey aimed to identify Thai SME perceptions of disaster risk, their experience of disasters that disrupted business, and their exposure to and practice concerning business continuity planning (BCP) that incorporates disaster risk assessment and contingency planning. The SME Survey results are particularly important in drawing conclusions about the current levels of SME disaster-risk awareness and business continuity planning, as these issues are not covered by official statistics.

While Annex 1 details the sample group and methodology, some characteristics of the group that may reflect on general characteristics of Thai SMEs are:

- Most of the enterprises started their business operation between 2000-2009 (35.5%) and 1990 – 1999 (26.3%), although a large group had also commenced operation in the previous five years (21.8%). Although many of them could thus be described as young enterprises, the figures show
that a large minority, of almost 43%, have been in operation since before 2000. This shows considerable stability and longevity for business enterprises, suggesting it is worthwhile for the Government to invest in capacity building for them, as knowledge will not be lost rapidly due to attrition.

The majority of the enterprises surveyed were headed by men (75%). In addition, Figure 4 shows the difference between large enterprises and SMEs when categorized by the gender of the business head. Only 4 out of 78 (5%) of large enterprises indicated that the head of business was female (although since the large enterprises in the survey came from the automotive sector, this may imply only that there are a few women heads of business in the Thai automotive industry). For the SMEs, 88 out of 347 (25% of SMEs) reported that their enterprises had a female as the business head. This suggests that a very large majority of heads of business in Thailand may be male, including 75% in SMEs.

Government strategies for SME support and development may need to take the gender imbalance of business leadership into account. This could be done firstly by actively promoting gender equality through mechanisms such as: government campaigns on how to avoid gender discrimination in recruitment and promotion, potentially reinforced by legislative or policy monitoring; promoting access to child care and family leave as part of employee benefits in the private sector; supporting organizations that sustain and build capacity for women managers and business owners within the private sector, especially in SMEs; financial and non-financial incentives to encourage women into business leadership roles, including methods such as high profile prizes and achievement awards for companies that improve gender balance and for individual women business leaders. Secondly, it may also be useful to identify statistically whether the 25% of women heads of SMEs are concentrated in any sectors or regions, and in any event to encourage and target women’s participation in SME capacity building for resilience.

Findings on Risk Exposure and Previous Disaster Experience

Respondents were asked to name the top three hazards that could potentially affect their business. The hazards that rated most frequently were flood (60%), fire (31.5%), regional or global economic crisis (30.8%), power blackout (28.7%), transportation system breakdown (19.5%), and civil unrest (12.9%) (see Figure 5). It should be noted that not only natural hazards, but also technological and economic hazards were of high concern to respondents. Although Thailand rarely experiences devastating natural disasters, flood was the highest.
Figure 5  Hazards respondents believe could affect business operations

- Flood: 60%
- Fire: 31.5%
- Regional or global economic crisis: 30.8%
- Power blackout: 28.7%
- Transportation system breakdown: 19.5%
- Civil unrest: 12.9%
- Armed conflict: 11.8%
- Accidents: 10.6%
- Theft Landslide: 8.9%
- Foreign currency fluctuations: 8.5%
- Lightning: 7.3%
- Earthquake: 6.6%
- Drought: 6.4%
- Water shortage or contamination: 6.4%
- Data loss: 6.4%
- Terrorism Insect infestation: 5.6%
- None: 4.5%
- Pandemic/Epidemic: 3.1%
- Typhoon: 1.9%
- Wildfire: 1.9%
- Cyber attacks: 1.6%
- Tsunami Volcanic eruption: 1.6%
- Insect infestation: 1.2%
- Tornado: 0.7%
- Others: 0.7%
- Landslide: 0.5%
ranked hazard of concern, which can be attributed to recent experience of the devastating floods in 2011. Some respondents (4.5%) reported that none of the listed hazards had the potential to disrupt their business operation. These same respondents were those who also indicated they had never experienced business disruption caused by any hazards.

When compared by country regions, the survey found the respondents from different regions indicated similar hazards that could potentially affect business operations. Flood was the first rank in each country region. However, in the Northeast region, drought was raised as one of the top three hazards of concern.

In terms of disaster experience, about 34% of respondents indicated they had previously experienced a major disruption to their business operation. Typically, the affected respondents stopped their business operation due to the most recent disruption for the lengthy period of 47.4 days, and the cost of damage on average was 26.2 million Baht.

The respondents who indicated experience of a major disruption came from a variety of industries such as automotive, manufacturing, wholesale and retail trade, food service activities, agriculture, forestry, and fishery, and transportation. There was no significant difference in experiences of business disruption between industries. On average, one-third of the enterprises in each industry had experienced disruption caused by hazards.

Figure 6 shows the year in which last major disruption to business operations occurred. Most of the affected respondents (94 enterprises) had confronted the major disruption in 2011, and 95.7% of them reported this was due to flood. 2011 represents a very different picture from other years, with the period of disruption of affected businesses averaging about 45 days, and the cost of damage due to the disruption was 29.9 million Baht. In 2011 Thailand encountered its worst ever flood crisis due to heavy rainfall caused by monsoon and a series of Typhoon triggering at the end of July 2011. Flooding started through the Northern, Northeastern, and Central regions, and remained in some areas until mid-January 2012. 65 out of 77 provinces in Thailand were declared flood disasters. Seven major industrial estates had their operations stopped by a body of water as high as 3 meters during the flood.

Concerning the period of disruption period, flood caused both small and large enterprises to stop their operations for longer than other hazards in 2011 (see Figure 7). In the same year, the cost of damage by flood was very high (see Figure 8). It can be expected that large enterprises would report higher costs of damage than small, due to the scale of their operations, but it should be noted that small enterprises tended to stop their business operations longer than large enterprises.

For the period after 2011, the top answer for hazards affecting business operations was still reported as flood. In addition, the top hazards that caused major disruptions were very similar to the top hazards that survey respondents had been concerned about as potential threats. However, it should be remarked that although there were some concerns about earthquake, very few respondents had experienced earthquake.

For the impacts on business, affected respondents reported how past disasters had disturbed their business, by selecting their top 3 from a list. The top five major impacts listed were: 1) employees unable to go to work (37.1%); (2) inability to deliver products (26.1%); (3) damages to facilities and equipment (22%); (4) suppliers were not able to deliver materials/service; and (5) damages to raw materials (17.4%).

Findings on BCP Adoption

On BCP adoption, 76.7% of respondents had no written BCP, 8.9% were in the process of business continuity planning, and 10.8% (46 enterprises) already had a BCP (see Figure 22). Figure 23 shows that more than half of respondents who did not have written BCP were from small enterprises.

Figure 10 represents the status of BCP adoption amongst respondents by enterprise size. It is not
surprising that more large enterprises had written BCP than others (29.5%). Small enterprises had the lowest level of written BCP adoption (3% yes, 8.6% in progress, and 84.8% none). A higher proportion of medium enterprises had written BCPs (11.4% yes, 7.4% in progress and 78.5% none).

While it is true that overall a low proportion of SMEs have written BCPs, the number in progress is also important. A 2012 survey done by the Asian Disaster Reduction Center (ADRC) indicated that none of the Thai SMEs surveyed had BCPs at that time, so this 2015 survey signals significant progress.
amongst SMEs since 2012 in developing BCPs. This was a period during which the Government advocated strongly for BCPs as a disaster resilience measure, updated the Thai BCM standard, and began to require BCM for the government sector (See ADPC. 2014. Improving Small and Enterprises (SMEs) Resilience in Thailand, at 12). Hence, while there is still a long way to go in BCP adoption by SMEs, it seems that current policy initiatives to raise awareness and provide BCM standards and training are having an effect, likely in addition to the personal experience of the 2011 floods amongst SMEs, and action by larger manufacturers to encourage BCPs adoption by their supply chain companies post-2011.
Enterprises without a written BCP

Three major reasons were given by small enterprises when asked to name their top three reasons for not having a written BCP: (1) the enterprise had not heard of BCP (40.5%); (2) there was a lack of company BCP knowledge and expertise (31.5%); and (3) they believed they were not likely to experience any disaster disruption (24.4%).

Medium enterprises gave the same top three reasons and in the same priority order: (1) the enterprise has not heard of BCP (38.5%); (2) lack of company BCP knowledge and expertise (36.8%); and (3) not likely to experience any disaster disruption (29.9%). For large enterprises without a BCP, the top three reasons were again very similar.

In terms of reasons that would motivate an enterprise to develop a BCP, the top five answers of small enterprises were: (1) to avoid economic loss (63.7%); (2) customer’s requirement (22.6%); (3) BCP is a good business practice (17.9%); (4) because of a previous disaster experience (16.1%) and (5) to gains clients’ confidence (15.5%) see Figure 11. Thus small enterprises saw BCP primarily as a tool to prevent economic loss, with customer requirements, good business practice, increasing disaster resilience and gaining client confidence as other very significant reasons to have a BCP.

Figure 12 presents the reasons that motivate medium enterprises to prepare a BCP. The top five answers were similar but not identical to those for small enterprises: (1) to avoid economic loss (65.8% included it in their top three reasons); (2) to be able to meet supply or service commitments if business is interrupted (32.5%); (3) customer’s requirement (21.4%); (4) BCP is good business practice (21.4%); and (5) to gain clients’ confidence (19.7%). These also placed avoidance of economic loss as the top reason, but more often chose supply chain issues amongst their top three. There was generally more spread of reasons given by medium enterprises for having a BCP, including protection of employees, legal requirements and disaster experience. However, thinking back to the 2011 floods, it should be recalled that economic losses and business interruption were two of the main effects of that disaster, so these concerns are closely related to disaster resilience.
In terms of large enterprises, the top five reasons that would motivate them to develop a BCP were: (1) to avoid economic loss (58.5% listed it in their top 3); (2) to gain clients’ confidence (46.3%); (3) a customer’s requirement (39%); (4) to be able to meet supply or service commitments if business is interrupted (34.1%); and (5) to protect employees. The survey indicated that the top motivators to encourage small, medium, and large enterprises to prepare a BCP would be to show them how BCP can help them avoid economic loss if a business disruption occurs. Other reasons of high frequency were related to customers. How to motivate enterprises to develop a BCP would be to present the value of competitive advantage through BCP, especially in meeting customers’
requirements and having a higher ability to deliver products and services on time. Enterprises, especially small size, also need business continuity professionals to show how BCP is a good practice to enhance the standards in crisis management and emergency planning. If policy initiatives and training support can illustrate to enterprises that business continuity can improve organizational resilience, they will be more likely to develop BCPs.

Enterprises with a written BCP

As noted above, only 10.8% of surveyed enterprises indicated they had a written BCP. Small enterprises had the lowest level of written BCP adoption, while large enterprises had the highest level.

The 2011 floods were clearly a major impetus for preparation of BCP. In terms of the year of first BCP preparation, one respondent indicated a written
BCP was prepared before the year 2000, but, most of those with a written BCP had prepared them in 2011 or later (17 out of 29), and 6 of these did so during 2011, the year of flood disaster. There were also 38 enterprises in the process of developing a written BCP at that time of the survey.

In addition, 37% of those who had a written BCP reported their BCP had connected to the community or local disaster preparedness plan, which is a very substantial minority.

In terms of hazards addressed by BCP (see Figure 13), the top hazards identified in the written BCPs were flood (56.5%) and fire (47.8%). Other significant hazards included power blackout (26.1%), accidents (19.6%), earthquake (13.0%), and data loss (10.9%).

- Flood: 56.5%
- Fire: 47.8%
- Power blackout: 26.1%
- Accidents: 19.6%
- Earthquake: 13.0%
- Data loss: 10.9%
- Lightning: 8.7%
- Pandemic/Epidemic: 8.7%
- Civil unrest: 6.5%
- Terrorism: 4.3%
- Armed conflict: 4.3%
- Cyber attacks: 4.3%
- Transportation system breakdown: 4.3%
- Landslide: 4.3%
- Wildfire: 4.3%
- Tsunami: 4.3%
- Others: 4.3%
- Water shortage or contamination: 2.2%
- Theft: 2.2%
- Foreign currency fluctuations: 2.2%
- Typhoon: 2.2%
- Drought: 2.2%
were: (1) flood (56.5% listed in their top 3 hazards); (2) fire (47.8%); (3) power blackout (26.1%); (4) accident (19.6%); and (5) earthquake (13%). Although earthquake was not ranked in the top ten hazards that concerned survey respondents, some enterprises had BCP for earthquake due to the possibility of their huge impact on business continuity if they occurred.

In addition, the top three reasons that motivated the enterprises that had developed a BCP were: (1) to avoid economic losses (52.2%); (2) to gain clients’ confidences (41.3%); and (3) to protect employees (37%). These first top two answers were similar to the responses by those who did not have a written BCP shown in Figure 28, 29, and 30. Those who had a written BCP were also more strongly motivated by the reason of protecting employees (Figure 14). Of the 46 that had a written BCP, 54% had used their plan in an actual disruption. Most of these had found their BCP to be either useful (22%), or very useful (33%).

There were a variety of ways used to prepare BCPs. About 15% of those who had a written BCP indicated they prepared it by referring to guidelines published by industry association or by

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**Figure 14** Reasons that motivate those who have BCP to develop the plan

- **To avoid economic loss**: 52.2%
- **To gain client’s confidence**: 41.3%
- **To protect employees**: 37%
- **Fear of not being able to meet supply or service commitment**: 28.3%
- **It is a customer’s requirement**: 19.6%
- **Because of a previous disaster experience**: 8.7%
- **It is prestigious to have BCP**: 8.7%
- **BCP will help us gain competitive advantage**: 6.5%
- **An enterprise level BCP is needed to participate in area-level BCP**: 4.3%
- **It is legal or mandatory requirement**: 4.3%
- **BCP is a symbol of reliability**: 4.3%
- **BCP is a good business practice**: 4.3%
- **Do not know**: 2.2%
- **Having BCP will attract more business**: 2.2%
searching the internet for BCP procedure. About 30% of surveyed respondents indicated other ways to prepare BCP. For example, some large enterprises received their BCP guidelines from their international headquarters. Some respondents from the automotive industry referred to guidelines from their clients, and others referred to guidelines from the industrial estate where they were located. In addition, when preparing a written BCP (although 20% did not respond on this question) only 1 of the 46 with a written BCP reported receiving support from the government in terms of training support and/or a BCP guidebook or toolkit.

Respondents gave a range of costs estimated for preparing a BCP. Four respondents reported they did not pay any costs to prepare a BCP. Six indicated a cost of between THB 50,000 – THB 100,000. For number of days used in preparing a BCP, 5 enterprises indicated they used 7 days to prepare their BCP. 14 of those who had a written BCP spent no more than one month to prepare it.

Of those who had a written BCP, 58% said they update their BCP annually, and about 21% update when the business environment changes, while 12.5% had never updated their BCP. In addition (although half of those with a BCP did not answer this question), 20% indicated they had last updated their BCP in either 2014 or 2015. On the year of last BCP test, 30% reported their last test on BCP was in 2014, and 15% of them tested their BCP last in 2015.

Of the 46 enterprises that had a written BCP, most were from the automotive industry. Only 12 businesses required their suppliers to have a BCP, and only two of them – from the automotive industry – were willing to subsidize BCP preparation of their suppliers. Only large enterprises in the survey said they were willing to support their suppliers to develop BCPs.

Supply chain network is usually a critical resource for business continuity, but this indicates that many enterprises do not monitor whether or not their suppliers have a plan to ensure their business continuity during any disruption. To avoid supply chain disruption, an enterprise should share or encourage their suppliers to commence BCM, especially a supplier who may be their single point of failure to develop business continuity planning. However, the survey also showed that a large enterprise in Thailand whose business depends on supply chain networks has developed good practices for BCP development, a model that could be used by other large enterprises to promote a BCM approach and support suppliers’ BCP preparation.

Of those with a BCP, 35% preferred to have an area-based BCP, which stakeholders located in the same area could prepare collaboratively. About 24% of them preferred a combination of both enterprise- and area-based BCP. Only 11% them preferred an enterprise-level-only BCP (see Figure 15). These results suggest that most of those with a written BCP would prefer to prepare a plan towards disaster resilience to achieve sustainable development of their area. The Area BCP can be developed by coordinated efforts of neighborhood and local stakeholders, to better secure common business resources in particular, and to enhance continuity of business in the area, fostering sustainable local economy and employment.

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Findings on Incentives and Training Needs

About half of surveyed respondents indicated the national government should make BCP preparation compulsory for SMEs, although many others did not agree with this, saying BCPs should be voluntary due to the cost of BCP preparation.

For both small and medium enterprises, the top three incentives they nominated as the best forms of assistance the government should provide to SMEs to encourage disaster resilience were: (1) subsidies, grants, and soft loans for BCP preparation; (2) tax credits, deductions, and exemptions for SMEs with BCP; and (3) technical assistance and consultancy services. The survey thus indicated that tax and financial incentives were highly rated by SMEs (as well as large enterprises) as necessary measures for the government to provide to encourage
SMEs to prepare their BCP, along with technical assistance services.

Approximately 25% of surveyed respondents also included in their top three forms of government assistance the application of legal measures such as legislation, policies, and institutional arrangement for SMEs to develop BCPs. Other non-financial incentives it was proposed the government provide were certification schemes and award recognition.

In terms of training, most of surveyed respondents (88%) had never had attended BCP-related training (31% of large enterprises, 10% of medium enterprises and 6% of small enterprises). BCP training for private enterprises, particularly SMEs, is clearly still needed.

For general DPM-related training, 85% of respondents had never attended such training. When separated by size of enterprise, more than one-third of large enterprises and one-fifth of medium enterprises had attended DPM training, but only 4% of small enterprises had attended any DPM training.

The survey indicates that training regarding disaster risk management and business continuity management and BCP may still be needed amongst SMEs. Based on other research, the training programs for private enterprises, especially SMEs, have focused on companies’ growth and competitiveness, while fewer programs have focused on disaster risk reduction or DPM. To create an enabling environment for disaster resilience, the government may need to provide more training across disaster management issues for private enterprises, especially SMEs, in order to enhance capacity on disaster preparedness in the business sector.

Findings on disaster prevention and mitigation preparedness

In terms of participation in local disaster risk reduction (DRR), only 14% of respondents had participated in local DRR activities.

In terms of other coping mechanisms, most surveyed enterprises, only one in five reported having a mutual aid agreement with another organization to help each other during and after emergencies. Of the respondents who had a mutual aid agreement, there were slightly more medium enterprises, but the spread was fairly even across enterprise size, and there was no correlation with BCP. This indicates that enterprise size and existence of BCP probably do not play a big role in whether or not a mutual aid agreement is established.

In terms of other written disaster preparedness plans, 38% of respondents had emergency response plans. Other written plans that the respondents had also included evacuation plans.
(28.5%), risk assessment plans (16.5%), and emergency communication plans (13.2%) (Figure 16).

When compared by the sizes of enterprises, it is interesting that most small enterprises (70%) did not have any disaster preparedness plans. And, almost half of medium enterprises (41%) also reported none of disaster preparedness plans existing in their company. In contrast, only 7.3% of large enterprises indicated that they had no plans regarding disaster preparedness.

When comparing those who had a BCP and those who did not, the survey found that just over half of those without BCP (54%) also did not have any other disaster preparedness plans. In contrast, less than one-quarter of those with BCP (24%) indicated they had no other disaster preparedness plan in their enterprises. Those who had a written BCP also tended to have more disaster preparedness plans than those who did not have a written BCP (see, Figure 17).

These results allow the conclusion SMEs still have a limited capacity to develop disaster preparedness plans, compared with large enterprises. But those with BCPs were more likely to have other written preparedness plans for emergencies.

Findings on financial coping mechanisms

For existing risk financing mechanisms, overall, the top four responses when asked to nominate their top 3 financial coping mechanisms were (1) fire insurance (66% listed in their top 3); (2) Motor/car insurance (48.5%); (3) Insurance for employees (40.2%); and natural catastrophe insurance (28.9%) (Figure 17).

The top coping mechanisms that businesses used in dealing with disruptions and emergencies included: (1) reducing expenses (43.8%); (2) using savings (34.1%), and (3) using loans from banking institution (33.9%) respectively. Claiming insurance (26.8%) was fourth.

When compared by size of enterprise, 13% of small enterprises reported they did not have any financial coping mechanism in dealing with business disruption and emergencies. Besides reducing expenses, using savings, and using loans from banking institution as coping mechanisms, small businesses tended to deal with the situation through any loan with interests and with support from family and friends. However, large (47%) and medium (35%) enterprises tended to have insurance mechanism to deal with business disruption.
### Survey overview and conclusions

Survey respondents (425 enterprises - 47% small, 35% medium, 18% large) were most concerned about the disruptive effects of floods, then regional or global economic crisis, with fire, civil unrest, and power blackouts also of high concern, for both anticipated and experienced disruptions. These findings indicate that SMEs in Thailand are likely to be most receptive to an all-hazards approach to disaster resilience.

The effect of such disruptions had a major impact on business continuity, profitability and long-term viability of SMEs. The 2011 floods and other past disasters’ main business impacts were reported as lengthy cessation of operations (45 days on average in the 2011 floods) and high costs of damage (29.9 million Baht on average in 2011). More precisely the disruptions meant: employees were unable to go to work; enterprises were unable to deliver products; there was damage to facilities and equipment; suppliers were not able to deliver materials/services; and raw materials were damaged.

The main BCM tool the survey asked about was BCP adoption. Although only about 15% of small enterprises and 21.5% of medium enterprises surveyed had a written BCP, although this compares favorably with a 2012 survey that showed none of the Thai SME respondents had a BCP.

SMEs without a BCP said the main reasons for not preparing one were that they lacked knowledge of BCP in the company, they believed they were not likely to experience any disaster disruption, and they lacked information on procedures for preparing a BCP. They gave as the top reason that would encourage them to prepare a BCP, a demonstration of how BCP can help them avoid economic loss if business disruption occurs. Other key motivators were customer requirements, a perception of BCP as a good business practice, experience in a previous disaster, and gaining client confidence. These findings suggest SMEs need to

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<table>
<thead>
<tr>
<th>Risk finance mechanisms in use</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire insurance</td>
<td>65.6%</td>
</tr>
<tr>
<td>Motor/car insurance</td>
<td>48.5%</td>
</tr>
<tr>
<td>Insurance for employees</td>
<td>40.2%</td>
</tr>
<tr>
<td>Natural catastrophe insurance</td>
<td>28.9%</td>
</tr>
<tr>
<td>Theft insurance</td>
<td>14.8%</td>
</tr>
<tr>
<td>“Key person” insurance</td>
<td>13.6%</td>
</tr>
<tr>
<td>Others</td>
<td>10.8%</td>
</tr>
<tr>
<td>Paramount bonds</td>
<td>8.9%</td>
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<tr>
<td>Insurance for profit losses</td>
<td>4.5%</td>
</tr>
<tr>
<td>Commitment lines</td>
<td>2.1%</td>
</tr>
<tr>
<td>Derivatives</td>
<td>1.6%</td>
</tr>
<tr>
<td>None</td>
<td>0.9%</td>
</tr>
</tbody>
</table>

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Figure 17: Risk finance mechanisms in use
see a competitive advantage in developing a BCP, especially in meeting customer requirements and having a higher ability to deliver products and services on time regardless of external events.

The enterprises that had developed written BCPs had done so to avoid economic losses, to gain client confidence, and to protect employees, as the top reasons, along with ensuring they could meet commitments during disruptions, customer requirements and previous disaster experience. Over half of those with a written BCP had used them in an actual disruption and found it to be useful or very useful. In addition, just over one-third of the group with BCPs reported their BCP had connected to the community or local disaster preparedness plan, suggesting that BCP of itself may encourage greater engagement with the local DPM system due to increased awareness of risks. This finding was reinforced by the fact that enterprises with BCPs also reported more use of risk financing mechanisms.

SMEs also used other written disaster preparedness plans, especially emergency response plans, evacuation plans, risk assessment plans, and emergency communication plans. However, most of the small enterprises did not have any disaster preparedness plans, and almost half the medium enterprises reported no such plans. Hence, disaster preparedness plans not connected with a BCP were also very limited amongst SMEs, indicating a need to invest in awareness-raising and capacity building for SME disaster resilience.

Less than 20% of respondents had attended BCP-related or DPM-related training, indicating that SMEs may benefit from training on both DPM and BCM, in order to enhance their capacity in disaster risk reduction, prevention and mitigation, and emergency response, as part of business continuity.

Respondents supported tax and financial incentives as key measures the government should provide to encourage SMEs to prepare BCPs, along with consultancy services or incentives for BCM capacity building, and non-financial incentives such as certification schemes and award recognition.

In terms of existing risk financing mechanisms, surveyed enterprises reported their top mechanisms included fire insurance, motor/car insurance, insurance for employees, and natural catastrophe insurance. Small enterprises had fewer risk financing mechanisms than medium and large enterprises. They tended to deal with disruptions and emergencies by: reducing expenses; using savings; and using loans from banking institution, as well as using other types of loans with interest, and support from family and friends. Large (47%) and medium (35%) enterprises were more likely to have insurance mechanism to deal with business disruption.

The survey sample group also indicated a large gender gap in SME leadership, with only 25% of the SMEs surveyed being led by women. The government may need to take this gender imbalance into account in both the roadmap process and in future policies to promote and support SME disaster resilience.
Inclusion of SMEs in legal, institutional and policy frameworks for climate change adaptation and disaster prevention and mitigation is important in addressing their shared community disaster risks.

SMEs and the national disaster prevention and mitigation system

Thailand’s legal, policy and institutional framework for disaster prevention and mitigation is made up of the following main components.

**The Disaster Prevention and Mitigation Act 2007**

The Disaster Prevention and Mitigation Act 2007 (DPM Act) was passed in 2007, following a review of Thailand’s disaster preparedness after the devastation of the December 2004 Indian Ocean Tsunami. The DPM Act establishes the government institutional powers and responsibilities for disaster prevention and mitigation (DPM), which include some non-government participation, and some requirements to consult with or support the private sector, although there is currently no defined role for the private sector in the DPM system institutions. The Act:

- Describes a multi-hazard mandate (Section 4 defines disasters to include natural and human made hazards, and accidents, as well as epidemics, armed attacks and other states of emergency etc.)
- Establishes the National Disaster Prevention and Mitigation Committee (NDPMC), headed by the Prime Minister and made up of a broad cross-section of heads of government agencies, and the Director-General of the Department of Disaster Prevention and Mitigation (DDPM), plus five experts in city planning, and disaster prevention and mitigation (Sections 5, 6). Hence, under
the DPM Act there is no requirement to include the private sector, and in practice there is no private sector representation on the NDPMC.26

Mandates DDPM to undertake activities on national disaster prevention and mitigation, including developing the National Disaster Prevention and Mitigation Plan, assisting disaster-affected people, supporting other government agencies, and consulting with the private sector. DDPM is also required to research and implement measures to prevent and mitigate disaster impacts, assess and evaluate disaster prevention and mitigation activities, and, importantly, to provide advice and training to other government services, local administrations and the private sector on DPM. (Section 11).

Makes Provincial Governors responsible for DPM in their own province, including formulating a Provincial DPM Plan that is consistent with the national plan, with assistance from a committee that includes local administrations and public charities (Sections 15-18). As with the national body, the private sector is not mentioned.

The Bangkok Metropolitan Governor is also required to formulate the DPM Plan for Bangkok with the assistance of a committee that includes government, public charities and community delegates (Sections 32-34). Although private sector representation is not specified, it is possible that the business sector – potentially SMEs or their organizations – could be amongst the community delegates.

District Governors and Local Administration are the first line of response, command and damage assessment if a disaster occurs, with support from government officers (Sections 19-30). There is no provision in the Act for representative committees at these district or local levels, so this is not presently an avenue for private sector/SME or other community members to participate in DPM.

26 There is no private sector or SME representative in NDPMC. See: DDPM. 2015. National Disaster Prevention and Mitigation Plan 2015. P. 120. (Thai language only).

National Disaster Prevention and Mitigation Plan 2015

In March 2015 the Cabinet approved the National Disaster Prevention and Mitigation Plan 2015,27 as the 2010–2014 NDPM Plan had expired; DDPM had initiated a consultative process in June 2013 to draft the new plan.28 The new NDPM Plan includes: assignment of ministerial and other government responsibilities, including requirements for “the private sector and other sectors to adopt and follow the National Disaster Prevention and Mitigation Plan 2015”; a requirement for all agencies to give budget allocation priority to “disaster prevention, relief, preparation, emergency management and sustainable rehabilitation”; and a requirement for agencies at all levels to have action plans for its implementation, and “to include projects relevant to disaster prevention and mitigation in their annual plans.”29 The 2015 Plan also seeks to better incorporate DRR into broader national planning for DPM, based on the Sendai Framework for Disaster Risk Reduction 2015–2030.30

National Disaster Prevention and Mitigation Plan (NDPMP) 2010–2014

Although the NDPMP has now been replaced by the 2015 plan, it is worthwhile to note some of the ways in which it mandated inclusion of the private sector in the DPM system. Examples of such inclusion, which can be built upon further with greater awareness of SME disaster resilience needs, are:

Under implementing mechanisms, Local, Municipal, District and City Command Centers were to include representatives from the local private sector (4.3.2).3 Private sector employees

29 ibid.
30 The Sendai Framework is available at http://www.preventionweb.net/files/43291_sendaiframeworkfordrren.pdf
were also included as potential Command Center employees at national and local levels (4.3.4). However, these measures appear to be aimed more at gaining the participation and resources of large enterprises, than involving SMEs for their own resilience needs. The role is similar regarding equipment supplies in emergency operations (5.3.6), with the private sector resources included.

Concerning disaster education and awareness building, it aimed to use private sector networks for dissemination, and also to include DPM awareness in private sector training (4.4.3). Concerning preparedness measures, private sector training was also noted as a means to facilitate and promote private sector involvement in disaster management activities (5.3.3). These measures are aimed more at the type of networks and training in which SMEs might be engaged, and which could offer them opportunities for increasing their DPM knowledge towards their own disaster resilience.

Concerning emergency management, the private sector is considered an essential part of any operations, although again this is more in the role of support to government efforts and may therefore be aimed more at larger businesses.  

These inclusions of the private sector in the previous NDPM Plan indicate a much higher level of awareness about the role and needs of the private sector in the DPM system, compared with the DPM Act itself. Much of the inclusion concerns the role of larger enterprises as resources to government during disasters, rather than being concerned with the needs of SMEs as specially affected by certain types of hazards and needing targeted support. This impression was reinforced during consultation meetings for this report, with a strong perception that the role of the private sector in DPM is to provide resources to government, rather than regarding SMEs as a sector in need of specific support themselves. The attention in the NDPM Plan to private sector training as a means of raising DPM awareness is positive, however, and DPM could be included more systematically in SME training for BCP and other contingency planning tools.

**Strategic National Action Plan on Disaster Risk Reduction 2010–2019 (SNAP)**

The Strategic National Action Plan on Disaster Risk Reduction 2010–2019 (SNAP) is also in place, but appears less central in practice than the NDPM plan. Its focus is on DRR specifically, and it was developed in line with Thailand’s commitments under the Hyogo Framework for Action. It is currently being updated in line with the Sendai Framework. It identifies “Private Organizations and Agencies” as stakeholders in DRR. It also provides that the NDPM Council will include representatives from the private sector, and list private agencies as supporting actors throughout the policy. It is thus more inclusive of the private sector than either the DPM law or the NDPM. Revisions in line with the Sendai Framework seem likely to maintain this focus, as it is a key element of the Sendai Framework, as it was for the Hyogo Framework.

**SMEs and Climate Change Legislation and Institutions**

Thailand is a party to the United Nations Framework Convention on Climate Change, having ratified it on 28th December 1994. It also ratified the Kyoto Protocol in 2002. The Office of Climate Change (OCC), Office of Natural Resources and Environmental Policy and Planning (ONEP), Ministry of Natural Resources and Environment (MonRE) is the responsible institution, under the Environmental Protection and Promotion Act, B.E. 2535 (1992).

32 Ibid. P.45.
35 Note: could not locate copy or summary in English.
National Policies on Climate Change

The National Strategic Plan on Climate Change BE 2551-2555 (AD 2008-2012) concerned the development phases in implementing climate change adaptation. It focused on research with stakeholder and support funding, developing a web-based knowledge and information platform, establishing early warning systems for fire and flood, and some pilot strategies. The Thailand Climate Change Master Plan BE 2556-2593 (AD 2012-2050) also includes climate change adaptation (CCA), as well as mitigation measures, and national capacity building. It includes the aim to promoting partnership between the public, private and civil-society sectors, but its content is more concerned with government activity. There has also been under development for some time a Thailand Adaptation Plan.

Sector level policies have also been formulated to support CCA, for example: water management and irrigation where combating increased levels of droughts and floods caused by extreme events is likely; and in the agriculture sector, where water stress resistant seed varieties are being researched and distributed for paddy cultivation, given the potentially serious impact of climate change Thailand’s food security. Climate change policy has considered measures on disaster management, and engaged government departments and agencies as well as the private sector, led by the Thai Chamber of Commerce, in increasing awareness of the risk from climate change.

Roadmap Issues

SME access to climate and disaster risk data for BCM:

- Natural hazard and climate change risk mapping and risk assessments to regional and local level are an essential tool to underpin SME disaster resilience, in particular access to such data as part of enterprise and area BCPs. The roadmap process could consider ways to improve such access through DDPM and CCO, whether through special risk mapping, or use of existing data in SME tools and training for BCM.

Private Sector and SME inclusion in DPM policy, planning and local institutions:

- The DPM Act provides some limited avenues for private sector participation in the DPM system, although the policy frameworks that support the law provide for greater private sector engagement. However, the private sector appears mainly to be perceived as a partner in disaster response and recovery. The roadmap process could explore how to include SMEs in the DPM system as:
  - Part of community disaster risk reduction, prevention and mitigation efforts, as both contributors and beneficiaries in efforts to reduce shared community risks and undertake an effective emergency response; and
  - As a specific target group for DPM policies, given that SMEs suffer different types of disaster impacts compared with either the general community or larger enterprises. This could consider how SMEs can have a stronger voice in local and national DPM policy frameworks and institutions to ensure their needs in disaster resilience are addressed.

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36 Tatichara, Runghiwa. 2013. “Thailand and Climate Change Adaptation” (Presentation, Quezon City, the Philippines), Bangkok: Office of Climate Change, The Office of Natural Resources and Environmental Planning, MoNRE, Thailand. (Could not locate copy in English.)

37 Tatichara, Runghiwa. 2013. “Thailand and Climate Change Adaptation” (Presentation, Quezon City, the Philippines), Bangkok: Office of Climate Change, The Office of Natural Resources and Environmental Planning, MoNRE, Thailand.


Disaster resilience in Thailand’s support for SME development

The SME Development and Promotion System

Institutions

The lead governmental agency for general SME development and support is the Office of Small and Medium Enterprises Promotion (OSMEP). It in turn supports the overall policy and governance body for SMEs, the National Board of SME Promotion.

The policy and financial support mechanisms in place to encourage and support SME development also involve the Department of Industrial Promotion, as well as other departments and programmes within the Ministry of Industry, including the Thai Industrial Standards Institute (TISI), which developed the Thai BCP standard in 2012.

The SME promotion policy frameworks are in turn supported by government financial institutions, beginning with the oversight role of the Bank of Thailand (BOT), whose mandate includes support for the business sector by supporting financial sector efficiency, and in particular promoting well-functioning market mechanism especially for SMEs as ‘one of the key dimensions in the design of Thailand’s financial landscape.’ This in turn is implemented through Government financial institutions such as: the Export-Import bank of Thailand (EXIM Bank), the Bank for Agriculture and Agricultural Co-operatives, the Small and Medium Enterprise Development Bank of Thailand Bank (SME Bank), the Government Savings Bank, the Government Housing Bank, and the Islamic Bank of Thailand (all of which were engaged in SME finance during the 2011 flood recovery), as well as private commercial banks, along with the Thai Credit Guarantee Corporation (TCG) (guaranteeing soft loans for SME recovery) and the National Credit Bureau.

Based on the 2011 flood response and recovery measures outlined below, SME support institutions – at least for disaster recovery programmes, but also for longer term measures – also included in practice: the Ministry of Finance, in particular the Customs Department and the Revenue Department, plus the Board of Investment (BOI) (tax concessions for flood recovery); the Office of the Insurance Commission (OIC); the Industrial Estate Authority of Thailand (IEAT) (flood protection and area BCP for industrial estates); the Ministry of Labor (employment support during disaster disruption), the Department of International Trade Promotion (DITP) and the Ministry of Commerce (cooperation with Japan).

In addition, the 2011 floods response gave birth to a new institutional player, the National Catastrophe Insurance Fund (NCIF).

**OSMEP Legislation & policy**

The key legislation underpinning OSMEP’s role is the SME Promotion Act, B.E. 2543 (2000), and Ministerial Regulation B.E. 2545 (2002). Under this law, OSMEP is a government agency established to implement policies and promotion plans for Thai SMEs. OSMEP is also mandated as a coordinating center for the public sector, state-owned enterprises and the private sector efforts in SME support.

The main policies for implementing SME promotion are the Third SMEs Promotion Master Plan 2012-2016 (OSMEP), and the SME Promotion Strategic Action Plan 2013 (OSMEP). The National Economic and Social Development Plan (2012-2016) is also a key umbrella policy framework.

**SMEs Development and Promotion Plan (2012-2016)**

The four main objectives of the plan include: (1) ensuring an effective environment to encourage SME business activities; (2) increasing the competitiveness of SMEs; (3) supporting the equitable and balanced growth of SMEs in all areas; and (4) improving the capacity of Thai SMEs to connect to the global economy.

Disaster risk reduction was included in the first objective of the plan in recognition of the fact that SME business operations were affected by disruptive events including natural and man-made disasters. OSMEP has assisted SMEs to recover from disasters as well as mitigating their impacts by:

- Providing financial assistance to SMEs
- Mobilizing capital resources among SMEs to assist those whose businesses are disrupted by disasters
- Extending tax and social security fund payments dates
- Improving the liquidity of disaster-affected SMEs to avoid unemployment
- Providing the experts in insurance law to advise SMEs about disaster insurance claims
- Providing the temporary sites for SMEs to resume their operations
- Encouraging SMEs to undertake risk management and set up disaster warning systems.

**National Economic and Social Development Plan (2012-2016)**

The 11th NESD Plan highlights the risks and the impacts of disasters on the country’s development. The plan also requires measures for the private sector to: (1) develop equipment and management mechanisms to cope with climate change and (2) prepare for natural disasters and emergencies by, among other things, implementing BCP.

Hence, while disaster and climate resilience of SMEs is not the central mandate of OSMEP, the legal and policy framework under which it operates provides

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41 ADPC. 2014, pp. 10-11.
42 ADPC. 2014, p. 11.
guidance and ample scope for implementation of disaster resilience measures for SMEs.

National Catastrophe Insurance Fund (NCIF)

The devastating floods of 2011 not only damaged enterprises directly, but also endangered the insurance industry in Thailand due to the massive number of claims in a short period. The Government’s response was to establish in 2012 the National Catastrophe Insurance Fund (NCIF), a 50-billion baht fund established by a royal decree of 10 January in 2012. Its objectives are to extend individuals’ and business owners’ access to insurance cover, and especially to provide public access to catastrophe insurance coverage at a premium rate, as well as to provide sufficient reinsurance capacity at the lowest premium rate. An underlying objective is to reassure foreign investors and business owners of the security of their business operations in Thailand.

The Fund in fact serves as a reinsurance reserve, with the primary insurance provided by private companies that are able to offer insurance at the specific premium rate due to the Fund, but also

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retain a part of the risk. Insurance policies that draw on the Fund cover three types of natural hazard: flood, earthquake and windstorm. The triggers for accessing the Fund are: (1) the Cabinet escalates the level of an event to ‘Catastrophe’; or (2) the claim for the damages exceeds 5 billion baht per event within 60 days; or (3) an earthquake reaching at least 7-on the Richter scale occurs; or (4) a windstorm with a minimum speed of 120 kilometers per hour occurs. Claims are based on the actual damaged sustained (up to specified limits) after the insurance company conducts a survey and makes an assessment.

The NCIF is a major innovation for disaster insurance in Thailand. It has now been operating for three years and it may be possible to assess its impact on the uptake of insurance by SMEs.

Building on the 2011 flood response initiatives

Having considered the two main policy and institutional frameworks that support SME disaster resilience in Thailand, it is also useful to review briefly the policy initiatives the Government put in place in response to the 2011 floods. The purpose of this is to understand the funding options and institutional roles engaged during the response and recovery period, as well as to appreciate the legacy of that period in terms of ongoing initiatives to support SME resilience. This provides some pointers to enhance legal preparedness for future response and recovery operations but also, importantly, policy focus areas for risk reduction and mitigation to prevent future hazards from becoming human and economic disasters.

The Government initiated a range of support and recovery mechanisms for SMEs during and after the 2011 floods, which are detailed more fully in a 2014 report from ADPC, Improving Small and Enterprises (SMEs) Resilience in Thailand (ADPC. 2014. 15-23). The following summary draws substantially on that earlier report.

Response

During the floods OSMEP established a special Disaster Relief Command Call Center for flood-affected SMEs, which received more than 100 calls, most of them concerning access to financial assistance. The Government then initiated a range of short-term recovery assistance measures as well as longer-term policy initiatives to support SME disaster resilience.

Recovery & Reconstruction

The Government offered a range of specific recovery measures for SMEs that included tax relief, access to credit, insurance, support to maintain employment, and other measures summarized below.

Tax measures for recovery

Tax relief measures administered by the Thai Customs Department, Ministry of Finance, included:

- Income tax was exemption for flood-affected enterprises
- Extended tax indemnity for insurance for flood-affected firms, to compensate them for the gap between insurance pay-outs and real replacement costs of assets
- Value added tax (VAT) exemption for commodities donated to the flood victims (by VAT registered firms)
- Extension of the tax payment deadline for enterprises in the flood-affected areas (without no penalties)

Tax relief measures administered by the Revenue Department, Ministry of Finance, also included key measures for flood-affected SMEs as follows:

- Allowable deduction of 1.5 times their expenses from pre-tax income (to subsidize a minimum wage increase of 300 baht per day which had commenced at the same time as the floods hit) between 1 January and 31 December 2013.
Exemption from corporate income tax on their first 300,000 baht-net profit

Exemption from corporate income tax for machinery adjustments, as well as 100 percent machinery depreciation for new machine purchased between 1 January and 31 December 2013.

The Board of Investment (BOI) supported SMEs with:

- Exemption from corporate income tax for 8 years for new investment or relocation
- Exemption on taxes for importation of machinery and raw materials for the BOI promoted companies
- Support through approximately 55 industrial area projects for flood recovery

Access to credit for recovery

The Cabinet approved credit measures to be administered by Government financial institutions to increase the liquidity of enterprises in flood-hit areas, as follows:

The Bank of Thailand authorized 300,000 million baht credit to assist SMEs, administered through the Export-Import bank of Thailand (EXIM Bank), the Bank for Agriculture and Agricultural Cooperatives, SME Bank, the Government Savings Bank, the Government Housing Bank, and the Islamic Bank of Thailand. The credit offered up to 30 million baht per SME at reduced interest rates (capped at 3 percent per year).

The Small and Medium Enterprise Development Bank of Thailand (SME Bank), one of the core supporters of SMEs:

- Authorized a two billion baht loan amount for flood-affected SMEs, with: a 6-year term loan; below-market interest rates (with a Government subsidy); exemption from payment of any principal for the first two years; and no requirement to provide collateral or submit financial inspection reports to the Bank.

The Government Savings Bank:

- Provided very low interest loans to SMEs (at 3 percent for three consecutive years)
- Through commercial banks, offered 50:50 subsidized soft loans to flood-affected SMEs. This measure was to increase the financial capability of commercial banks in offering credit to SMEs in the flood-hit areas.

The Thai Credit Guarantee Corporation (TCG) launched a credit guarantee scheme to support loans to SMEs, the Collateral Mechanism of Portfolio Guarantee Scheme. The total loan guarantee limit of this mechanism was 100,000 million baht, with a guarantee period of 7 years, limited to a 10 million baht guarantee per enterprise.

Insurance advocacy

Following the 2011 floods, the Office of the Insurance Commission (OIC) encouraged insurance companies to pay compensation to insured SMEs in the flood-hit areas as soon as possible. Relevant insurance policies included: fire, industrial all risks insurance (IAR) – covering damaged assets caused by the floods – and business interruption insurance – covering opportunity costs when firms are temporarily shut down due to floods. However, this experience also triggered the development of a long-term Government catastrophe insurance scheme, as discussed below.
Employment support

In order to prevent unemployment and mitigate layoffs, the Ministry of Labor launched labor measures including:

- A Layoff Prevention and Mitigation Project, implemented by Department of Labor Protection and Welfare, under which the Government provided a 2,000 baht subsidy per employee per month for up to three months to help SMEs maintain their workforce despite being severely affected by the floods;

- A Friend-to-Friend Project to assist employees of flood-affected SMEs to work in other enterprises in the short term. As at November 2011, 568 enterprises from 45 provinces had joined the project and engaged 69,236 temporary employees to work for them. In a supplementary initiative, the Department of Skill Development also offered skill development courses to improve employee skills based on the demand of employers (for approximately 15,000 employees); and

- Reduced employer Social Security Contributions for insured employees (normal 5% reduced to 3% for the six months from January to June 2012 and to 4 percent from July to December 2012), authorized by Ministerial Regulation Prescribing the Rate of Contributions to the Social Security Fund B.E. 2555 (2012).

These measures were innovative, well targeted, and apparently effective in maintaining employment for SME workers, both during the floods and in the recovery period.

Business continuity advice

The Ministry of Industry implemented an Industrial Clinic Project which advised flood-affected SMEs, community enterprises and the manufacturing sector on how to continue their operations from an early date. Participants of this project received advice from approximately 316 experts including consultants from the Ministry of Industry, academics and volunteers from the private sector. The financial amount of this project was 500,000 million baht covering 22 provinces and 5,000 flood-affected entrepreneurs. (ADPC. 2014. P.24)

Longer term initiatives for SME disaster resilience arising from 2011

Public Sector Crisis Management Framework

Realizing that many government services could not function well during the unprecedented flooding in 2011, and that the functioning of Government was central to in supporting communities and the private sector during major hazards, the Office of the Public Sector Development Commission (OPDC) proposed a Crisis Management Framework for the Public Sector. Cabinet adopted it by resolution on 24 April 2012. It required all government sectors, including provincial offices, public universities, local administrative organizations, public companies and state-owned enterprises to develop BCPs as part of disaster preparedness, based on four steps including: (1) awareness raising and knowledge dissemination; (2) public sector preparedness (establishment of a pilot project); (3) BCP development, implementation and operation; and (4) sustainable management. With the help of Deloitte Touche Tohmatsu Jaiyos Co. Ltd, OPDC further launched a BCP Guideline for the Public Sector in 2013 (based on the UK/Ireland best practice standard “BS25999- Business Continuity Management”) (ADPC. 2014. 12).

Strategy for Reconstruction and Future Development

In November 2011 the Government developed a Strategy for Reconstruction and Future Development to address disaster risks, crisis management and BCM. The five strategies of the framework included: (1) Water Resource Management; (2) Strategy for Production and Service Sector Restructuring ; (3) Spatial Development for New Economic Areas; (4) Strategy for infrastructure development; and (5) Insurance System Development. Some of the outcomes of this strategy include the following.
Water Management and Flood Prevention Infrastructure

A Water Management and Flood Prevention Plan was based on 350 billion baht expenditure to construct infrastructure, including 17 flood mitigation basins along the Chao Phraya River Basin (noting that Bangkok is built on the Chao Phraya delta). This River Basin area, comprised of 80 percent agricultural land and including 18 million people, was declared to be a ‘flood vulnerable’ area. In addition, the Government has also planned to build additional floodways and flood diversion channels valued at 120 billion baht, which would allow floodwaters to drain at up to 1.5 billion cubic meters per second.

OSMEP also published an SME Flood Manual which gathers all information relating to flood relief assistance from various government agencies and commercial banks.

Production and Service Sector Restructuring, including BCM

Disaster risk reduction and BCM were included in the Strategy for Production and Service Sector Restructuring, which aimed to prevent disasters crises in the sector by encouraging the private sector to set up BCM systems to mitigate disaster risks and ensure the continuity of their business operations and supply chains.

Thailand’s general BCM standards were revised by the Thai Industrial Standards Institute (TISI) to align them with the relevant ISO standard, ISO 22301- Societal Security – Business Continuity Management Systems (BCMS). The new Thai standard for BCM was then launched in 2012 (TIS22301-2556). The main objectives of the standard include: (1) supporting holistic management in the organization; (2) identifying potential threats to operations of the organization; and (3) coping with business disruption by implementing a business continuity plan (BCP). (ADPC 2014 p. 12)

Also in the area of BCM, two SME projects based on Japan-Thailand partnerships are ongoing. These are:

- The Daruma project, implemented by the Department of International Trade Promotion (DITP), Thailand, the Ministry of Commerce Thailand and the Japan External Trade Organization (JETRO). The purpose was to encourage Thai SMEs to continue their business despite natural hazards (“Daruma” meaning a rocking doll). The project aims to jointly create value, improve productivity, boost exports and open European markets for Japanese and Thai SMEs working together.

- The Otagai project initiative from Japan’s METI and JICA, and since 2012 part of the responsibilities of the Department of Industrial Promotion, Ministry of Industry Thailand and the National Economic and Social Development Board of Thailand (NESDB). This includes the concept of cooperation through Otagai Business Continuity (meaning “a plan to help each other while facing trouble.”). Using BCM as a main concept, this approach aims to assist Thai and Japanese SMEs to form ‘sister clusters to strengthen their business activities during normal circumstances, to be one another’s suppliers during emergencies, and to increase customers’ confidence in both Thai and Japanese companies. The initial target groups were flood-affected Thai industrial parks around Bangkok, although as of 2014 some challenges to cooperation were being experienced, including the language barrier, the price/quality gap between Japanese and Thai products, and the fact that Japanese industrial estates experience less area-based impact from natural hazards as they are more dispersed (ADPC. 2014. 23-24).

Spatial Development for Economic Areas

A Flood Prevention and Protection scheme was prepared by the Industrial Estate Authority of Thailand (IEAT) to guarantee investors that industrial areas would be safe from floods and that production and businesses would be able to resume as usual. For example, a dam was reconstructed at three adjacent industrial estates in Ayutthaya, and flood dikes were constructed in 6 industrial estates (Bangchan, Lad Krabang, Bang Poo, Bang Plee, Samutsakorn and Pichit, with
financial assistance from the Government Savings Bank’s soft loan packages.

If the IEAT is able to continue this policy approach of disaster awareness in establishing new economic areas, especially in terms of site choice and disaster prevention measures, and to include initiatives such as area BCP for both new and established industrial estates, this could have a significant positive impact on SME disaster resilience in the manufacturing sector.

**National Catastrophe Insurance Fund**

As noted above the NCIF was one of the key innovations arising from the 2011 floods that address ongoing private sector resilience.

**Observations on the 2011 ad hoc measures**

The response and recovery support mechanisms described above were extensive and well tailored to the needs of SMEs, and for these reasons undoubtedly greatly reduced the impact of the 2011 floods on national economic development. However, almost all of the measures required substantial extra-budgetary outlays or revenue losses by the Government over less than a two-year period, and some are continuing to result in lost revenues due to ongoing tax exemptions and low interest loans. One objective of a roadmap process could therefore be to also reduce the impact of disasters on government revenues by helping SMEs reduce losses, including through government investment in risk reduction and prevention. For example, through mechanisms such as:

- improved awareness, preparedness and risk reduction by SMEs through BCM to reduce future disruptions, with government incentives for SMEs to develop BCPs, such as tax deductions and lower insurance costs for SMEs with BCPs,
- flood mitigation infrastructure to reduce the underlying risk of flooding in affected areas; and
- hazard mapping to identify all medium and high risks, including climate change projections such as those relating to sea level rise in river deltas, as the basis for both government and private sector mitigation measures.

A further observation is that these ad hoc disaster response and recovery initiatives that targeted SME needs were undertaken by the government ministries and financial institutions concerned with SME promotion, business administration, revenues and insurance, apparently without significant or formal engagement with the institutional components of the national system of disaster prevention and mitigation. While such engagement may well have occurred at an informal level, or within Cabinet deliberations, it may be useful to consider whether the expertise of the DPM institutions could be better utilized to support SMEs in future disasters.

The very positive long-term policy initiatives that arose from the 2011 flood experience include:

- the establishment of the National Catastrophe Insurance Fund
- updating of Thailand’s BCM standards for the private sector, as well as the adoption of BCM standards and BCP development for the government sector
- the focus of Industrial Estate Authority of Thailand (IEAT) on guaranteeing that industrial areas would be safe from floods, through mitigation works in existing estates
- the Government’s completed works and planned investment in flood mitigation works in the Chao Phraya River Basin

All of these require continued investment and leadership from the Government to ensure they sustain their momentum and receive adequate resources.
Gender and SME Development and Resilience

In addition, given the survey findings on gender imbalance in SME leadership, consideration of SME longer term resilience also needs to engage with institutions concerned with gender inequality. The Office of Women’s Affairs and Family Development, of the Ministry of Social Development and Human Security, is the national agency responsible for promoting gender equality and the empowerment of women. It serves as a secretariat of the National Inter-ministerial Committee on Policy and Strategy for the Improvement of the Status of Women, chaired by the Prime Minister and develops. The legislative and policy base comes from the fact that Thailand ratified the international Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) in 1985, and its Optional Protocol in 2000 (allowing oversight by the CEDAW Committee), and these international principles are now part of the national policy and programming framework, including in the Constitution B.E. 2550 (2007). The Office also develops and implements a five-year cycled National Women’s Development Plans. The current Plan covers the period of 2012-2016.44

An effective approach could incorporate both (a) a long-term strategy of aiming to raise awareness to reduce discrimination and other barriers to women’s participation in private sector management and entrepreneurial activity, intended to improve gender balance within SME leadership, and (b) a short term strategy of engaging with women owners and managers in SMEs to ensure that any separate concerns they have are taken into account in the policy framework, and to provide them with direct support and encouragement in their roles, as well as recruiting some women leaders as SME disaster resilience champions.

Roadmap Issues

Effectiveness of the National Catastrophe Insurance Fund (NCIF) and other measures in increasing SME insurance:

› As the NCIF represents an innovation in risk financing in Thailand which has now been established for three years, it may be timely for the Government to assess its effectiveness in fulfilling the intended objectives and to consider whether there is a need for any policy adjustments to the scheme in order to better support SME disaster resilience. One issue to examine is the extent to which SMEs have taken up the premium-rated catastrophe insurance on offer, as anecdotal reports during the project mission suggested that SME interest in obtaining insurance peaked following the 2011 floods, but that this was short-lived, and insurance rates remain very low overall.

Addressing gender imbalance in the drive for greater SME resilience:

› Engaging with women SME leaders as a minority stakeholder group who may have a different perspective, and potentially inviting them into leadership roles on disaster resilience, such as disaster resilience champions.

More formal and sustained cooperation between the systems for SME promotion and DPM/CCA:

› The momentum for improving SME disaster resilience could also be supported through more formal and sustained technical cooperation between the Government’s systems for SME promotion and for DPM, particularly in areas such as risk assessments and hazard mapping as the basis for mitigation and preparedness measures, awareness raising of SMEs, contingency planning and emergency drills, effective dissemination of early warnings, and SME capacity in emergency response. Many of these elements can be factored into BCM if the enterprises have the relevant risk data and access to expert materials and advice, in particular during the development of enterprise level or area BCPs.

44 See UN Women, Asia-Pacific, website: http://asiapacific.unwomen.org/en/countries/thailand#sthash.yGMMJmPG.dpuf
In moving towards a roadmap to promote SME disaster-resilience it will be important to engage the relevant stakeholders, including private sector organizations or other groupings that can represent SMEs across all key sectors, and also to link with Government institutions’ legal mandates, planning, policy and budgetary processes, as well as to access their expertise. Accordingly, this report does not make specific recommendations but, rather, raises issues for consideration during the process, some of which have been identified in the foregoing report as “roadmap issues”. These are intentionally open-ended, as it is not the purpose of this report to provide answers, but to give a strategic policy analysis, identify issues, and propose a framework for the roadmap process.

In thinking about how to disaggregate “SME disaster-resilience” into practicable elements for a roadmap, it is helpful to consider:

What are the identified needs: What do we know about the extent and type of SME disaster losses, their risk of exposure to hazards, and their vulnerability to different types of hazard? Do different categories of SME have different risk factors? What do we know about the current level of knowledge, disaster-preparedness and disaster risk management of SMEs? What support do they need to become more resilient to disasters? Do SMEs in different sectors or regions, or of different size or type of business structure have different support needs? What else do we need to know?

Who needs to be concerned with SME disaster resilience: Who are the SME target groups? Who are the wider stakeholders? Who are the experts who can support the process, and help to fill the knowledge gaps? Who can implement the different policies, strategies or activities that may emerge from a roadmap process?
Which policy mechanisms or actions can best support SMEs to become more disaster-resilient: Is it any or all of disaster risk information, training/capacity-building on DPM/BCP, better integration into the DPM system at local level, tax incentives, loans, insurance or other risk financing?

What are the identified needs for SME disaster resilience?

The SME Survey of 425 enterprises (47% small, 35% medium, 18% large) indicated that, while SMEs were concerned about the natural hazard of flooding, they were also concerned about the disruptive effects of regional or global economic crisis. Fire, civil unrest, and power blackouts were also of high concern, for both anticipated and experienced disruptions. These findings indicate that SMEs in Thailand are likely to be most receptive to an all-hazards approach to disaster resilience.

The effect of such disruptions had a major impact on business continuity, profitability and long-term viability of SMEs, causing total shut down in some cases, financial losses, and disruptions such as: employees being unable to go to work; enterprises being unable to deliver products; damage to facilities and equipment; suppliers being unable deliver materials/services; and raw materials being damaged. This indicates a need for better preparedness and risk reduction to mitigate such impacts, as well as mechanisms such as insurance and loans to assist recovery.

In terms of existing risk financing mechanisms, fire insurance, motor/car insurance, insurance for employees, and natural catastrophe insurance were all reported, but small enterprises had fewer risk financing mechanisms than medium and large enterprises. They tended to deal with disruptions and emergencies by reducing expenses, using savings, using loans from banking institutions as well as using other types of loans with interest, and support from family and friends. Large (47%) and medium (35%) enterprises were more likely to have insurance mechanism to deal with business disruption. This indicates a need for either more awareness or more tailored insurance and other risk financing mechanisms to meet the needs of SMEs, especially small businesses.

BCM, and in particular the tool of BCP, has been identified in Thailand as an important basis for business continuity. Although only about 15% of small enterprises and 21.5% of medium enterprises surveyed had a written BCP, this compares favorably with a 2012 survey that showed none of the SMEs surveyed than had a BCPs. This suggests significant progress has been made since 2012 on BCP adoption, so that the BCP promotion mechanism in place, by both the government and large enterprises focusing on their suppliers, should be continued.

SMEs without a BCP said they lacked the knowledge and skills to develop them, but they could be persuaded of their importance by a demonstration of how BCP can help them avoid economic loss if business disruption occurs. Other motivators of high frequency were customer requirements, a perception of BCP as a good business practice, because of a previous disaster experience, and to gain clients’ confidence. These findings suggest SMEs need to see a competitive advantage in developing a BCP, especially in meeting customer requirements and having a higher ability to deliver products and services on time regardless of external events.

The enterprises that had developed written BCPs had done so to avoid economic losses, to gain client confidence, and to protect employees, as the top reasons, along with ensuring they could meet commitments during disruptions, customer requirements and previous disaster experience. Over half of those with a written BCP had also used them in an actual disruption and almost all found them to be useful or very useful. Such experience could be used to motivate their peers.

Just over one-third of those with BCPs reported their BCP had connected to the community or local disaster preparedness plan, suggesting that BCP of itself may encourage greater engagement with the local DPM system due to increased awareness of risks. This finding was reinforced by the fact that
enterprises with BCPs also reported more use of risk financing mechanisms.

In terms of other written disaster preparedness plans, the top plans respondents had were emergency response plans, evacuation plans, risk assessment plans, and emergency communication plans. However, most of the small enterprises did not have any disaster preparedness plans, and almost half the medium enterprises reported no such plans. Hence, disaster preparedness plans not connected with a BCP were also very limited amongst SMEs, indicating a need to invest in awareness-raising and capacity building for SME disaster resilience.

Respondents supported tax and financial incentives as necessary measures that government should provide to encourage SMEs to prepare a BCP. Consultancy services or incentives for BCM capacity building were also needed, and other non-financial incentives they suggested be provided by government included certification schemes and award recognition. Less than 20% of respondents had attended BCP-related or DPM-related training, indicating that SMEs may benefit from training on both DPM and BCM, in order to enhance their capacity in disaster risk reduction, prevention and mitigation, and emergency response, as part of business continuity.

Who are the SME resilience roadmap stakeholders?

**Private sector**

SMEs and the industry bodies that represent them need to be seen as the key stakeholders in an SME resilience road mapping process. This may include, for example:

- organizations such as the Thai SME Council, which is a partner in the ADPC project, as well as other industry organizations.
- large corporations willing to invest expertise and resources in BCM for SMEs in their supply chain.
- Isuzu Motors (Thailand) Co., Ltd., and Toyota Cooperation Club have both been involved with the ADPC project.
- industry cooperatives or industry clusters, such as in the agricultural sector
- organizations that promote and support women managers in the private sector

In industries or regions where SMEs are not well represented by private sector organizations, or do not have access to BCM support from large clients, the government may need to ensure additional consultation with individual SMEs for the roadmap, including in the country regions.

Government might also consider the advantage of supporting emerging SME organizations by providing funding or secretariat support, as well as how it might work with large enterprises to address supply chain issues and with industry cooperatives and clusters to investigate economies of scale in areas such as BCM preparation and insurance.

Given the survey finding of low representation of women as business leaders in Thailand, part of SME resilience strategies could include both addressing the gender imbalance (longer term) and creating separate opportunities for women leaders of SMEs to have a voice in the road map process (short term).

**Government**

As described in the report, the enabling environment for Thai SME disaster-resilience encompasses two main groupings of laws, policies and government institutions. These are, on the one hand, the systems of disaster prevention and mitigation and climate change adaptation (DPM/CCA), and on the other hand, an array of policy and financial support mechanisms in place to encourage and support SME development.

The DPM and CCA systems focus on hazards, risk reduction, early warning, response and recovery, as well as longer term planning for mitigation and adaptation to the projected impacts of climate change. The key institutions for DPM/
CCA in Thailand are the Department of Disaster Prevention and Mitigation (DDPM), supported by the National Disaster Warning Center, and the Office of Climate Change (OCC) in the Office of Natural Resources and Environmental Policy and Planning (ONEP), Ministry of Natural Resources and Environment (MonRE). At present these two structures for risk governance appear to operate relatively independently of each other, and also quietly separately from the institutional framework for SME development and support.

The policy and financial support mechanisms in place to encourage and support SME development are led by the Office of Small and Medium Enterprise Promotion (OSMEP), and involve the Department of Industrial Promotion, as well as other departments and programmes within the Ministry of Industry, including the Thai Industrial Standards Institute (TISI) (which developed the Thai BCP standard).

The SME promotion policy frameworks are in turn supported by government financial institutions, beginning with the oversight role of the Bank of Thailand (BOT), implemented through Government financial institutions such as: the Export-Import bank of Thailand (EXIM Bank), the Bank for Agriculture and Agricultural Co-operatives, the SME Bank, the Government Savings Bank, the Government Housing Bank, and the Islamic Bank of Thailand, as well as private commercial banks, along with the Thai Credit Guarantee Corporation (TCG) (guaranteeing soft loans for SME recovery).

Based on the 2011 flood response and recovery measures, the SME support institutions also include in practice – at least for disaster recovery programmes, but also for longer term measures – the Ministry of Finance, in particular the Customs Department and the Revenue Department, plus the Board of Investment (BOI) (all three provided tax concessions for recovery), as well as the Office of the Insurance Commission (OIC), the Industrial Estate Authority of Thailand (IEAT) (flood protection and area BCP for industrial estates), the Ministry of Labor (employment support during disaster disruption), the Department of International Trade Promotion (DITP) and the Ministry of Commerce (cooperation with Japan through the Daruma and Otagai projects). In addition, the 2011 floods response gave birth to a new institutional player, the National Catastrophe Insurance Fund (NCIF). The roles played by these institutions suggest that they should all be engaged in an SME disaster resilience road mapping process in the aspects that concern these areas of specialist expertise.

Which policy mechanisms or actions might be addressed in a roadmap for SMEs in Thailand?

Following the 2011 floods, the cooperation between Government institutions mandated to support and promote SMEs, including through access to finance, was impressive, as was their interaction with some other sectors such as the labour ministry and industrial estates authority. One focus for developing an SME roadmap could therefore be how to institutionalize such recovery cooperation.

As noted above, as yet there appears to have been little engagement as between DDPM, OSMEP and the other government institutions supporting SME development on the cross-cutting issue of SME disaster resilience, especially in the areas of disaster risk reduction and prevention for SMEs, and targeted awareness and training for SMEs on DPM. The issue for SMEs is that, at a government policy level, the specific question of their disaster resilience can easily be seen as both everybody’s business, and nobody’s business.

Risks from climate change also need to be addressed for SMEs medium and longer-term business continuity and growth. Some of these risks are locality-based, such as coastal areas subject to seal level rise, while others are more generalized, such as drought and flood extremes affecting agricultural production. For example, at a specific level, sea level rise could seriously impact both the City of Bangkok and the surrounding low-lying agricultural areas, as well as fish farming and processing businesses.
Specific issues to consider towards an SME resilience roadmap

Some specific roadmap issues arising from this report, which can be used as a starting point, are summarized below.

**Process and Stakeholders**

1. Undertake specific SME consultations during the roadmap process to ensure that SMEs in different industries and different regions can contribute to identifying their disaster resilience needs and to propose the most effective means of government support.

2. Include in the roadmap process a strategy for consultation with women headed SMEs and, in the longer term, include in government SME support strategies to address the gender imbalance of leadership in SMEs. This would require engagement with the Office of Women’s Affairs and Family Development, Ministry of Social Development and Human Security, and National Inter-ministerial Committee on Policy and Strategy for the Improvement of the Status of Women.

3. Consider providing ongoing government support and capacity building for SME organizations as a way to include SME concerns in institutional structures that address SME resilience and business support, as well as providing a structure for SME capacity building. For example, the SME Council that has participated in this project is a potential candidate for such support. Others may be industry-specific, or part of larger bodies such as the Thai Chamber of Commerce.

4. Assuming that the SME roadmap process will be led by the Office of Small and Medium Enterprise Development (OSMEP), it will also be important to include:

   - those whose expertise is needed for improving SME climate and disaster resilience, in particular the Department of Disaster Prevention and Mitigation - DDPM (regarding prevention and mitigation of disasters for SMEs, as well as response and recovery) and the Office of Climate Change - OCC (to ensure inclusion of climate change projections and adaptation strategies in BCM for SMEs as well to underpin decisions such as government planning for new industrial estates), and technical experts as needed from the National Disaster Warning Center and academia;

   - the other ministries, departments and institutions that underpin SME support in terms of business registration, standards accreditation, tax incentives, finance, disaster insurance, BCM training and capacity building, as noted above.

   - other government agencies that have been engaged in practice in previous disaster response and recovery support, based on the 2011 flood disaster initiatives, as noted above.

**Legislative and Statistical base for government SME support**

5. Review current statistical collection and analysis of SMEs in Thailand to determine whether more quantitative and qualitative data on enterprise characteristics is needed to ensure that policy interventions can address their disaster resilience.

6. Consider establishing a legislative base to recognize a category of micro enterprise within the current category of small enterprises. This would be in line with the current regional trend, which is occurring because it assists governments to provide more targeted policy interventions based on the different characteristics and needs of very small businesses compared with those approaching the size of medium enterprises.

7. Review the extent of financial incentives for SMEs to reduce risk and prevent damage and loss from disasters, including through measures such as tax deductions for expenditure on preparing BCPs, and reduced insurance premiums or lower interest loans based on
evidence of strategies for disaster resilience and broader BCM.

**Multi-hazard BCM**

8. Strengthen SME capacities in all-hazard BCM, including risk assessment for all risks and the development of BCPs to increase their resilience to natural hazards, technological hazards and economic shocks.

9. Government work with private sector industry organizations and technical experts together, to assess SME disaster resilience needs on a sectoral basis and potentially develop tailored all-hazard BCM approaches by industry.

10. Continue to support SMEs to develop area BCPs and enterprise level BCPs through direct training support and tools, as well as incentives such as tax deductions, or preferential terms of loans and insurance for enterprises with BCPs.

**Institutional cooperation mechanisms for response and recovery support**

11. Consider how the formal planning processes of DDPM, OSMEP, DIP and the financial institutions can better integrate support for SME disaster resilience as a cross-cutting issue within their main sectoral planning priorities and implementation strategies.

12. Institutionalize support for SME emergency response and initial recovery by mechanism such as DDPM engaging SMEs at the community level, as well as OSMEP working with DDPM to ensure that future SME disaster response and recovery operations have the full benefit of the data and capacities of Thailand’s specialist DPM agency.

13. Institutionalize SME disaster recovery support through mechanisms such as standard operating procedures (SOPs) for institutional cooperation, including the high level of cooperation demonstrated in the 2011 flood recovery between SME promotion and financial sector institutions and ministries. This might include planning for recovery cooperation for:
   - Future flood disasters, to ensure recovery programme start-up and access to recovery finance and tax relief for SMEs is more rapid.
   - Contingency planning for SME recovery support from other types of disasters, including civil unrest, tailored to the risk profile of different regions and cities.

**Private Sector and SME Capacity**

14. Consider ways in which Government institutions can both access existing private sector capacity and improve organizational structures for SMEs. For example:
   - Strengthen emerging SME organizations by providing funding or secretariat support, so that the government can more readily access SMEs own concerns, and as a means of strengthening SMEs capacity to raise awareness and offer tailored training and information for improved disaster resilience, and/or
   - Work with large enterprises and industry cooperatives to address supply chain issues and economies of scale for SME implementation of BCM that includes disaster resilience.

**Insurance**

15. Review the extent to which SMEs have taken up insurance or other risk financing mechanisms to help shield them from disaster losses and maintain business continuity. In particular, review the extent to which the National Catastrophe Insurance Fund (NCIF), which operates as a subsidized reinsurer for premium-rated private insurance policies, has stimulated SMEs to obtain catastrophe insurance, or whether there is a need for policy adjustment or additional types of insurance to meet the needs of SMEs.
Disaster prevention and climate change adaptation - reducing underlying risks

16. Conduct awareness-raising and natural hazard risk mapping at regional, city and local levels, to provide the necessary technical data for enterprise and area BCPs, focusing initially on the localities already known to be at high risk, and where there are concentration of exposed and vulnerable SMEs (e.g. the Chao Phraya River Basin, which has already been a Government focus, or the drought-prone areas of the Northern region).

17. Undertake climate change awareness-raising and specific risk mapping to develop technical advice for SMEs by region and area as to the projected effects of climate change. This could focus on enterprises in coastal cities and river deltas, as well as on agricultural production, and include advice and training on enterprise-level adaptation measures. The mapping process would also form the basis for broader government policy on land use planning, for building climate-change-resilient infrastructure, and planning for specific mitigation infrastructure in high risk regions, cities and areas.

18. Review BCM and BCP standards and training materials to ensure they provide an adequate basis for SMEs to assess and incorporate natural hazard and climate change risk, along with technological hazards and economic risks.
The first set of questions sought basic information about the business operations of the respondents, such as type of the business, gender of owner, year of establishment, location, number of employees and value of assets. These questions make it possible to classify the respondents according to sector and enterprise size (i.e., micro, small, medium, or large). Then, there were questions about perceptions of risk exposure and actual disaster experiences. The intent was to identify which among the many potential natural and human-made hazards are of concern to SMEs, including those which have actually affected them in the past including the extent of damages and how it impacted their businesses. The next category of questions sought to assess the status of BCP adoption and implementation by identifying by respondents. The questions also solicited inputs from respondents on what government can do to promote BCP amongst SMEs. The last group of questions dealt with existing risk reduction measures, previous relevant training and current

**Purpose of the Survey**

The survey aimed to gather information that will contribute to a deeper understanding of the current state of disaster resilience amongst SMEs. It also aimed to assess the status of the adoption of Business Continuity Plans (BCPs) amongst SMEs and to identify capacity gaps and training needs.

**Survey Questions**

The survey questions were grouped into seven parts.

<table>
<thead>
<tr>
<th>Part</th>
<th>Description</th>
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<tbody>
<tr>
<td>1</td>
<td>Basic information about the survey respondent</td>
</tr>
<tr>
<td>2</td>
<td>Risk exposure and previous disaster experience</td>
</tr>
<tr>
<td>3</td>
<td>BCP adoption</td>
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<tr>
<td>4</td>
<td>Incentives and training needs</td>
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<tr>
<td>5</td>
<td>Additional DRR information</td>
</tr>
<tr>
<td>6</td>
<td>Contact information</td>
</tr>
<tr>
<td>7</td>
<td>BCP implementation (only for those with BCP)</td>
</tr>
</tbody>
</table>
training needs. These provide additional information on the level of resilience of respondents and their capacity to mitigate the impacts of future disasters.

Survey Respondents

A total of 425 enterprises responded to the survey. The respondents were reached through four means, supported by project partners. Over 41% of respondents took the survey during a variety of events such as trainings and seminars organized by OSMEP, SME Bank, and ADPC. Toyota Cooperation Club and Isuzu Motor (Thailand) also helped ADPC collect data from their suppliers via e-mail (29.9%). About 20% of the responses were collected in hard copies with the help of the Department of Revenue. 8.5% of respondents used an online survey, which the Thai SME Council also supported by asking their members to complete the online survey.

Most of respondents were SMEs, and the majority of these were small enterprises. Although the survey’s focus was SME disaster resilience, having comparative information from large enterprises was informative. Most of the large enterprises were suppliers of either Isuzu Motors (Thailand) or Toyota.

Although most respondents came from Bangkok (the capital province), efforts were made to represent SMEs across the country, and the survey had respondents from every region of the country – Bangkok metropolitan area, Central, East, West, Northeast, South, and North regions (albeit only one from the North region).

Figure A1  Geographic distribution of respondents according to region

<table>
<thead>
<tr>
<th>Region</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>Bangkok (Capital)</td>
<td>33.89%</td>
</tr>
<tr>
<td>South</td>
<td>0.96%</td>
</tr>
<tr>
<td>Central</td>
<td>18.51%</td>
</tr>
<tr>
<td>West</td>
<td>17.31%</td>
</tr>
<tr>
<td>East</td>
<td>18.27%</td>
</tr>
<tr>
<td>Northwest</td>
<td>10.2%</td>
</tr>
<tr>
<td>North</td>
<td>0.24%</td>
</tr>
</tbody>
</table>
Figure A2 shows the number of the respondents by industrial sector. Most SME respondents came from the sectors of manufacturing, wholesale and retail trade, automotive, food service activities, agriculture, forestry, and fisheries respectively. For the large enterprises, 66 out of 78 respondents came from automotive sector.
This publication is an output of the regional project “Strengthening the Disaster Resilience of Small and Medium Enterprises in Asia”. The overall objective of the project is to build disaster-resilient capacities in SMEs in Indonesia, the Philippines, Thailand and Viet Nam by undertaking the following activities: 1) Identifying actions to strengthen resilience of SMEs; 2) Providing technical assistance in strengthening resilience to selected SMEs on a demand-driven basis; 3) Supporting governments in strengthening the enabling environment that promotes risk sensitive and informed investments by SMEs; 4) Facilitating knowledge sharing; 5) Up-scaling, leveraging and formalizing business resilience tools, platforms and initiatives.

**National Partners**

**Indonesia**
- Ministry of Cooperatives and SMEs (MoCSME)
- Indonesian National Board for Disaster Management (BNPB)

**Philippines**
- Department of Trade and Industry (DTI)
- National Disaster Risk Reduction and Management Council (NDRRMC)

**Thailand**
- Office of Small and Medium Enterprises Promotion (OSMEP)
- Department of Disaster Prevention and Mitigation (DDPM)

**Viet Nam**
- The Ministry of Planning and Investment (MPI)
- The Disaster Management Center (DMC)