

Background Paper prepared for the Global Assessment Report on  
Disaster Risk Reduction 2013

**Small Businesses: Impact of Disasters  
and Building Resilience.**

Analysing the vulnerability of Micro, Small, and Medium  
Enterprises to natural hazards and their capacity to act as  
drivers of community recovery.



**United Nations Development  
Programme (UNDP)  
Crisis Prevention and Recovery**



*Empowered lives.  
Resilient nations.*

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Enterprises to natural hazards and their capacity to act as  
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**United Nations Development Programme (UNDP)**

**Crisis Prevention and Recovery**

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## List of Acronyms

BA	Business Association
BCP	Business Continuity Plan
BCPL	Business Continuity Planning
CARMEN	Community Resource Centers for House Repairs
CCI	Chamber of Commerce and Industry (Japan)
CSR	Corporate Social Responsibility
DRM	Disaster Risk Management
DRR	Disaster Risk Reduction
FEMA	Federal Emergency Management Agency (US)
FOREC	Fondo para la Reconstrucción Social y Económica del Eje Cafetero (Colombia)
GAR	Global Assessment Report on Disaster Risk Reduction
GDP	Gross Domestic Product
GEJE	Great East Japan Earthquake
GIZ	German Technical Cooperation
IFC	International Finance Corporation
ILO	International Labour Organisation
IPU	Industry Promotion Unit (Japan)
MFI	Microfinance Institution
MG-NREGS	Mahatma Gandhi National Rural Employment Guarantee Scheme
MSME	Micro, Small and Medium Enterprise
NGO	Non-Governmental Organization
NRM	Natural Resource Management
OECD	Organisation for Economic Co-operation and Development
PPP	Public-Private Partnership
SMRJ	Organization for Small & Medium Enterprises and Regional Innovation Japan
TAFREN	Task Force for Rebuilding the Nation (Sri Lanka)
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNISDR	United Nations International Strategy for Disaster Reduction
WB	World Bank

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## Executive Summary

The impact of disasters on Micro, Small and Medium Enterprises (MSMEs) and the consequences this impact has on the economic and social recovery of the affected communities is one of the least explored areas in disaster risk. This gap hinders the understanding of the way community resilience can be achieved, including the restoration of the social and economic fabrics after disasters.

This study finds that MSMEs are disproportionately affected by disasters, compared to bigger firms with access to a broader set of coping strategies. However, the study also finds that MSMEs have an inherent flexibility due to the lower levels of capital needed to operate and looser work relations (especially in the case of informal MSMEs), which could be exploited after disasters to support a faster and more equitable recovery of the local community. The role of MSMEs in disaster recovery thus depends on their own ability to withstand disasters and having the right incentives in place for them to actively participate in livelihood recovery.

The study suggests that resilience of MSMEs should start by tackling the socio-economic drivers of risk in the pre-disaster stage, and should be further built by the provision of swift and adequate support to MSMEs shortly after disasters. Through better understanding of the impact of disasters on MSMEs, the study concludes that MSMEs' vulnerability to natural hazards can be reversed by promoting enabling pre- and post-disaster environments for MSMEs to use entrepreneurship as a driver of local economic and social recovery.

### *MSMEs and Disasters*

MSMEs contribute to the well-being and the livelihoods system of their community by providing and demanding employment, goods and services. These are needed even more in times of crises, in order to restore the economic fabric of disaster-affected communities. MSMEs also support the creation of social capital in communities, which is a crucial element in restoring the social fabric ruptured by disasters. With local businesses reopening and providing spaces for social bonding, MSMEs can contribute to motivating a relocated population to return home, as well as helping to attract new investment in recovering areas. A strong MSMEs sector also promotes a country's resilience to shocks by broadening and diversifying the domestic economy. By reducing the dependency on few large firms or specific sectors, MSMEs protect a broad base of the labor force from sector-specific shocks and fluctuations in international markets (Dalberg, 2011).

MSMEs are considered to be more vulnerable to natural hazards than larger firms, given the more limited range of risk-management mechanisms they can access. Furthermore, MSMEs in developing countries have additional characteristics that can exacerbate their vulnerability such as informality, which: keeps them out of the reach of government Disaster Risk Management (DRM) programmes and other DRM strategies (e.g. insurance); constrains the ability of MSMEs to diversify their supply and customer base; and implies a lack of compliance with norms and regulations that can increase disaster risk for them and for their employees (e.g. operations in informal settlements, lack of social protection for their employees). Women and young workers tend to be overrepresented in the informal economy (ILO, 2002; Perry et al., 2007), increasing their vulnerability compared to other groups.

Evidence shows that the majority of MSMEs are worse off after disasters. Loss of assets, supplies, customers and staff can compromise livelihood strategies of MSMEs owners. Having fewer coping strategies make it difficult for MSMEs to handle the consequences of disasters, compared to larger firms. Evidence on MSMEs' failure after disasters is limited and varies widely from context to context, though the impacts of disasters on the financial viability of MSMEs point at increasing vulnerability after the event, and decreasing ability to cope with shocks.

Despite the panorama of high vulnerability and low coping capacity, evidence shows that the trend can be reversed by helping MSMEs access rapid post-disaster assistance and network

support. Fewer assets and employees translate into simple production/operating systems that can be swiftly reinstated with appropriate support. From this perspective, even greater flexibility could be expected from informal MSMEs, particularly the self-employed, if provided with swift and adequate support.

### *Impact of Disasters on MSMEs*

MSMEs are affected differently by disasters. These differences are determined by the type of hazard, risk exposure or context-specific vulnerabilities (exogenous variables), as well as from the characteristics of MSMEs, which increase or decrease vulnerability to natural hazards (endogenous variables). Analysing the differential impact of disasters on MSMEs can shed light on what form adequate support to MSMEs might take.

Exogenous variables such as the type of risk exposure determine the level of damage (which can be catastrophic in the case of intensive risk) and the potential for adaptation and better coping (recurrent extensive risk). Disruptions such as physical damage can cause severe financial stress, while lack of basic service provision can compromise swift reopening and exacerbate medium- and long-term disruptions such as population dislocation. The latter can severely hinder MSMEs operations due to a reduction in staff supply and customer base. Lastly, the legal and regulatory frameworks can influence financial and spatial vulnerabilities, particularly so for informal MSMEs operating in unsafe premises and out of the reach of DRM programmes and tools (e.g. insurance).

Endogenous variables can help explain individual business shocks on MSMEs belonging to the same context, exposed to the same level and type of risk, and facing similar disruptions. For instance, evidence shows that MSMEs in different industries can be affected differently by disasters. Despite heavy initial disruptions, MSMEs in the retail sector, particularly informal entrepreneurs, can recover faster compared to those in other sectors and serve as a buffer during times of crisis. MSMEs engaged in manufacture can lose critical assets and staff, which can generate long closure periods and compromise business continuity. After a short-term collapse, MSMEs in tourism tend to bounce back unless recovery strategies for the sector exclude them on the basis of value-chain upgrade or resettlement policies (informal entrepreneurs are particularly at risk). The construction sector can temporarily benefit from reconstruction efforts though projects usually involve large, unaffected construction firms. Lastly, environment-dependent MSMEs can be considered one of the worse off sectors, given the severe disruption disasters pose to the availability of natural resources and the time it takes for ecosystems to recover.

Other endogenous variables that make a difference in terms of impact of disasters on MSMEs include business size, level of informality, location, previous experience of business owners with disasters, pre-disaster business performance, and ownership of premises. Evidence is inconclusive in relation to variables such as age of the firm or gender of firm owners, though if gender-biased vulnerability is present in a society, it is likely to be found among MSMEs.

Most small businesses, whether formal or informal, operating in developed or developing countries, tend to rely on personal savings and networks to cope with disasters. In the case of developed countries where special recovery funds and insurance are widely available and accessed, MSMEs tend to prioritize or complement formal coping mechanisms with individual informal ones. In developing countries, informal coping strategies are often not chosen but imposed by the absence and/or insufficiency of formal mechanisms that guarantee business owners' own survival, as well as that of their business.

## *Post-Disaster Response and Recovery Support*

Achieving effective post-disaster recovery is often influenced by actions taken immediately after disaster; this is particularly so in the case of MSMEs, whose business continuity is threatened by prolonged closure periods and population dislocation. However, post-disaster response and recovery usually has a stronger focus on infrastructure restoration and other elements of household recovery than on economic resilience, leaving business continuity and livelihood restoration as marginal programme components.

Effective post-disaster recovery involving MSMEs as engines of local socio-economic recovery requires public investment to focus on the right mix of 'hard' infrastructure restoration and 'soft' socio-economic policies. Adequate 'hard' policies can include restoration of basic services that can enable MSMEs to continue operations while preventing population dislocation. Housing should be seen as an essential component of livelihood recovery, determining and even serving as primary input (e.g. home-based MSMEs) of productive processes (Pribadi, 2005). Hence, emergency response involving relocation can include temporary operating locations such as those accommodating displaced households (Zhang et al., 2004). During the recovery phase, unconnected housing and livelihood recovery programmes that can negatively affect the restoration of MSME operations should be avoided.

Large-scale projects are the most efficient way of restoring damaged infrastructure but they are likely to exclude local businesses and workers if not carefully designed. Labor-intensive infrastructure projects that explicitly prioritize local contracting can better serve the recovery of MSMEs by involving them directly in recovery processes and stimulating local-level employment and production, while minimizing the redistributive effect of disasters in favor of larger (usually outside) businesses (Lyons et al., 2010).

'Soft' livelihood recovery programmes can include emergency employment, cash and in-kind aid, and microfinance. 'Cash-for-Work' and other emergency support programmes can be useful safety nets to help communities restore the necessary basic infrastructure, local demand, and personal capital needed for MSMEs to operate. Grants can be a more direct way of providing MSMEs with the necessary capital for business continuity and, when given promptly after disasters, can be more effective than emergency employment in supporting the recovery of MSMEs. However, cash is effective as long as markets function; hence the importance of well-designed in-kind support programmes that facilitate MSME access to productive inputs when markets are heavily disrupted by disasters (e.g. MSMEs in manufacture exposed to intensive risk). If designed well, microcredit programmes linked to sustainable income-generating activities can be an option to support the transition between disaster response and medium-term economic recovery.

Central and local governments' roles can facilitate recovery strategies for MSMEs. Financial, technical and political support roles could be better allocated to central-level institutions that generally have greater capacity and decision-making power than disaster-affected local governments (UN, 2011). The main advantages of central governments' coordination of recovery priorities lie in the robust budgets they could leverage from their own or donated resources, and the potential to coordinate different stakeholders (the international community, private sector, regional/local government offices) to simultaneously address the different components of integral post-disaster recovery. Central governments also have the role of ensuring that the business environment, if not totally stable, remains predictable for MSMEs and other members of the community, allowing optimal decision making with regard to the recovery processes (Chamlee-Right and Storr, 2008).

By building on pre-disaster partnership and knowledge, local-level institutions can mobilize adequate response to affected MSMEs and minimize disruptions in their operations. Local governments are also better placed to identify the role MSMEs can play in disaster response. Practical areas for local governments to make a difference in the recovery of MSMEs are the

provision of alternative workspaces (e.g. as part of the temporary resettlement programmes), and the coordination of debris removal and other activities that need local labor and that can facilitate the return of the affected population (De Ruiter, 2011). Local governments also have the potential to effectively engage in longer-term planning processes with post-disaster communities and build on pre-disaster partnerships to ensure local MSMEs are part of new development strategies.

Other stakeholders such as development partners, non-governmental organizations (NGOs) and business associations (BAs) are instrumental in helping governments after disasters. Donors can help governments finance response, recovery and reconstruction strategies. However, this support can have mixed effects in the recovery of MSMEs due to the favoring of large infrastructure projects and the upgrade of certain industries (tourism is a recurrent example), both of which can translate into the exclusion of local MSMEs. NGOs' traditional focus on 'soft' socio-economic initiatives concentrating on livelihood recovery, as opposed to major infrastructure projects has been found to complement donor-funded 'hard' recovery programmes (Regnier et al., 2008). NGOs are well placed to support government efforts in transitioning from emergency response to long-term economic and social recovery by establishing links between different stakeholders. NGOs can also support MSME recovery to the extent that they provide the necessary technical and financial inputs for MSMEs to resume operations and avoid replacing private sector activities with aid. NGOs should also complement government efforts rather than replace them. BAs can ensure that disaster response meets the needs of MSMEs thanks to their matchless private sector knowledge and can facilitate the intervention of bigger firms in the framework of Corporate Social Responsibility (CSR).

### *Policy Approaches*

Livelihood strategies in the post-disaster stage appear to face two main issues: they can be relatively ignored by recovery programmes or they can be addressed in a way that does not support local community recovery. In both cases, the potential for MSMEs to be drivers of local socio-economic recovery is undermined. These issues are intimately related to pre-disaster conditions of disaster-affected areas. Poor and vulnerable communities that have been ignored by public policy are likely to see their livelihood restoration as a marginal component of disaster recovery. Large-scale economic recovery projects can equally ignore local livelihood strategies and bring external initiatives with little or negative impact to communities.

Therefore, resilience of MSMEs should start by tackling socio-economic drivers of risk in pre-disaster stage. This can be done through ensuring an adequate investment climate for MSMEs to thrive and build resilience to shocks, and through interventions that can support resilience building more directly.

Ensuring an adequate investment climate requires policy makers to be aware of the importance and role that MSMEs have in local economic dynamics, which can facilitate the design of relocation and recovery programmes that support livelihood recovery. Legal and regulatory frameworks that effectively address issues such as insecurity of tenure, informality, land use planning and building codes, can in turn encourage MSMEs' investments in DRM and market diversification. Direct interventions for building resilience of MSMEs before disasters can draw on the support of BAs and community groups to design and communicate DRM strategies, as well as help MSMEs be less dependent on local markets by diversifying their supply and customer base. Having social protection systems in place can help decrease the possibility of individual shocks, while having in place systems that can provide swift support after disasters.

Enterprise recovery programmes that respond to context-specific needs of different industries, through cash in-kind and technical support, can help reverse the 'inherent' vulnerability of MSMEs to disasters by maximizing the flexibility that fewer assets and employees give to MSMEs compared to larger firms. Microfinance products tailored to the needs of MSMEs can ensure that recovery is effective and sustainable.

## Introduction

There has been much written about the impact of disasters – on individual households and the broader macroeconomic climate – but how disasters affect MSMEs is one of the least explored areas in disaster risk reduction (DRR). Research has looked at disaster recovery and resilience from the perspective of affected households and individuals (Zhang, 2004) and the broader macroeconomic impact, often with mixed results and little discussion on the institutional dimension that builds resilient economies. Questions remain over the effects of disasters on particular sectors and about how businesses, particularly those in developing countries, are resilient or vulnerable to natural hazards. Studies focusing on the role of the private sector in DRM have not sufficiently incorporated the role of MSMEs in reducing, creating and coping with disaster risk.

Limited evidence from the perspective of MSMEs has left a gap in understanding the way community resilience can be achieved, including how social and economic fabrics can be restored after disasters. Resilience of livelihoods is intimately related to the resilience of MSMEs and their ability to promote a healthy local economy after disasters (ProVention Consortium, 2009). Yet often reconstruction and other recovery models fail to translate potential private sector stimulus into economic gains for the broader community. A crucial piece of the analysis of community recovery appears to lie within MSMEs' response to disaster.

MSMEs are more vulnerable to natural hazards than bigger firms due to the fact that they: tend to operate in sub-optimal locations; are smaller and financially weaker; have a more limited, usually local market; tend to implement less DRR measures and be more excluded from recovery programmes (Zhang et al., 2004). Many risk reduction strategies and recovery tools, such as disaster insurance and post-disaster recovery loans, are often not designed to cater for the needs of MSMEs, particularly informal ones.

In developing countries, informality is usually at the center of the relationship between MSMEs and disaster risk, making this relationship far from straightforward. On the one hand, non-compliance with regulatory frameworks (such as land management), the use of informal labor relations, and low levels of official engagement, can increase vulnerability, not only of MSMEs, but also of the wider community. On the other hand, such informality could also bring a beneficial flexibility to MSME operations – one that could help them to be resilient within fast-changing environments.

This study finds that MSMEs are disproportionately affected by disasters, compared to bigger firms with access to a broader set of coping strategies. However, this study also finds that MSMEs have an inherent flexibility due to the lower levels of capital needed to operate and looser work relations (especially in the case of informal MSMEs), which could be positively exploited after disasters to support a faster and more equitable recovery of the local community. The role of MSMEs in disaster recovery thus depends on their own ability to withstand disasters and the way in which the right incentives are in place for them to actively participate in recovery efforts.

This study suggests that resilience of MSMEs to disasters should start by tackling the socio-economic drivers of risk in the pre-disaster stage. This should further be sustained by the provision of swift and adequate support to MSMEs immediately after disasters. Through a better understanding of the impact of disasters on MSMEs, the study identifies possible pre-conditions, options and policies for both governments and MSMEs, allowing MSMEs to act as agents of DRR and recovery within their community. The study concludes that MSMEs' vulnerability to natural hazards can be reversed by promoting enabling pre- and post-disaster environments and by harnessing small businesses as a driver of local economic and social recovery.

This study will help policy makers understand the importance of incorporating livelihood recovery strategies in post-disaster recovery, with MSMEs as key drivers of economic and social

revitalization. It also aims to build knowledge among policy makers and private sector actors on potential tools and approaches to stakeholder involvement that can inform not only recovery strategies but also DRR initiatives involving MSMEs.

The study will start by analysing the relationship between key elements such as MSME, Informality and Disaster Risk. The second chapter will discuss the impact of disasters on MSMEs, analysing the exogenous and endogenous variables that account for differential impacts, as well as coping strategies of MSMEs in post-disaster situations. Disaster recovery strategies and tools, as well as the roles of different stakeholders will be explored in chapter three. The fourth chapter will discuss policy approaches that can build on private efforts and/or fill the gaps needed to promote disaster resilience among MSMEs.

## Chapter 1: Why MSMEs and Disasters?

Resilience of livelihoods is intimately related to the resilience of MSMEs and their ability to promote a healthy local economy after disasters (ProVention Consortium, 2009). This makes their recovery after disasters crucial for broader economic recovery (Battisti and Deakins 2012). An extreme example is Myanmar where low-income households have been targeted by development assistance following tropical cyclone Nargis in 2008, but MSMEs such as rice mills have not. Hence, the MSMEs were not able to help their local economies absorb shocks from natural hazards (GAR, 2009) as they themselves were compromised following the disaster.

MSMEs contribute to the well-being and livelihoods of their community by providing and requiring employment, goods, and services. In times of crises this is even more of a necessity to restore the economic fabric of disaster-affected communities. MSMEs are therefore an essential component of DRR strategies thanks to their role in mitigating the impact of disasters in the broader community and encouraging its recovery.

MSMEs also support the creation of social capital in communities, which is a crucial element of restoring the social fabric ruptured by the disaster. With local businesses reopening and providing spaces for social bonding, MSMEs can contribute to motivating relocated population to return home, as well as helping to attract new investment in recovering areas.

A strong MSMEs sector promotes a country's resilience to shocks by broadening and diversifying the domestic economy. By reducing the dependency on few large firms or specific sectors, MSMEs protect a broad base of the labor force from sector-specific shocks and fluctuations in international markets (Dalberg, 2011).

The close relationship between MSMEs and their communities through employment and local economic dynamism is particularly important for livelihood recovery of vulnerable communities. In the United States, MSMEs are revitalizing agents of depressed neighborhoods – neighborhoods usually found to be more vulnerable to disaster risk and having difficulties in returning to normalcy after disasters – through the provision of local employment and local government revenue generation (Zhang et al 2004). After the Indian-Ocean tsunami, efforts were made by NGOs in Sri Lanka to restore local economies depending on tourism through MSMEs recovery, with particular difficulties in the case of informal MSMEs (see Box 1).

### **Box 1. Restoring Tourism in Arugam Bay, Sri Lanka, after the Indian Ocean Tsunami**

The small community of Arugam Bay suffered greatly due to the Indian-Ocean tsunami (2004). More than 200 people were killed, 500 houses were destroyed and the local economy, based on tourism and fishing, was devastated by the destruction of the fishing fleet and beach-front hotels, shops and restaurants. Damage to MSMEs was regarded as very severe and support to the sector needed to be a central component of the recovery strategy in the area, not only due to their importance in the local economy but also because of the character and identity that small businesses gave to the overall tourism experience in Arugam Bay.

Reconstruction and business support were addressed as separate stages of MSME recovery in Arugam Bay. The work of NGOs was critical in supporting entrepreneurs to assess their operational needs once infrastructure was reconstructed, and to get the right support to ensure business recovery. These needs were not only targeted to address immediate needs but were also used as an opportunity to improve business operations and positioning in the future. Better communication strategies and services designed for a wider tourist clientele were part of post-disaster recovery plans of MSMEs.

Capacity among MSMEs was built for this new business phase, as well as that of business associations serving the tourism sector. A large hotel and travel agency, famous in the community for its sense of CSR, provided training in skills such as cooking, food and beverage service, housekeeping and management. The Arugam Bay Tourism Association was also revamped to include a wider range of MSMEs in the tourism industry, define strategic objectives, and provide practical support to its members in areas such as accessing finance.

Extra motivation for the tourism industry came in the form of an international surf competition, which, due to take place soon after the tsunami occurred, was not cancelled, thus signaling confidence in the sector and helping to revive the local economy.

However, motivation did not come from all parties. Centralized post-disaster decision-making processes by the Task Force for Rebuilding the Nation (TAFREN) failed to sufficiently include local communities in their own recovery processes. Aiming to guide the reconstruction process in such a way that decreased disaster risk, TAFREN's declared Coastal Buffer Zone prevented legal reconstruction of houses and businesses previously located in coastal areas. This declaration was made with no community consultation and left the local community with few alternatives for livelihood recovery.

In the same fashion, the reconstruction plan for Arugam Bay prepared by the centralized Urban Development Authority aimed to radically upgrade the tourism industry, focusing on large investments for an upmarket, boutique tourism destination. As most affected MSMEs were informal, the central government did not recognize them as legitimate pre-disaster businesses. They were left with no livelihoods in what was known locally as the 'second tsunami', with demolition notices sent to those undertaking reconstruction efforts in disputed areas. NGOs helped catalyze community priorities before central authorities and most entrepreneurs were able to restore their livelihoods, though with insecure land tenure.

Source: Robinson and Jarvey, 2008, <http://onlinelibrary.wiley.com/doi/10.1111/j.1467-7717.2008.01058.x/pdf>, accessed 2/28/2013, Klein, 2007.

MSMEs are considered to be more vulnerable to disasters than larger firms, given the more limited range of risk-management mechanisms they can access. Larger firms can generally: afford to be part of insurance markets; access larger financial and political capital; are generally better prepared with contingency locations, capital, and plans to assure business continuity; and tend to have newer and better equipped facilities. In contrast, MSMEs typically lack the technological and financial resources that allow employees to work remotely (Vitez, 2009), thus hampering swift restoration of business operations in alternative locations.

Understanding the relationship between MSMEs and disasters, and identifying potential sources of vulnerability, is a first step in building resilience of MSMEs. Countries like Mexico have acknowledged the need to assess such vulnerabilities of MSMEs (Box 2).

**Box 2: Mexico MSMEs' vulnerability framework**

Chiapas' Ministry of Economy became involved with DRM with renewed vigor following Hurricane Matthew and the heavy rains in 2010 that caused significant economic losses throughout the state, including severely affected MSMEs in Tuxtla Gutierrez and Yajalón. With UNDP support, the Ministry identified the following MSMEs vulnerabilities: poor knowledge and access regarding marketing channels; perceived complexity regarding management and administration procedures; poor communication infrastructure; high or unfair competition; unavailability of trained human resources; insecurity; little or no access to financing; little or no access to services; low job security; low-quality training options available.

Source: UNDP, 2013b

MSMEs in many developing countries have additional characteristics that exacerbate their vulnerability and that of their community to disaster risk. These characteristics are mainly associated with informality and how it hampers MSMEs. Informality keeps MSMEs out of the reach of government DRM programmes and other DRM strategies (e.g. insurance); it constrains the ability of MSMEs to diversify their supply and customer base and implies a lack of compliance with norms and regulations that can increase disaster risk for them and for their employees (e.g. operations in informal settlements, lack of social protection for their employees).

Given the fact that informality shapes entrepreneurial activity in less-developed countries, it is important to understand the vulnerabilities associated with informality as well as the potential opportunities that a flexible approach to entrepreneurship can offer disaster recovery. Policies and programmes designed to support business recovery after disasters need to explicitly address the needs of this informal sector (Galbraith and Stiles, 2006). Given the increasing importance of MSMEs in economic dynamics in developing countries and the growing exposure of these economies to disaster risk, understanding ways in which disaster resilience can be built in the MSME sector is crucial from a development perspective. Disasters pose a disproportionate burden on developing countries' economies, which have MSMEs as key sources of employment and livelihood strategies. Reducing the vulnerability of MSMEs to natural hazards can support resilience building in developing countries.

***Micro, Small and Medium Enterprises***

There is no worldwide standard definition of MSMEs. References to employment, annual turnover and size of balance sheet can be used but the most common indication remains the number of employees. The International Labour Organization (ILO), the International Finance Corporation (IFC) and the Eurostat's Structural Business Statistics identify commonly used definitions: micro enterprises can have 1–10 employees; small enterprises have 10–50 employees, while a medium-size enterprise employs 50–200 employees, or even up to 250 (Faundez, 2008; Kushnir et al., 2010). From the IFC sample, 83 percent of all MSMEs were micro enterprises<sup>1</sup>, evidencing the importance of very small businesses worldwide.

MSMEs are an important part of developing countries' economies and will be even more so in the future. It seems that while the density of MSMEs (MSMEs per 1,000 people) is higher in developed countries (the median of OECD countries was 40 MSMEs per 1,000 vs. 5 MSMEs per 1,000 people in Sub-Saharan Africa) this trend may change in the future as the number of MSMEs per 1,000 in low-income countries grows three times faster than in high-income countries – 6 percent per year vs. 2 percent per year (Kushnir et al., 2010).

<sup>1</sup> The definition of micro enterprises excludes micro firms with no employees apart from the owner; that is the self-employed.

MSMEs play an invaluable role in employment generation in both developed and developing countries. There are 125 million formal MSMEs in the world, 71.2 percent of which are in developing countries (Kushnir et al., 2010), employing a third of the world population, and peaking at 80 percent in China. They account for a third of employment in low-income countries and at least half of total employment in developed countries (Kushnir et al., 2010; UNDP 2010, UNDP 2004 cites MSMEs employing 65 percent of the labor force in OECD countries). Other estimates (IFC, 2012) suggest that MSMEs account for more than 50 percent of employment and about 90 percent of businesses worldwide<sup>2</sup>. The ILO (2012) highlights the importance of MSMEs in generating 70 percent of jobs globally.

Another indicator of MSMEs' role in national economies is their contribution to national output. In high-income countries, MSMEs contribute between 51 and 55 percent of Gross Domestic Product (GDP) (UNCTAD, 2005; Dalberg, 2011). In developing countries where the informal economy plays an important role in manufacturing and employment, formal MSMEs contribute on average 16 percent of GDP while the informal economy contributes 47 percent (Dalberg, 2011). This dual economy is particularly accentuated in countries with high informality like Bangladesh and Pakistan, where MSMEs' contribution to employment reaches 80 percent, but contribution to GDP is as low as 5 and 15 percent respectively (UNCTAD, 2005).

Beyond their importance in national economies, MSMEs play a fundamental role in community dynamics. Local economies often depend on MSMEs as sources of jobs, goods and services that would not have reached them otherwise. MSMEs tend to be more flexible in their operations, particularly informal enterprises. Labor relations are typically based on trust rather than accountability mechanisms (Murta et. al, 2012), providing a very different framework for job creation – one that directly supports community networks. As a result, MSMEs can have a stronger interaction with communities than bigger firms, and are key players in local development.

MSMEs have an important role in employment provision of local communities, not only in terms of number of jobs but in the type of employees they hire. MSMEs are likely to engage less 'employable' workers with lower levels of education, social protection, and often belonging to particularly vulnerable groups. Even in developed countries, MSMEs were identified as providing employment to those who are less likely to find a job in a bigger company, such as older and previously unemployed workers (De Kok, et al., 2011).

Apart from the importance of MSMEs in the local community, MSMEs can also affect economic performance at a national level in contexts with high productivity of MSMEs. In the United States, where MSMEs employ half of the work force and contribute as much to the GDP and job creation, there is a strong correlation between small business activity (e.g. recruitment and price changes) and macroeconomic indicators such as GDP growth, inflation rate, and unemployment rate (Dunkelberg et al., 2004; NEC, 2012). Consequently, shocks affecting MSMEs could spread to other sectors of the economy at a wider scale than purely local-level MSME operations.

## Informality

Informality is at the heart of private sector dynamics in many developing countries, yet it is still unclear what exactly it is and what effects it has on MSME development. The ILO (2002) acknowledges that informal activities have the common characteristic of being unrecognized and unprotected under legal and regulatory frameworks of the given country. Perry et al. (2007) identify informality and its actors from three different perspectives:

- Labor: workers with sub-standard labor protection and the self-employed avoiding taxes;
- Micro-firm: those not registered or engaged with government and civil society institutions, and;

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<sup>2</sup> The IFC database includes information on informal MSMEs for 16 countries, which can help explain higher shares of employment and number of MSMEs worldwide.

- Firm: firms and individuals avoiding taxation and regulations and/or declaring less workers or revenue to avoid taxes and social protection contributions.

Informality thus encompasses a complex set of behaviors from individuals or firms that determine the level of compliance with norms and regulations, the level of participation in markets (commercial but also those related to social protection and risk management), and their ultimate level of engagement with state policies and programmes.

The relationship between formality and informality is not black and white. Some firms may decide to comply with some norms and not with others (e.g. comply with taxation but not with social protection for their workers) according to the flexibility of enforcement and the perceived benefit of engaging in formal practices (e.g. perhaps only registered firms can be part of BAs).

Informal operations or work relations are more common among small and young firms, particularly in developing countries (Perry et al., 2007, Kushnir et al., 2010). In Latin America, informal workers account for, on average, 60 percent of the region's labor force, while the informal or 'shadow' economy represents, on average, 40 percent of the region's GDP<sup>3</sup> (Box 3). In Argentina and Mexico, between 40 and 45 percent of informal and self-employed workers are found in microenterprises of less than five employees.

### **Box 3: Informality in Mexico**

The informal sector in Mexico constitutes a highly heterogeneous group. Most informal economic activities are carried out in homes, in rudimentary premises or appropriated urban infrastructure – streets, plazas, squares, transport stations – offering to sell their products of labor, or distribute goods and services to consumers. Some are street vendors in makeshift stalls; many are self-employed and accompanied by other (unpaid) family members (often minors). Others supplement their earnings with casual, unprotected wage labor. Considering vulnerability, those involved in informal employment generally come from a background of low education attainment, are poorly paid and have no access to credit or social security.

During the third quarter of 2012, 29.3 million employees in Mexico were engaged in economic activities that make up the informal sector. This is around 60 percent of the total (48 million) classed as economically active by the ILO, a proportion that contributes to keeping artificially low levels of unemployment in Mexico at around 2 percent. The informal economy is estimated to contribute to at least 32 percent of Mexico's GDP.

Source: UNDP, 2013b

The relationship between informality and vulnerability lies in the way that informal workers – employees or owners of informal enterprises – typically lack basic social protection as well as voice and representation in civic life. The ILO (2002) describes the informal economy as having a 'decent work deficit', with low productivity and remuneration, absence of work rights and social protection, and low representation.

Women and young workers are identified as those more likely to be part of the informal economy (ILO, 2002). Informal salaried work is an accepted entry point for young Latin-American workers to the labor market and there is a positive correlation between being female and opening an un-registered business (Perry et al., 2007).

<sup>3</sup> Definition of informal worker as per the 'productive definition' that include unskilled, self-employed, salaried worker in a small private firm and zero-income workers. 'Shadow economy' is defined as market-based legal production of goods and services deliberately concealed from public authorities to avoid taxes, contributions to social security, labor regulations or administrative procedures. These and other definitions of informality can be found in the ILO statistical website for the analysis of informality ([http://laborsta.ilo.org/informal\\_economy\\_E.html](http://laborsta.ilo.org/informal_economy_E.html)) as well as in Perry et al. 2007, pg. 29.

Beyond the labor market, informality has also shaped the built environment of developing countries. Non-compliance with land management regulations or building codes translates into informal settlements in areas prone to floods and landslides and higher probability of casualties in the event of earthquakes (Box 4).

#### **Box 4. Informality and Disaster Risk: Vulnerable Cities**

The world now has more urban than rural dwellers, with 50.5 percent of people living in cities since 2010; and the trend will continue, with an expected 60 percent of people living in cities by 2050. These new urban dwellers will come from developing countries, particularly within Africa and Asia. Monitoring their urbanization is impossible for nearly 60 percent of local authorities, who admit they cannot properly track growth processes. Informal development will therefore continue to be the driving force of urban growth.

Informal urbanization has serious implications for disaster risk. It is estimated that 32.7 percent of the world population live in the slums that continue to grow in urban centers putting more people at risk. Hazardous land, lack of adequate infrastructure, overcrowding, and lack of basic services all contribute to increased vulnerability. In addition, disaster preparedness is markedly less effective in communities where tenancies are insecure and dwellers often refuse evacuation in case they will not be allowed back.

Informal MSMEs are particularly at risk given their tendency to locate on inadequate or sub-optimal land. Informal microenterprises, particularly female-owned, tend to be home-based, in informal settlements. Disaster risk associated to informal dwelling thus extends to home-based MSMEs, doubling the disaster for families whose homes and sources of livelihood are affected. Other microenterprises such as street vendors do not have a fixed location, limiting their access to basic services including shelter, and reducing the likelihood of their accessing risk mitigation or transfer mechanisms (e.g. infrastructure upgrading and insurance).

Sources: UN-Habitat (2011), UN DESA (2011), GIZ (2006)

### **Disasters and Disaster Risk Reduction**

Disasters have caused 3.3 million deaths between 1970 and 2010 (World Bank (WB) and UN, 2010), with \$2.3 trillion in damages. Although the death toll of disasters is decreasing if adjusted for population growth, people are ever more exposed to natural hazards. Population density has risen in urban centers, particularly in developing countries where urban dwellers exposed to tropical cyclones and earthquakes have been estimated to double between 2000 and 2050.

The Center for Research on the Epidemiology of Disaster EM-DAT database shows a sharp increase in people affected by disasters since the 1960s, reaching 200 million in the 1990s and growing. This trend is likely to continue given increasing urbanization, environmental degradation, and higher occurrence and intensity of natural hazards caused by climate change.

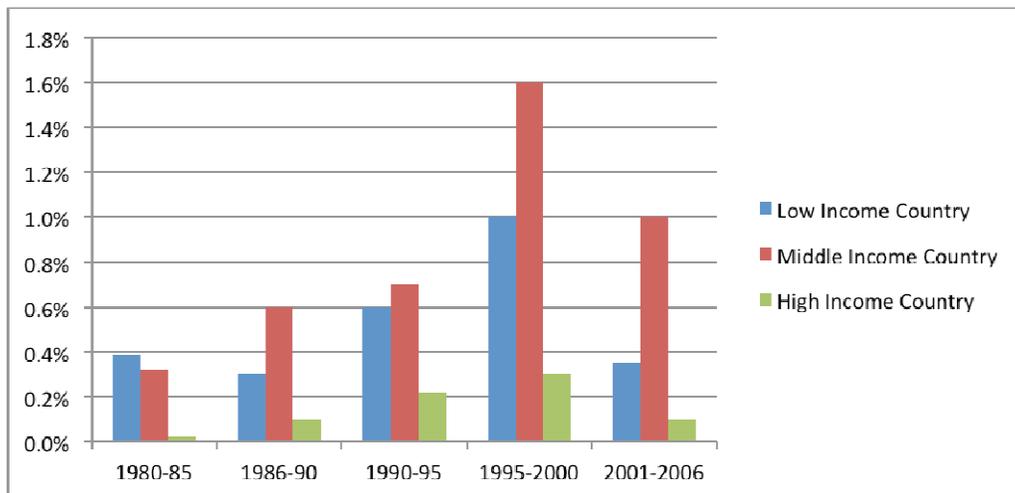
Economic losses are difficult to quantify, especially their long-term impact on economic activity. Disaster losses are usually grouped into *direct losses* (typically quantifying economic losses of disasters), *indirect losses* (loss of production due to disruption of inputs, services, demand and productivity caused by illnesses and death) and *secondary effects*, which extend to the overall performance of the economy in the short and medium terms (incidence of poverty, indebtedness or permanent restructuring of productive processes; UNDP, 2004).

Ghesquiere and Mahul (2010) calculate that the yearly average direct economic losses of disasters increased almost tenfold between 1979 and 2008, fluctuating between \$70 billion and \$90 billion

per year in the past decade, due mainly to increased population and assets exposed to natural hazards. UNDP (2004) shows a similar trend for the period 1950–1999<sup>4</sup>.

Both studies also highlight that although developed countries accounted for a higher proportion of losses, developing countries are hit the hardest relative to their own GDP. For instance, direct losses due to Hurricane Katrina were estimated at \$125 billion, which represents only 1.1 percent of the US GDP while the 2010 earthquake in Haiti was worth \$8 billion in direct losses, which accounts for 114 percent of Haiti’s GDP. Low- and middle-income countries are more vulnerable to natural hazards compared to developed countries as the economic consequences of disasters are more significant in relation to the size of their economies (Figure 1). Developing countries can be considered more exposed to disaster risk, given relatively less investments in disaster risk reduction and higher impact of disaster-related losses on their economies. Such general lack of risk consideration associated to some development trends as rapid urbanization, inappropriate land planning and use of natural resources, or lack of appropriate building codes, is increasing these countries’ vulnerability to natural hazards and their disruptive effects on their development path.

**Figure 1. Average Annual Direct Losses from Disasters as a Share of GDP**



Source: Ghesquiere and Mahul (2010)

The burden disasters pose to developing countries and the inadequate or non-existent consideration of DRR in development strategies is particularly worrying in the case of extensive risks. Extensive disasters (moderate floods, landslides, droughts) usually receive less institutional attention and the damages they cause to the economic and social fabric of communities often go unrecorded. However, these events are strongly associated with the poorest and most vulnerable rural areas, peri-urban areas and informal settlements with particular vulnerabilities to disaster risk (GAR 2011).

The following chapter will analyse the impact of disasters on MSMEs, taking into account particular vulnerabilities inherent to MSMEs, especially informal ones, as well as exogenous variables that can determine the extent to which disasters compromise the survival and operations of MSMEs.

<sup>4</sup> Although both studies use the CRED EM-DAT database, methodological differences for the estimations (e.g. UNDP 2004 calculates economic loss by decade at \$ of 2002 while Ghesquiere and Mahul (2009) calculate yearly losses in \$ of 2009) make the trends more significant for comparison than absolute values.

## Chapter 2: Impact of Disasters on MSMEs

### Businesses and Disasters

The economic losses of disasters have a profound effect on business recovery. The experience of New Orleans with Hurricane Katrina (August 2005) gives plenty of cautionary evidence about the potential impacts of (intensive) disasters on businesses. By the end of 2006, nearly 7,900 businesses remained closed in southeast Louisiana while New Orleans lost 184,000 jobs during 2005 (Howe, 2011). Exposure to flooding was a major determinant of business survival in three main commercial streets, with 96 percent of businesses with less than six inches of flooding recovering by 2007, while only 37 percent of those with over three feet of flooding did.

Infrastructure damage has been identified as an important source of financial stress for businesses after disasters. It can cause temporary business closure while structural repairs needed to restore operations usually require large amounts of resources. If businesses are uninsured or lack resources for these repairs, business survival is put at risk. Even if operations resume, physical damage has been found to make a difference in business performance of surviving firms as severe damage implies longer closure periods and more resources allotted for repairs, particularly in the case of uninsured firms (Corey and Deitch, 2011). In addition, disruptions after disasters regarding the provision of public services such as electricity, water supply and sewage, fuel (e.g. petrol and natural gas), transportations and telecommunications, can be responsible for businesses closing down (Zhang et al., 2004) and can cause population dislocation.

Many businesses do not reach post-disaster stage. According to the US Institute for Business and Home Safety (1999), more than 43 percent of businesses do not reopen following a disaster and 29 percent close for good within two years<sup>5</sup>. Unfortunately, little is known about those firms that do not survive as the majority of the already limited literature on impact of disasters on businesses focuses on those that made it through.

Retail and wholesale businesses tend to experience greater negative outcomes after disasters, while businesses in the construction sector tend to be better off due to increased demand for their products and services during reconstruction phase. However, outside competition in the latter sectors could offset potential benefits, particularly for smaller businesses that cannot compete with prices and volume of large outside firms whose operations are unaffected by the disaster. Adding to the risks, the end of the potential 'mini-boom' during reconstruction phase usually translates into sales drop for years before stabilizing again (Zhang et al., 2004).

Having an emergency plan makes businesses more likely to engage in preparatory activities and devise ways of staying in touch with employees in case of major disruption. This was found to be a key variable explaining business performance after Hurricane Katrina (Corey and Deitch, 2011). Larger firms are also more likely to have business continuity plans (BCPs), which tend to identify alternative operating locations.

### Impact of disasters on MSMEs

There seems to be consensus in the literature, at least from a theoretical perspective, about the high vulnerability of MSMEs to natural hazards, compared to larger firms. MSMEs' vulnerability can be twofold: firstly, smaller businesses have less financial and technical resources to reduce and cope with risk; secondly, disasters could have a larger impact on MSMEs' performance than other

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<sup>5</sup> Please note these figures are dated and refer to the US context only. The extent to which their accuracy remains valid today is not confirmed – few data have been found on businesses not surviving disasters. For a discussion on the accuracy of statistics on business resilience, please refer to <http://www.continuitycentral.com/feature0660.html> (last accessed on March 1, 2013)

types of crises (e.g. loss of employees) due to the general negative impact of the disaster on communities in which MSMEs operate<sup>6</sup> (Battisti and Deakins, 2012). The latter highlights how MSMEs are more dependent on community recovery for their own business continuity compared to larger firms (Box 7).

There is however, evidence of some contexts in which MSMEs have been quicker in recovery compared to their larger counterparts including MSMEs in Japan in the automobile industry (UNDP, 2013a), and MSMEs in Yogyakarta after the 2006 earthquake (Resosudarmo et al., 2008). These examples suggest that an 'inherent' vulnerability can be effectively addressed during recovery. In both cases, quick post-disaster assistance and network support seem to have maximized the benefits and flexibility that MSMEs have compared to larger firms. Fewer assets and employees translated into simple production/operating systems that were swiftly re-established with the appropriate support. From this perspective, even greater flexibility could be expected from informal MSMEs, particularly the self-employed, if provided with rapid and adequate support.

#### **Box 5. The Great East Japan Earthquake (GEJE), 2011**

The GEJE of March 11, 2011 refers to the gigantic earthquake (M9.0) and tsunami that struck the north-east (Tohoku) region of Japan leaving 19,000 dead or missing, and the subsequent accidents related to the Fukushima Daiichi Nuclear Plant.

In the Tohoku prefecture alone the GEJE affected more than 120,000 MSMEs located in areas affected by the tsunami and nuclear crisis, representing 99.9 percent of all enterprises in the area (micro and small enterprises are nearly 90 percent of all enterprises located in the disaster zone). More than 38,000 MSMEs were severely affected by the tsunami (severe disruptions caused by physical damage and inability to buy inputs and/or sell products), and a further 7,000 were located in the nuclear evacuation zone.

The costs associated with the disaster on businesses in the tourism, manufacture and commerce sectors of the three most severely affected prefectures (Iwate, Miyagi and Fukushima) were estimated to be more than \$15 billion. As of Jan 2012, 65.6 percent of enterprises in tsunami-affected areas have continued or resumed business, while enterprises in Fukushima face more chronic consequences due to the additional nuclear accident. According to a survey on April 2011, 57.6 percent of the enterprises across Japan expected a decline in demand, while 19.9 percent were confident of an increase. Among sectors that expected a decline, retail was the highest at 66.8 percent, followed by agriculture, forestry and fishery at 63.9 percent and services at 62.4 percent (TDB Report 101, 2011).

Profiled in the same report were 131 enterprises that went bankrupt as of the end May 2011 (two months on from the disaster), 2.5 times more than after the Hanshin Awaji Earthquake of 1995. Among the reasons for bankruptcy are: decline in sales due to disaster-affected partners (29 percent), effect on the mood of restraint consumption (26.7 percent), and supply frustrations due to affected partners (13 percent). This indicates that the majority of bankruptcy occurred immediately after the disaster and was due to indirect causes.

Source: UNDP 2013a

The Christchurch earthquake in New Zealand (2011) highlighted the resilience of the MSME sector as well as the main issues for them in overcoming the post-disaster stage. Negative impacts of the earthquake on current and future operations were felt by 40 percent of MSMEs in the Canterbury region, and included loss of employees, supplies and premises, as well as from higher insurance premiums and labor-related costs (Battisti and Deakins, 2012). The impact of the 2011 Great East Japan Earthquake (GEJE) on MSMEs is summarized in Box 5.

One of the most devastating disasters in recent years, the Pakistan floods in 2010, brought long-lasting consequences to affected MSMEs. As revealed in a survey conducted in nine severely

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<sup>6</sup> Disasters are a typical covariate shock, meaning that several households/firms suffer the same shock. Covariate shocks can hamper individual efforts to recover due to broader affectation. However, idiosyncratic components –individual shocks- determine individual impacts, even in the case of covariate shocks.

affected provinces, 75.4 percent of surviving MSMEs were worse off (e.g. running at a loss) than before the floods, while only 7.7 percent maintained the same level (Asgary et al., 2012).

A similar pattern of worse post-disaster performance can be observed in MSMEs affected by hurricanes Katrina and Rita (2005) – in 2007, 60 percent of small businesses were earning less revenue than before the events (Turner et al., 2007 as cited in Howe 2011). The disruption of MSMEs' operations and performance has been regarded as a contributor to the challenges to economic recovery in New Orleans post-disaster.

Evidence from the Indian-ocean tsunami show the disruption it brought to the livelihoods of small business in the different countries affected. In Aceh, Indonesia, 25 percent of the population lost their livelihoods, a third of them being MSMEs owners (Lyons et al., 2010). In communities such as the one in Arugam Bay, Sri Lanka, the damage to industries such as tourism was particularly severe, especially affecting local and informal MSMEs (see Box 1).

A survey covering 345 MSMEs in two disaster-prone cities in Mexico's Yucatan peninsula shed light on some of the impacts of tropical cyclones on MSMEs (Hernandez Montes de Oca, 2011). Of the MSMEs in the sample, 95.1 percent had experienced at least one tropical cyclone, with 45.7 percent finding the experience damaging for their business. After the most extreme weather event they have encountered (usually a category 5 hurricane) the majority of the surveyed MSMEs (73.3 percent) closed their business for less than three days and less than 5 percent closed for more than two weeks. Of those recovering, 69.6 percent reported doing so (fully) in less than one month; only 3.2 percent took more than a year to fully recover or never fully recovered. More than half of MSMEs in the survey suffered a decline in sales after the disaster. Direct damages reported were usually related to lack of cash flow and disruption of service/product delivery. However the majority of the damages were indirect, such as disruptions related to power cuts, lack of customers and inaccessibility of roads.

Evidence on MSMEs failure after disasters is limited and varies widely from context to context. A survey showed that 9 percent of Pakistani MSMEs did not reopen after the 2010 floods (Asgary et al., 2012). Other estimates suggest that a much higher fraction of small businesses, nearly 40 percent, do not reopen after disasters (FEMA, 2012). Others go as far as to say that the lack of a BCP (see Box 6) leads to business failure within three years after disasters for 75 percent of affected MSMEs (Blythe, 2002, as quoted in Saleem et al., 2008). Although the lack of BCP can be an important factor, it seems hardly the best or most important one in determining business survival in the medium term.

#### **Box 6. Business Continuity Planning (BCPL)**

BCPL in the context of DRR encompasses the assessment of potential upstream (supplier) and downstream (customer) losses caused by disaster, in order to look for appropriate mitigation strategies. Its main goal is to minimize business losses in the event of hazards, although it entails a deep analysis into the role of a business within a productive chain or sector. BCPL and the subsequent BCP can be useful tools for disaster resilience building, particularly if the analysis and planning is done within a sector or chain rather than in isolation.

Firms undertaking BCP will need to cover four main steps:

- Perform a business impact analysis that identifies potential disruptions and subsequent consequences for business continuity
- Identify adequate recovery strategies and resources to implement them
- Develop a BCP that includes roles, responsibilities and contact details of firm members, suppliers and customers; as well as results of the business impact analysis and the potential recovery strategies
- Train employees, test, update and improve the BCP

Source: (IBHS, 1999), European Commission (2007); US Federal Emergency Management Agency (FEMA) <http://www.ready.gov/business/implementation/continuity>, accessed 11/30/2012

the impact of disasters would need to account not only for MSMEs not reopening after disasters, but would also need to follow MSMEs performance long after the event to account for indirect and secondary effects that may cause business failure. In addition, factors affecting not only business performance but also recovery of the broader community (see Box 7) will ultimately determine MSMEs survival after disasters.

**Box 7. Population dislocation after Hurricane Katrina (2005) and its implications for the local economy**

Two years after the devastations of Hurricane Katrina, The Great New Orleans Regions still had a population of 200,000 less than pre-Katrina levels. Some small-business owners reported coming back a week after the disaster, and on seeing the scale of destruction, returned to their alternative operative location for good.

People were displaced for lengthy periods owing to the severity of the disaster, but also the recovery process. Basic infrastructure and services were severely damaged and restoring them took between two and eight weeks. Government response was perceived as uncoordinated and inappropriate, obstructing efforts by preventing private recovery efforts (e.g. keeping owners away from their businesses for safety reasons) and overcomplicating loan procedures through excessive documentation etc. When applications finally went through, loan disbursement was too slow to make an impact on business recovery.

Customer and staff losses were the two main explanatory factors of business performance after Hurricane Katrina. Still today, population has not restored to pre-Katrina levels and it continues to be the single most important factor affecting business performance in the area.

Source: Corey and Deitch (2011); HP and Score (2007)

What can be generally concluded from the evidence is that the majority of surviving MSMEs do not perform as well after disasters as they did before. Disasters compromise MSMEs' operations through both supply and demand constraints due to issues such as population dislocation and transport disruptions. Disasters also pose financial burdens related to physical reconstruction and business continuity (e.g. loss of inventory). All these factors suggest an increased vulnerability of MSMEs in post-disaster situations.

It is interesting to note that there is also an important proportion of MSMEs that report being better off after disasters, such as in the case of the Christchurch earthquake in New Zealand (30 percent reported positive effects after the event related to productivity increase) and of some of the tropical cyclones annually affecting Mexico (37.7 percent of the respondents said that worst cyclone they had experienced was actually beneficial for the business). Evidence on differential impact by sectors is not available for these cases but this could be an important explanatory factor behind the new patterns in business performance, with sectors such as manufacturing being hit the hardest after disasters and construction-related businesses benefitting from the reconstruction processes.

In addition to redistribution across sectors, redistributions within sectors can also be a potential factor explaining better MSME performance after disasters. Increased market share of the most resilient firms at the expense of closed or ill-performing businesses was a factor explaining positive performance of retail and wholesale businesses after Hurricane Katrina (Corey and Deitch, 2011).

## Variables affecting the impact of disasters on MSMEs

MSMEs are affected differently by disasters. These differences can come from the type of hazard, risk exposure or context-specific vulnerabilities (exogenous variables), as well as from MSMEs' characteristics that increase or decrease vulnerability to disaster risk (endogenous variables).

**Table 1. Summary of Variables Determining the Impact of Disasters on MSMEs**

Type of Variable	Variable	Characteristics	Differential Impact on MSME
Exogenous	Type of Risk Exposure	Intensive Risk  Extensive Risk	<ul style="list-style-type: none"> <li>Catastrophic physical damage;</li> <li>Severe disruption of service provision can slow down business recovery;</li> <li>Availability of external aid;</li> <li>Attracts less attention, consequences are less known, no/reduced external aid;</li> <li>Impacts poorer and more vulnerable MSMEs (e.g. informal)</li> <li>Exacerbates individual vulnerabilities of owner/employees;</li> <li>Potential adaptation to recurrent disasters; if not, decreasing risk-taking abilities due to continuous risk exposure.</li> </ul>
	Type of Disruption	Physical Damage Basic Service Provision Communications Population Dislocation	<ul style="list-style-type: none"> <li>Increased financial stress;</li> <li>Can slow down business recovery based on level of dependency on each service;</li> <li>Transport and accessibility issues slow down business recovery;</li> <li>Slows down recovery due to disruption on supply and customer bases.</li> </ul>
	Context-Specific Vulnerabilities	Legal and Regulatory Frameworks Economic context	<ul style="list-style-type: none"> <li>Determine access to safe premises;</li> <li>Influence pre-disaster rights and inform post-disaster recovery ;</li> <li>The investment climate determines financial vulnerability of MSMEs, and influences DRM practices and the establishment of market linkages;</li> <li>Macroeconomic structures determine the transmission of shocks from and to the MSMEs sector.</li> </ul>
Endogenous variables	Economic Sector/Type of industry	Commerce (retail and wholesale)  Manufacture  Tourism  Construction  Environment-dependent Industries	<ul style="list-style-type: none"> <li>Severely disrupted due to dependency on local clientele with potential high failure rate;</li> <li>Resilient formal MSMEs can benefit greatly from limited competition;</li> <li>Informal entrepreneurs adapt quickly to new market conditions thus showing resilience and providing a buffer for workers in less robust sectors;</li> <li>One of the least resilient sectors severely disrupted by labor shortages, loss of productive assets and low demand for non-essential goods;</li> <li>Short-term collapse after disasters;</li> <li>Potential resilience if recovery is inclusive; if not, high risk of exacerbating socio-economic disparities against MSMEs;</li> <li>Likely to benefit in the short term with potential recession once reconstruction is finished;</li> <li>Informal MSMEs may not be able to benefit from reconstruction processes due to competition from big, unaffected companies;</li> <li>Severe disruption due to physical damage of natural assets;</li> <li>Slow recovery process which compromises short and medium term livelihood strategies.</li> </ul>
	Informality	Size	<ul style="list-style-type: none"> <li>Small firms are financially and spatially more vulnerable to disaster risk;</li> </ul>

		Voice and inclusiveness Strategic Planning DRM tools Spatial risks Labor relations	<ul style="list-style-type: none"> <li>• Fewer fixed assets may provide flexibility for operation re-establishment with early support;</li> <li>• Less contact with government and private sector initiatives influence market diversification and DRM programmes;</li> <li>• MSMEs with strategic planning processes tend to have a better approach to DRM;</li> <li>• Informal MSMEs cannot access traditional tools such as insurance;</li> <li>• Informal, home-based MSMEs may locate in hazardous land;</li> <li>• Unprotected workers of informal MSMEs are at risk of increased vulnerability after disasters;</li> <li>• Informal and flexible labor relations can support income generation and community recovery.</li> </ul>
	Location	Informal settlements Other risk-prone areas Outside disaster-affected areas	<ul style="list-style-type: none"> <li>• Risk-prone workplaces;</li> <li>• MSMEs in tourism (e.g. beachfronts) are more exposed;</li> <li>• MSMEs in densely populated risk-prone areas are more exposed although clusters can help MSMEs recover by facilitating network support;</li> <li>• High-risk perception can affect MSMEs outside the affected area through less demand and/or higher insurance premiums.</li> </ul>
	Age and experience with disaster risk	Firm age Prior experience with disaster risk	<ul style="list-style-type: none"> <li>• Inconclusive evidence;</li> <li>• Can positively influence the implementation of adaptive measures, and disaster risk planning, though awareness of tools such as BCP is low among MSMEs;</li> <li>• Underestimation of risks can persist after disasters.</li> </ul>
	Pre-disaster Business Performance	Disasters can reinforce previous performance patterns	<ul style="list-style-type: none"> <li>• Financially weak MSMEs and those with less diversified markets may be hit the hardest by disasters.</li> </ul>
	Type of Ownership	Premise ownership Female ownership	<ul style="list-style-type: none"> <li>• Security of tenure encourages investment in DRM</li> <li>• Renters can have additional financial pressure after disasters;</li> <li>• Gender-related vulnerabilities can increase financial weaknesses of female-owned MSMEs;</li> <li>• Female managerial styles can support adequate DRM practices;</li> <li>• Women tend to be overrepresented in informal entrepreneurship and employment.</li> </ul>

## Exogenous variables

### *Type of risk exposure*

Intensive risk, associated with severe disasters in highly populated areas, increases the likelihood of disaster impacting MSMEs through catastrophic physical damage. In addition, intensive risk can cause major disruption in basic service provision, compromising business continuity and recovery. Given the lack of access to DRM strategies, MSMEs are likely to be highly vulnerable to disasters associated with intensive risk.

Most of the scarce evidence of impact of disasters on MSMEs comes from severe disasters associated with intensive risk. This is not surprising, as major catastrophes attract attention of national governments and the international community, as well as of academia interested in understanding impacts on particular groups or economic sectors. The severity of these disasters and the massive media coverage of their devastation raise expectations about post-disaster response of central and local authorities, while giving visibility to those private sector actors and development partners supporting response efforts.

The high profile of exposure to intensive risk implies that these disasters are more likely to attract substantial disaster aid compared to disasters associated with extensive risk. Although businesses in general, and MSMEs in particular, usually prefer to resort to informal coping mechanisms for business recovery, post-disaster financial support is expected to be more widely available after severe disasters.

The limited focus on intensive risk present in most of the evidence leaves an important gap in understanding the effects of extensive risk on MSMEs. Extensive risk attracts less attention from authorities and researchers, increasing the likelihood of its impacts passing unnoticed and unaddressed. Without official intervention, MSMEs will be on their own facing the consequences of exposure to extensive risk.

The association of extensive risk with particularly poor and vulnerable communities has implications for potential impacts on MSMEs. Informal MSMEs may be more at risk with less access to formal risk-management tools (e.g. business insurance) along with higher vulnerability due to sub-optimal or hazardous location. Informal workers with no health insurance may be more vulnerable to small recurrent disasters in which no emergency health care is provided. This could translate into individual health shocks and increase of individual vulnerabilities.

MSMEs exposed to extensive risk may need to adapt to recurrent events that compromise their operations. Failure to do so could mean repeated exposure to extensive risk, leaving MSMEs even more vulnerable to disaster risk, affecting their growth potential and limiting their risk-taking abilities while depleting already limited assets and capital. If adaptation takes place, the degree to which these adaptive strategies build resilience to extensive risk will depend on the adequacy of the measures in light of the level of risk.

Evidence from Mexican MSMEs exposed to recurrent tropical cyclones sheds light on the potential adaptive mechanisms exposure to extensive risk can help develop. In this case, adaptive mechanisms tend to be more 'coping' than truly 'adaptive' measures<sup>7</sup>. For instance, more than 80 percent of the MSMEs in the survey monitor early warning systems, store equipment or turn off gas and electricity when risk of disaster increases. However, only 32 percent implement BCP and less than 12 percent have hurricane/flood insurance or have performed an emergency drill for these types of events. Not surprisingly, medium-sized enterprises are more likely to have adopted adaptive measures while micro enterprises are the least likely (Hernandez Montes de Oca, 2011).

### *Type of disruption*

Physical damage and disruption of basic service provision are important factors determining business continuity after disasters. Physical damage is a source of financial stress for MSMEs after disasters. The loss of inventory, machinery, equipment and business records, as well as the costs of repairing damaged infrastructure, compromise business continuity in the short term, while decreasing resources for business growth and investment in the medium term. For instance, following the 2010 floods, about 20 percent of Pakistani MSMEs experienced total loss of their business facilities and had to restart their businesses from scratch (Asgary et al., 2012). Catastrophic physical damage has been the most important factor explaining the difficult recovery process of the fishing industry in Japan after the GEJE (Box 8; UNDP, 2013a).

Disruption of basic service provision affects MSME operations based on their level of dependency on these services. Electricity disruptions after disasters have been identified as serious threats to MSME operations in the United States (Corey and Deitch, 2011) while they may be less relevant in developing countries where businesses have needed to cope with regular electricity shortages in pre-disaster times. For instance, one third of Pakistani MSMEs do not depend on electricity to

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<sup>7</sup> The author defines 'coping' as those more reactive measures to deal with hazard consequences while adaptive measures are implemented in a proactive way to be better prepared and usually involve more time, efforts, expertise and resources to implement (Hernandez Montes de Oca, 2011).

operate and disruption in the service was not a serious threat to business continuity (Asgary et al., 2012). Although water supply was only essential for 12 percent of MSMEs surveyed, service interruption did affect business recovery proportionately; the more MSMEs depended on water, the more time it took them to recover.

Transportation and accessibility issues have an important role in the level of impact suffered by MSMEs after disasters. In Pakistan, many MSMEs that were not directly affected by the 2010 floods remained closed for as long as 35 weeks due to transportation disruptions, while more than half of affected MSMEs had sales losses due to the inaccessibility of their businesses (Asgary et al., 2012).

Evacuations and population dislocation have major implications for MSMEs as owners and workers tend to live in the same area, or even the same premises, as their business (Murta et al., 2012). Population issues can slow down the recovery process by keeping business owners away from their businesses, increasing losses (home and business) and disrupting the supply and customer base of MSMEs, which is generally (and usually exclusively) local. For instance 88.6 percent of MSME owners in Pakistan were evacuated after the floods, which increased the time it took for businesses to reopen (Asgary et al., 2012). Population issues can also have long-term effects for business recovery (see Box 7).

#### *Context-specific vulnerabilities: legal, regulatory and economic frameworks*

Social and institutional environments affect pre-disaster DRM decisions of MSMEs, as well as shape MSMEs recovery after disasters (Asgary et al., 2012). The location, type of business and employment relations, as well as the opportunities and challenges the economic context can bring after disasters, are all part of country contexts determined by institutional framework.

Legal and regulatory frameworks are at the center of MSMEs' decisions on location and business operations. The degree of access to adequate and safe business premises before and after disasters, as well as the incentives and mechanisms to ensure adequate risk management of employees are heavily influenced by prevailing norms and regulations. For instance, many informal entrepreneurs in Sri Lanka suffered disproportionately from the Indian-ocean tsunami given their location on beachfronts. But after the tsunami, they suffered again from not having the right to a safe location due to their pre-disaster informal status (see Box 2).

In the case of extensive risk, recovery is framed almost entirely within a pre-disaster context. Post-disaster response is usually lower than in the case of intensive risk due to relatively low intensity and a lower profile of the disaster, which usually affects the poorest segments of the population. For instance, informal settlements in developing countries at high risk of floods and landslides – where many informal MSMEs and women-owned home-based enterprises are located – keep growing despite being affected by recurrent disasters (Sanderson, 2000; Dodman et al., 2009). Urban development policies in these contexts have failed to effectively tackle socio-economic sources of determining exposure to extensive risk, impacting the livelihoods of communities in which informal MSMEs tend to operate.

In terms of the economic context, a potential factor affecting MSME resilience to shocks and their pre-disaster performance (see next section on endogenous variables) is the investment climate. There is higher MSMEs density in economies where the informal sector is smaller and where investment climate variables are more favorable<sup>8</sup> (Kushnir et al., 2010). A positive investment climate is also associated with higher economic growth and with a thriving MSMEs sector (Beck and Demirguc, 2004). Dynamic economies with a healthy investment climate thus provide a context where MSMEs experience less financial stress and are more likely to have good pre-disaster performance.

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<sup>8</sup> Investment climate variables in this case referred to costs of starting and closing a business, and corruption.

Investment climate variables can directly affect risk management practices of MSMEs. A healthy business environment that subjects MSMEs to fewer complications due to red tape, corruption and widespread insecurity has been found to promote the implementation of adaptive measures that effectively decrease disaster risk among Mexican MSMEs (Hernandez Montes de Oca, 2011). The opposite is also true; complications due to investment climate variables were associated with less effective coping mechanisms by Mexican MSMEs. An element of incentives to durable investments in risk management could be behind this pattern.

A healthy investment climate can also facilitate the establishment of market linkages, which have been found to increase the resilience of businesses to disasters (The WB and The UN, 2010). The presence of strong and diversified linkages within and across sectors in pre-disaster phases reduces market isolation and dependency thus building resilience for post-disaster phases. In the case of Sri Lanka after the Indian-ocean tsunami, carrying out an international surf competition was an important way of using market linkages to reactivate economic activity in a tourism-dependent community (see Box 1).

The macroeconomic structure in developing countries can be a factor contributing to medium-term impact of disasters on MSMEs. Agriculture-based economies encompass strong linkages from agriculture to non-agriculture sectors (and vice versa to a lesser extent), particularly industry. This will make the industrial sector more vulnerable to the negative effects of disasters in agriculture. Economic growth in developing countries is also more sensitive to the impacts of disasters, which can affect not only MSMEs but all private sector activities and household wellbeing in the medium-term (Loayza et al., 2009).

In the case of some developed countries with high productivity of MSMEs, shocks affecting the MSME sector such as disasters could negatively affect economic performance at a national level. Slower economic activity in the MSME sector could hurt growth, inflation and employment at a national scale (Dunkelberg et al., 2004; NEC, 2012).

## Endogenous variables

Endogenous variables determine the way in which disaster risk translates into real individual business shocks – why one MSME collapses when another recovers after disaster, despite belonging to the same context, being exposed to the same level and type of risk, and facing similar business disruptions.

### *Economic sector/type of industry<sup>9</sup>*

Businesses in different sectors can be affected differently by disasters and their subsequent disruptions. Due to their more local supply and client base, MSMEs in sectors that depend more heavily on local resources, as well as those less likely to be involved in reconstruction efforts, face a greater threat from disasters.

Retail and wholesale sectors have been referred to in literature – mostly US-authored – as the sectors most vulnerable to disaster risk (as discussed in Corey and Deitch, 2011). Their local client base makes them more susceptible to disruptions such as population dislocation and lower demand in the affected areas. Evidence from Katrina showed that although businesses in these sectors were performing better in the medium term, this was likely due to high business failure in the post-disaster phase (Corey and Deitch, 2011). In the case of MSMEs in this sector, particularly the informal ones that have a very limited local clientele, it is likely that disasters will heavily disrupt their operations.

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<sup>9</sup> Economic sector refers to broad economic categories (e.g. manufacturing) while industries refer to specific activities within economic sectors (e.g. automobile industry).

Despite the heavy disruption, the ability of informal entrepreneurs in the retail sector to adapt to new market conditions has been identified as a sign of resilience. Informal retailers swiftly identified new niches of business activity after the Yogyakarta earthquake (2006) and seasonal floods in East Jakarta (Pribadi, 2005). Informal commerce serves also as a buffer during crisis, providing income-generating opportunities to migrants and business owners in distress, being an essential actor of post-disaster recovery (Pribadi, 2005).

Evidence from Pakistan and Indonesia points to the manufacturing sector as one of the least resilient after disasters. After the Pakistan floods in 2010, MSMEs in the production and manufacturing sector saw the greatest closures with a 30.2 percent rate (Asgary et al., 2012). Increased vulnerability of the manufacturing sector compared to other sectors such as commerce was also found in Indonesia after the Yogyakarta earthquake (2006) and the seasonal floods in East Jakarta (Pribadi, 2005). Production processes were impacted by an evacuated workforce, the loss of essential equipment, and an inability to replace equipment shortly after the disaster.

The GEJE also shows how manufacturing production and shipments fell sharply due mainly to the damage caused to plants and equipment and the subsequent disruption of supply chains (UNDP, 2013a). The effects were felt particularly acutely in the automobile industry due to the prevalence of just-in-time practices, which meant halts in production depleted the already low inventories of suppliers located in the affected areas. Subsequently, however, repairs to damaged facilities, production at alternative facilities, and the opening up of additional operating sites enabled supply chains to restore production to pre-disaster levels four months after the disaster. Some MSMEs in the automobile and other manufacturing industries were more resilient than their bigger peers thanks to swift financial assistance and network support (UNDP, 2013a).

MSMEs in the tourism sector can be hit hard due to a short-term collapse of the industry. However, the perception of the affected area as unsafe does not usually last long, allowing the sector to be categorized as resilient to disaster risk (Robinson and Jarvie, 2008). For instance, tourism recovered much quicker than other sectors (e.g. fisheries) after Hurricane Katrina, though pre-disaster levels have not been fully reached (De Ruiter, 2011).

Despite the sector's relative resilience, MSMEs in tourism may be at a disadvantaged position if recovery strategies unintentionally or deliberately exclude them. In the case of the Arugam Bay community in Sri Lanka, a deliberate effort to upgrade tourism in the area after the Indian-ocean Tsunami put at risk the livelihood of informal entrepreneurs (see Box 1).

The construction sector is usually regarded as a likely winner after disasters, with increased demand for its products and related services during reconstruction phase. However, local MSMEs may not automatically benefit from increased demand, as competition from unaffected companies can upset potential positive outcomes. Bigger companies can also be in a better position to benefit from reconstruction contracts if models do not explicitly account for local MSME participation as a recovery strategy.

Agribusinesses and other environment-dependent industries are identified as highly vulnerable to natural hazards. Natural resource management (NRM) schemes can be severely disrupted by events that damage the natural and built environments and affect the availability of and access to resources. Forestry was affected in Germany in 1999 after a heavy storm cut off 30 million m<sup>3</sup> of timber, causing MSMEs in the sector to witness a decrease in the price of timber and see their income fall sharply in the three years following the disaster (Hartebrodt, 2004). Entrepreneurs in the coir industry in Tamil Nadu, India, estimated they needed three years to replant and grow coconut trees (and hence to recover their livelihoods) devastated by the Indian-ocean tsunami (UNDP, 2013c).

The fishing industry was highly affected by Hurricane Katrina, the GEJE and the Indian-Ocean tsunami. Katrina decreased the supply of fish, shrimp, oysters and crab in the affected area,

impacting the industry at a national level (De Ruiter 2011). While two thirds of businesses in manufacturing and non-manufacturing industries (excluding seafood) in Japan had resumed operations by early 2012 after the GEJE, less than half of those in the seafood industry had been able to do so (UNDP, 2013a). More than 120,000 fishers in Tamil Nadu were stripped of their livelihoods after the Indian-Ocean tsunami (UNDP, 2013c).

Physical damage to infrastructure and equipment is high among MSMEs in the fishing and seafood processing industry due to proximity to coastal areas, which can generally be more vulnerable. Fishermen lost boats, nets, piers and other essential structures and inputs after Hurricane Katrina and the Indian-ocean tsunami. With sophisticated seafood processing hubs in coastal zones, the Japanese seafood industry has been disproportionately affected compared to other industries (Box 8).

**Box 8. Damage to the marine industry complex in the coastal areas after the GEJE**

Iwate and Miyagi are known for its saw tooth (ria) coastline, with a world-class fishing ground owing to the Kurile and Kuroshio currents that bring a vast range of fish. Aqua-farming is also well known, which has developed at the inner part of the bay. Making the most of such favorable environments, the coastal cities in this region have developed offshore fishery and aqua-farming industries, which have attracted fish markets, cold storage facilities, marine products processing factories, small shipyards, iron works factories and electricity and ship radio businesses. These have formed an efficient industrial complex in each city on the coast.

In the Tsunami of March 2011, almost all the facilities of the coastal industrial complexes suffered catastrophic damage. Marine products' processing factories and iron works factories, among others, lost most of their physical structures and machinery, and had to restart from zero, or below zero. Without cold storage and marine processing factories fishermen cannot sell their fish, and boats and facilities cannot be maintained unless iron works and ship radio businesses are restored. With these close linkages, recovery of local MSMEs in the fishery-related industry is not possible without the recovery of the entire industrial complex.

Source: (UNDP, 2013a)

Environmental disasters such as pollution perpetuate the disruption in the fishing and other food-related industries by contaminating recovering stocks and creating a negative perception among customers. The 2010 oil spill in the Gulf of Mexico, nearly five years after Hurricane Katrina, slowed even further the recovery of the fishing industry in Katrina-affected areas (De Reuter, 2011) while the Fukushima nuclear disaster generated additional relocation of coastal communities and disruptions in food processing deemed to have been contaminated (UNDP, 2013a).

*Informal vs. formal MSMEs: size and more*

Business size has been identified as a factor influencing vulnerability to hazards. There is additional pressure for small MSMEs as they will have a tendency to be located in less resistant buildings; have a smaller, local, customer base; do not usually implement hazard management programmes; lack financial resources for recovery; and may be excluded from government recovery programmes (Zhang et al., 2004; Montes de Oca, 2011). Evidence from post-Katrina did not find business size an important determinant of business performance after the disaster, although it might have been an important factor determining business survival (Corey and Deitch, 2011; De Ruiter, 2011). The Pakistan floods did show that larger MSMEs (measured by sales) were able to recover faster (Asgary et al., 2012).

Early support to MSMEs in the form of financial aid and supportive networks seems capable of turning around the pattern behind faster recovery of big firms. Evidence from the GEJE found that some large and sophisticated firms were slower at recovery compared to smaller firms in the same

industry due to the complexity of their operations systems (damage to high-technology equipment); yet they recovered surprisingly fast thanks to alternative work locations, using both existing branches and temporary rented locations (UNDP, 2013a). A sample of firms surveyed after the Yogyakarta earthquake (2006) found that financial aid was significant in helping MSMEs recover, with smaller MSMEs recovering faster than big ones as a result of the smaller asset base to be restored (Resosudarmo et al., 2008).

Informal MSMEs are usually smaller, less productive and worse performing than formal firms (Perry et al., 2007), which decreases their possibilities of swift disaster recovery. In addition, they are usually under the radar of planners and government entities, which excludes them from government DRM programmes. After Cyclone Thane in 2012, MSMEs belonging to the government promoted and organized clusters in Tamil Nadu, India, and were more effective in getting their demands heard than informal and unorganized MSMEs (UNDP, 2013c). Isolation (both social and geographical) can decrease the chances of informal MSMEs of becoming aware of disaster risk and how to reduce it, an important determinant of vulnerability.

Formal MSMEs tend to have a more 'professional' approach to their business, which has been found to provide an enabling environment for adequate DRM. Mexican MSMEs having business objectives, mission statements, visions, logos, and other strategic planning processes are more likely to implement adaptive measures rather than passively cope with disaster risk (Hernandez Montes de Oca, 2011).

Insurance is a DRM tool that is usually unavailable to the informal sector. Almost none of Pakistani MSMEs affected by disasters had insurance, having to resort to personal resources and loans to rebuild their business (Asgary et al., 2012).

Many informal MSMEs operate in an informal built environment in developing countries. Lack of compliance with norms and regulations by informal MSMEs means businesses may be located in informal and/or hazardous land. Home-based MSMEs tend to locate in informal settlements with higher vulnerability to natural hazards.

A further marker of vulnerability to natural hazards are poor, pre-disaster working conditions, the use of child labor and/or being part of poorly regulated exploitative industries, conditions usually associated with informal businesses (Sanderson, 2000).

Even in less extreme cases, informal employment practices are inherently putting employees at risk of individual shocks during disasters. Lack of access to health care, pensions, voluntary savings and other risk management mechanisms can exacerbate the consequences of disasters on informal employees by decreasing their coping mechanisms, increasing the likelihood of individual shocks, and ultimately compromising their ability to recover from disasters.

Although informality tends to increase MSMEs' vulnerability to natural hazards, their flexible productive processes mean that they have the potential for resilient informal coping mechanisms. Having fewer fixed assets means that swift changes can be made to operative locations, decreasing disruption. The informal employee relations of MSMEs, tending to rely more on kinship and trust, creates stronger bonds between employer/employee and can provide mutual protection.

Informal MSMEs also enjoy the flexibility of offering employment, informal and temporary, to members of the community in need. For instance, family-run MSMEs can serve as short-term, financial cushions for relatives affected by disasters.

## Location

Location determines the level of risk exposure of MSMEs, whether informal settlements or other type of disaster-prone areas. Nearly 76 percent of surveyed MSMEs in Pakistan reported that the most important factor contributing to flood damages was being located in the flood plains.

For some industries, riskier locations mean greater profit. MSMEs in tourism and fisheries are typically located in coastal areas vulnerable to tropical cyclones and tsunamis while those in retail often locate in historic downtowns with older, less resistant buildings (Howe, 2011). Of those MSMEs located in coastal areas during the GEJE 54 percent suffered catastrophic structural damage and 42 percent were partly destroyed. Damage was less severe, though still considerable, for those MSMEs located at inner-affected land: only 3 percent experienced total loss and 86 percent suffered partial damage (UNDP, 2013a).

Economics is also behind some MSMEs' decisions to stay in areas exposed to recurrent extensive risk. Despite being aware of the danger, MSMEs in East Jakarta affected by seasonal floods find it less costly to take preventive measures (an early warning system) and assume the costs of recovery rather than look for alternative locations (Pribadi, 2005). This decision may be influenced by limited finances, meaning that recurrent costs of repair are more manageable than larger investments in DRR, a behavior also found among Pakistani MSMEs affected by the 2010 floods (Asgary et al., 2012).

MSMEs in densely populated urban areas are particularly vulnerable to intense disaster, whether in a developing or developed country. Rapid urban growth in developing countries has increased the pressure on natural buffer zones (Box 9). Risky conditions of informal settlements exacerbate the risks associated with rapid urbanization through inadequate building practices (see Box 1). In a developed country such as New Zealand, MSMEs located in main urban areas were more likely to have experienced a crisis than their rural peers after the Christchurch earthquake in 2011 (Battisti and Deakins, 2012).

### **Box 9. Urban Growth in Villahermosa (Tabasco, Mexico) and Disaster Risk**

The southern states of Chiapas, Oaxaca, Tabasco, Campeche, Yucatan and Quintana Roo are among the poorest in Mexico. This regional economic disparity is evidenced in lack of trained human capital, technology and innovation, business networks and financing, resulting in limited development of MSMEs, particularly in the very poorest regions.

These states are also prone to the worst effects of hydro-meteorological phenomena, which materialize chiefly in the form of hurricanes and tropical storms every year, roughly between the months of May and September. The cities and towns that populate the coastlines around the Caribbean and Pacific regions bear the brunt of these phenomena. However the interior between the two can also be severely affected by related secondary hazards; torrential downpours that can last for days – generating landslides – and rivers that breach their banks, resulting in severe flooding. Low-lying areas (rural and urban) that have undergone extensive urban growth in recent decades are generally most prone to these types of hazards. Villahermosa, the capital and largest urban centre in the state of Tabasco, is one such zone.

Since the 1970s, urban growth has resulted in city boundaries extending to the low-lying edges of the Rio de la Sierra river system, originally a floodplain, but today very much part of the urban conglomerate. This system hosts approximately 20,000 MSMEs (CEPAL, 2012). The pressure on the Rio de la Sierra system has not been accompanied by adequate planning with regard to hydrological infrastructure. This has resulted in the city's inhabitants enduring severe flood damages every year between 2007 and 2011.

Source: UNDP, 2013b

Despite the way in which risk is concentrated in a dense exposed area, clusters and proximity to urban centers may bring advantages for MSMEs during recovery. In Yogyakarta, findings show

industrial clusters provided MSMEs with additional peer support for recovery, while proximity to Yogyakarta town was positively related to MSME recovery (Resosudarmo 2008; 2011). MSMEs in the automobile industry in Japan also decreased business disruptions thanks to network support (UNDP, 2013a).

Even MSMEs that are not directly located in the disaster-stricken area can suffer negative consequences from a crisis. The entire tourism industry in Sri Lanka suffered from misperception that the whole country had been directly hit by the tsunami and was unsafe for tourism (Robinson and Jarvie, 2008). MSMEs across Japan saw soaring prices and interrupted supply chains shortly after the GEJE, as well as cancellation of hotel reservations and business deals (particularly food-related products) due to a perception of unsafe radiation levels (UNDP, 2013a). After the Christchurch earthquake (New Zealand, 2011), MSMEs outside the affected area reported being charged higher insurance premiums and having lower current and future sales orders, as a consequence of the earthquake (Battisti and Deakins, 2012).

#### *Age of the firm/owner, previous disaster experience and disaster preparedness*

Young firms tend to be more vulnerable to shocks, due to the financial pressures of starting up a business, less market consolidation and higher degrees of informal practices. However, the evidence concerning firm age and vulnerability to natural hazards is inconclusive. For instance, only 25 percent of the Pakistani MSMEs that did not survive the 2010 floods were five years old or younger (Asgary et al., 2012). Firm age was also not an important indicator variable of post-Katrina business performance (Corey and Deitch, 2011).

More than firm age per se, what seems to make a difference in firm resilience is prior experience with disaster risk. In the case of Mexican MSMEs, implementation of adaptive measures is explained by the physical damage suffered in previous disasters: the more MSMEs have lost due to disasters, the more they are likely to implement adaptive measures (Hernandez Montes de Oca, 2011). Past disaster experience is found to positively influence MSME adaptation to flood risk in the UK (Wedawatta, 2012). Lastly, Pakistani MSMEs with prior disaster experience recovered faster from the floods than those without experience (Asgary et al., 2012).

Age of the owner/manager is closely related to disaster experience and to the adoption of better mitigation and preparedness strategies. In the case of the Christchurch earthquake (New Zealand 2011), the age of the owner/manager was among the most important predictors for crisis experience among MSMEs, with younger owners/managers more likely to have experienced a crisis in the last five years (Battisti and Deakins, 2012).

Disaster experience can substantially change an approach to disaster risk in a positive way. Evidence from New Zealand's MSMEs shows that those in the earthquake area have a stronger tendency to adopt proactive postures (e.g. be ready to respond to changing business environment) and to include recovery priorities in their planning processes (e.g. know the resources needed to recover from a crisis) (Battisti and Deakins, 2012).

But disaster's cautions are not always heeded. Underestimation of disaster risk can continue to be a source of vulnerability among MSMEs after a crisis. Low risk perception is found among MSMEs in the UK where 70 percent of those located in high-risk flood areas are not concerned about potential floods and do not implement business continuity planning (BCPL) (Wedawatta, 2012). A similar attitude was found among Pakistani MSMEs, even after the 2010 floods, where many still think their business premise is not unsafe despite evident poor building conditions (Asgary et al., 2012). Less than half of Mexican MSMEs surveyed invest time in planning for extreme weather conditions, while around 80 percent perceive their business as having less or the same level of risk as other businesses (Hernandez Montes de Oca, 2011).

Ignorance of disaster preparedness tools such as BCPs is common among MSMEs. For instance, half of Canada's MSMEs are unprepared for a disaster and unfamiliar with the concept and practice of BCP (Canada NRT, 2012) and less than a third of surveyed Mexican MSMEs exposed to recurrent tropical cyclones has developed a BCP or any other type of risk preparation plan.

Even if aware of BCPs, undertaking the necessary steps to complete one (see Box 6) is a rare practice among MSMEs. A survey covering nearly 11,000 firms conducted in Japan one month after the GEJE revealed that only 6.5 percent of MSMEs had a BCP before the disaster, compared to 21.5 percent of big firms (UNDP, 2013a). There is a substantial difference between big firms and MSMEs regarding awareness on the importance of a BCP: 24 percent of big corporations responded 'not needed in our enterprise' while 35 percent of MSMEs responded the same. However, firms that have made disaster preparedness an important component of business planning found BCPs to effectively contribute to business survival (Box 10). Interestingly, the importance of a BCP seems not only to lie in actually having one, but in the approach to risk preparedness that the process of building a BCP entails. Although a BCP was not a major determinant of post-disaster performance, having an emergency plan made businesses more likely to engage in preparatory activities and devise ways to stay in touch with employees after Hurricane Katrina, with the latter making a big difference in post-disaster business performance (Corey and Deitch, 2011).

#### **Box 10. GEJE: BCPs in Action**

Suzuki Kogyo Co. Ltd in Sendai city, Miyagi prefecture, has 67 employees and is engaged in the collection and transport of industrial waste, recycling, and water purification and provision. The tsunami washed away most machinery, vehicles and other equipment while the incinerator and water processing facilities were buried in sludge and rubble. Despite the overwhelming damages to the business, Suzuki Kogyo was able to recover all its business operations within one month, thanks to the BCP it had begun to draft in 2008. Suzuki Kogyo completed the first version of its BCP in 2009, held in-house training with outside experts, and carried out simulations and drills. As a result, the company was able to smoothly evacuate staff from the processing plant and quickly confirm the safety of all employees, including those who were out of office with customers. Furthermore, the company contacted contractors with satellite phones, as indicated in the BCP, who came to assess the necessary repairs the next day. Thanks to these phones, the company was also able to participate in restoration works for municipalities and customers. The company restored the communication system at headquarters within five days, and resumed all industrial waste collection, cleaning and recycling works approximately one week after the earthquake. All operations were completely restored within a month. While recognizing the effectiveness of the BCP, the company has swiftly started improving the plan based on lessons learned from the disaster.

Similarly, Kokubu Electric Corporation in Tokyo engages in manufacturing, and sales and repairs of electric switchboards for power system in buildings and factories. The company has 214 employees with a production base in Ibaraki prefecture which was damaged by the earthquake. In the absence of the plant manager, the deputy manager took control according to the BCP, and quickly confirmed the safety of all employees leading the evacuation. Responding to the BCP objective of 'preventing customer loss', employees immediately contacted customers and explained the situation asking for their understanding. Kokubu Electric resumed 80 percent of its operations within two weeks of the disaster, without losing its customers. The company has also started reviewing its BCP (METI, 2012).

Source: METI, 2011 as discussed in UNDP, 2013a

#### *Pre-disaster business performance*

Disasters do not always bring about changes in the productive processes of MSMEs. Some authors believe that disasters reinforce prior practice rather than create culture change when it comes to MSME survival and post-disaster recovery (Alesch et al., 2001, and others, as discussed in Hernandez Montes de Oca, 2011). Whether or not this is the case, it is true that disasters add an additional burden to smaller and financially weaker firms, usually MSMEs, compromising their ability to further withstand shocks.

Similarly, MSMEs with strong pre-disaster business performance can be more resilient when recovering from shocks such as disasters. For instance, Pakistani MSMEs with larger sales in pre-disaster phase were able to recover faster from the floods than their less dynamic peers (Asgary et al., 2012).

Businesses serving a broader market base (regional or international) tend to recover faster than those serving only local markets (Zhang et al., 2004). Market diversification is also associated with the implementation of adequate DRM practices among MSMEs in Mexico (Hernandez Montes de Oca, 2011).

### *Type of Ownership*

Owning a premise in which business operates is consistently related in literature to better safety practices and improved access to finance (as discussed in Asgary et al., 2012). In the case of informal MSMEs, insecurity of tenure for those operating in informal settlements is an additional disincentive for having safe premises. In addition, renting a premise for business operations means there is a need for active cash flow or sufficient savings to cover for the lack of it. Hence renters and those operating in premises with insecurity of tenure are considered more vulnerable to disaster risk. The only exception comes from Pakistan where MSMEs renting their premises recovered faster from floods (Asgary et al., 2012).

There is mixed evidence on how the gender of business owners affects vulnerability to natural hazards. Female business owners seem to experience greater financial difficulties, lower rates of profitability and higher rates of business failure compared to male entrepreneurs (Asgary, 2012). In the case of Pakistani MSMEs surveyed after the floods, almost none were female-run, evidencing gender-related constraints to business development before the disaster.

On the other hand, once women are able to establish a business, their approach to risk management can be more adequate than that of men. Female managerial approaches tend to facilitate the implementation of crisis-preparedness measures thus lowering vulnerability to natural hazards in their businesses. After the Christchurch earthquake (New Zealand, 2011), female-headed MSMEs in New Zealand were significantly less likely to have experienced a crisis than their male counterparts (Battisti and Deakins 2012). However, evidence from Mexican MSMEs contradicts findings from New Zealand; male-headed MSMEs tend to have more adaptive responses to disaster risk, while female-headed resort to cheaper coping strategies perhaps as a result of a more precarious financial situation.

The ILO (2002) and the WB (Perry et al., 2007) identify a potential over-representation of women in the informal economy, particularly from the perspective of entrepreneurship. This implies that in contexts where gender-related vulnerability is widespread, it will likely be found among MSMEs. Identifying adequate strategies to address gender-related vulnerabilities among MSME owners and workers can make a difference between the promotion of equal recovery opportunities and the exacerbation of gender-related vulnerability (Box 11).

#### **Box 11. Sri Lanka: Gender Blindness in Post- Crisis Assistance**

The post-2004 tsunami recovery effort in Sri Lanka included private sector development programmes designed to re-establish the livelihoods of the fishing industry. In a programme oversight, gender roles were not adequately identified, resulting in the provision of assistance to male-dominated activities in the fishing industry. Women who took charge of home-based activities within the fishing industry were effectively denied recovery support. The distribution of fishing equipment overwhelmingly benefitted fishermen and increased the imbalance of asset ownership within households.

Source: UNDP, 2011

## Coping strategies of MSMEs in the event of disasters

Most small businesses, whether formal or informal, operating in developed or developing countries, tend to rely on personal savings and networks to finance disaster recovery. In the case of developed countries where special recovery funds and insurance are widely available and accessed, MSMEs tend to prioritize or complement formal coping mechanisms with individual informal ones. MSMEs in the United States have access to disaster recovery funds from entities such as the Small Business Association (SBA) but many chose not to use them in order to avoid additional financial burdens (Zhang et al., 2004) or because bureaucratic processes and timing of disbursements decrease the attractiveness of such resources (Corey and Deitch, 2011). In addition, many MSME owners need to recover personally first before recovering their business, aspect that some business recovery loans do not take into account (De Ruiter, 2011).

Insurance has shortfalls in helping MSMEs' recovery and can pose future additional financial strain. Higher premiums after disasters and potentially devastating consequences that cannot be covered by insurance are two such shortfalls. For instance, MSMEs affected by the Christchurch earthquake (New Zealand, 2011) are less likely to think insurance is enough to safeguard their business if they were closed for three months compared to those in non-affected areas (Battisti and Deakins, 2012).

In the case of MSMEs in developing countries, informal coping strategies are often not chosen but imposed by the absence and/or insufficiency of formal mechanisms that guarantee business owners' own survival, as well as that of their business. Only 6.6 percent of Pakistani entrepreneurs affected by the 2010 floods covered survival needs with government aid, while less than 25 percent did so with assistance from NGOs (Asgary et al., 2012). The majority (37.2 percent) used their personal savings, and 23 percent borrowed money from family, friends or moneylenders in order to cope with income shortage. Half of business owners had to borrow to reopen their businesses, a pattern also identified among Mexican MSMEs (Hernandez Montes de Oca, 2011). Selling assets, looking for temporary jobs and cutting back on consumption were the more radical coping mechanisms of Pakistani MSME owners.

Remittances are an important source of income in developing countries and their role in post-disaster has been paramount to support livelihood recovery. Unaffected by the disaster, remittances can contribute to MSMEs recovery by providing owners the necessary capital for personal and business survival (Savage and Harvey, 2007). Haiti is an example of remittances as post-disaster survival strategy, with many migrants from Port-au-Prince to rural areas being able to start their recovery process thanks to money effectively delivered by the MFI Fonkoze (Luce, 2010). There seems to be room for policy makers to improve MSMEs' coping strategies by: a) promoting a preparedness culture that prompts MSME owners to have contingency savings to recover from disasters; b) providing timely support and minimizing the financial burden of MSMEs accessing recovery loans; and c) creating or improving systematic ways of supporting MSMEs in developing countries in order to avoid exacerbating financial shocks to business owners and their networks. The following chapter will analyse how some of these options have been implemented in post-disaster as response and recovery programmes, will identify potential recovery tools, and will highlight common roles of stakeholders involved in MSMEs post-disaster recovery.

## Chapter 3: Post-Disaster Response and Recovery Support

### MSMEs and Effective Post-Disaster Recovery

After disaster strikes, several stages take place in order for a community to overcome the impact. Immediate emergency response caters for the more essential needs, such as rescue and temporary relocation activities, as well as for the provision of basic supplies such as water, food and shelter. Following these initial weeks, more coordinated efforts towards recovery begin.

Effective and sustainable post-disaster recovery does not imply restoring pre-disaster conditions but rather achieving a situation where the restoration and more importantly the improvement of livelihoods and living conditions is achieved and the exposure to disaster risk is decreased (UNISDR, 2009). In many cases, achieving effective and sustainable recovery is influenced by actions taken during the emergency response phase. This is particularly true in the case of MSMEs whose business continuity is threatened by prolonged closure periods and population dislocation following a disaster.

Traditionally, post-disaster recovery models have had a stronger focus on infrastructure restoration and other elements of household recovery than on economic resilience, including business continuity. Initiatives that support the transition between emergency arrangements and economically sustainable communities still include livelihood recovery as a marginal component of post-disaster support, perhaps due to a modest understanding of its role in disaster recovery (Galbraith and Stiles, 2006).

MSMEs are at the forefront of livelihood recovery after disasters; whether formal firms or informal entrepreneurs, local MSMEs are the engine of local markets which underpin effective recovery efforts. Communities trying to rebuild need goods and services in even higher levels than during pre-disaster times. Income generating opportunities provided directly (e.g. employment) or indirectly (e.g. demand for goods and services) by MSMEs, even if temporary, can act as an economic buffer in times of distress (Harvey, 2003). The sooner local MSMEs step in as economic engines of community recovery the better the prospects of achieving sustainable post-disaster recovery becomes, with local MSMEs being best placed to identify the fast-changing needs of the recovering community and finding ways to meet them (Chamlee-Wright and Storr, 2008).

In addition, local economic activity sends important signals regarding the pace at which a community is recovering. This can inform personal decisions on whether or not to return to the disaster zone, as well as promote new public and private investment (Chamlee-Wright and Storr, 2008). Hence, livelihood recovery strategies involving the survival and swift recovery of local MSMEs will inspire the recovery of the entire community.

Policy makers would do well to watch MSME activity in disaster-affected areas, and how this impacts on economic structure. If recovery of formal MSMEs such as local shops and service providers is sluggish, the way is paved for bigger firms to step in and replace them. This was the case after Hurricane Katrina where retail showed better post-disaster performance than other sectors due to the loss of pre-disaster MSMEs replaced by large (even global) firms (De Ruiter, 2011; Corey and Deitch, 2011). Similarly, an increase in informal employment levels, particularly in the retail sector, may signal difficulty among the broader private sector that resorts to informality as a way of coping with the shock.

Livelihood recovery cannot be solely understood from an economic perspective, it is an essential engine of social recovery (Regnier et al., 2008). MSMEs, particularly those in the service and commerce industries, build social capital in disaster-affected communities. The inherent flexibility of informality and adaptability of entrepreneurs means that they are capable of reactivating local markets and promoting the spaces (markets, cafes, restaurants) where communities can rebound after disasters.

Individuals' efforts are not the only driver of livelihood recovery; it is also very much dependent on the larger, combined efforts of the community. Apart from restarting operations in disaster-affected zones, MSMEs and entrepreneurs in cooperatives and other pre-disaster networks can also support the return of the community by coordinating collective actions and using their personnel and equipment to gather information on returnees, help clean roads, and rebuild houses (Chamlee-Wright and Storr, 2008).

### **How to Involve MSMEs in Effective Post-Disaster Recovery**

Involving MSMEs as catalysts of local socio-economic recovery requires public investment to focus on the right mix of 'hard' infrastructure restoration and 'soft' socio-economic policies. As discussed in Chapter 2, infrastructure restoration such as building reconstruction and supply of basic services enables MSMEs to continue operations while preventing population displacement. In coastal communities affected by Hurricane Katrina where rebuilding harbors and piers was part of early post-disaster response fishermen were able to completely restore their livelihoods six months after the disaster (De Ruiter, 2001). Infrastructure restoration and enhancement can also be a driver of future economic and social development (Box 12).

Getting the right emphasis on 'softer' policies to incentivize livelihood recovery seems a more complex task than infrastructure restoration. The development of a healthy MSME sector depends on a combination of factors to create enabling environments for private sector development while allowing the effectiveness of direct interventions – in particular value chains and markets. Achieving this in developing countries is hard enough during stable times and becomes even more so after crises such as disasters. This enabling environment or investment climate will be discussed more in detail in Chapter 4.

MSMEs' resilience to disaster risk can be strengthened by understanding the role of post-disaster response and recovery strategies in the sector. Analysing how certain initiatives can maximize (or hamper) both MSMEs recovery and their support to community recovery can facilitate the identification of policy options to build MSME resilience to disaster risk.

#### *Infrastructure and Housing Restoration ('hard' policies)*

Housing should be seen as an essential component of livelihood recovery, not only from the perspective of providing affected communities with safe shelter but as a determinant of, and even venue for, productive processes (Pribadi, 2005). Home-based MSMEs are a clear example of the relationship between housing and income generating activities.

Relocation efforts immediately after a disaster tend to focus on the provision of habitable spaces but do not necessarily incorporate an appreciation of livelihood continuity. Including this concern in relocation efforts could contribute to shorter closure times, avoidance of predatory competition from outside businesses and a swifter recovery of local MSMEs. Options for MSME continuity during emergency response can include temporary operating locations such as those accommodating displaced households (Zhang et al., 2004; Box 16).

During a recovery phase, unconnected housing and livelihood recovery programmes can negatively impact on the restoration of MSME operations. For instance, Thai fishing communities benefitted from resettlement programmes to safer, inner land after the Indian-ocean tsunami but it affected their access to the sea causing them to abandon their traditional livelihood activities (Suanrattanachai et al., 2010). Fishing communities in Japan experienced a similar issue after the GEJE but brokered convenient solution with policy makers by resettling inland but insisting on easy access to the sea, having coastal high-rise buildings built and agreeing on swift evacuation plans to protect them in the event of a tsunami (UNDP, 2013a).

Large-scale projects are the most efficient way of restoring damaged infrastructure but unless they are carefully designed they are likely to exclude local businesses and workers (see Box 21 and Box 12). Labor-intensive infrastructure projects that prioritize local contractors can help by intimately involving them in the recovery processes and stimulating local-level employment and production (see next section on emergency employment), while minimizing the redistributive effect of disasters in favor of larger (usually outside) businesses (Lyons et al., 2010).

**Box 12. Flooding in Mozambique: Good Practices and Lessons Learned**

Mozambique experienced severe flooding in 2000 and 2001, with nearly 900,000 people displaced as a result. The governments' recovery strategy aimed to move from emergency response to a recovery phase, in which pre-disaster conditions were improved, as quickly as possible. In other words, Mozambique wanted to use the disasters as an opportunity to 'build back better', promoting reconstruction aimed at reducing vulnerability to disaster risk and creating opportunities for local economic revival.

With close oversight and coordination by line ministries, the recovery strategy included the use of existing government and donor-financed programmes during the emergency phase, facilitating a swift response and capitalizing on local knowledge. In a second recovery phase, mobilization of funds was enough not only to rebuild lost infrastructure but to fill pre-disaster gaps by building new facilities where required. Transparency and efficiency in the use of resources was acknowledged by the international donor community as an underpinning factor of the successful reconstruction process.

The reconstruction strategy partially supported economic recovery. Local contractors were prioritized over international ones as a means of supporting national economic recovery. However, maximization of labor-intensive techniques was not initially integrated into contracts, which limited how the affected communities could benefit from potential livelihood strategies. With the emphasis on reconstruction, very few organizations worked on the topics of skills development or income generating opportunities.

Source: Wiles et al, 2005; Galbraith and Stiles, 2006

Using labor-intensive infrastructure development as a driver of local employment is not an explicitly post-disaster business model. Public-Private Partnerships (PPPs) and other models of private sector engagement can be ambassadors for the role of infrastructure projects in promoting employment and development. However, unless the area is particularly depressed, pre-disaster projects may have fewer incentives to include local economy considerations. Efficiency (e.g. one large firm may be easier to monitor and have more economies of scale and lower costs than several smaller firms) may be a more important criterion in pre-disaster infrastructure projects. Political leverage of business elites can be another important factor.

There are plenty of practical measures for MSMEs inclusion in post-disaster reconstruction that can be adopted pre-disaster. MSMEs could be signed up for reconstruction efforts even before disaster strikes and contracts for reconstruction could favor the use of local firms (Zhang et al., 2004). In Quintana Roo, Mexico, municipalities pre-agree with private enterprises to support non-productive response and recovery tasks (e.g. cleaning debris and restoring roads) following traditional roles and practices of social enterprises such as cooperatives (UNDP, 2013b).

MSMEs already act as informal developers and network builders shaping the built environment in many developing cities. There is a need to recognize this role in post-disaster reconstruction by turning it into an opportunity for MSMEs to engage with the 'formal' economy and its appropriate building practices. (Lyons et al., 2010; Box 13).

**Box 13: Supporting Informal Reconstruction: The CARMEN Project, Haiti**

'The construction industry in Haiti is largely unregulated. Despite efforts to approve a revised construction code which can be effectively implemented in Haiti, there are no official standards for materials while building codes are generally only followed by large companies. Many construction workers, especially in the informal sector, have never received training on how to undertake safe constructions and reparations. Very few construction workers have received training on anti-seismic construction techniques. The quality of construction materials is unpredictable and in many cases sub-standard, especially those materials such as cement and blocks produced by the informal sector in low-income neighborhoods. This results in many occasions in substandard construction work being carried out on a regular basis.'

The Community Resource Centers for House Repairs (CARMEN) Project was launched in October 2011 by the Ministry of Public Works (MTPTC) and the Municipalities of Delmas, Léogâne and Port au Prince with financial and technical support from UNDP, with the objective of "empowering the Haitian population in target areas to rebuild their neighborhoods safely and sustainably through the provision of key services (information, training, technical and financial support) to facilitate self-repair and reconstruction. After one year of operations, the project has achieved remarkable results with 5 fully operational centers that have provided information, training, technical and financial assistance to 28,000 direct beneficiaries looking to repair or rebuild their homes; 12,800 families have been registered by the centers and 4,500 people have received training on safe construction practices. In addition, project engineers have carried out 6,200 detailed evaluations of damaged houses and prepared reparation plans for these houses. In terms of financial assistance, 1 000 grants have been already distributed to the most vulnerable families in order to fund the purchase of quality construction materials through a pioneering e-voucher mobile money system.'

Source: UNDP 2012

### *Emergency Employment and Unemployment Benefits*

'Cash-for-Work' and other emergency support programmes can be useful safety nets to help communities restore infrastructure, local demand, and the personal capital needed for MSMEs to operate. The response to post-Katrina included hiring fishermen to clean up the debris and rebuild the harbor, providing them with the necessary conditions to restart their business (De Ruiter, 2011). After the Indian Ocean tsunami, many self-employed in Aceh entered the construction sector to recover capital and livelihoods or engage in a different business (Pribadi, 2005). In Haiti, a large scale 'Cash-for-Work' programme that started just eight days after the 2010 earthquake helped remove 1 million cubic meters of rubble while injecting cash into the community, helping to restore the local economy (UNDP, 2013e).

'Cash-for-Work' and 'Food-for-Work' schemes are useful safety nets for dealing with seasonal unemployment and the food insecurity caused by drought. The Mahatma Gandhi National Rural Employment Guarantee Scheme (MG-NREGS) implemented in all districts in India guarantees 100 days of work per family, constituting an alternative livelihood strategy for drought-affected communities (MHA, 2011).

There are questions as to the limitations of emergency employment as a post-disaster recovery tool for entrepreneurs and this concerns the rather narrow contribution these programmes can provide other than income and site clearing. Skills development, along with quality of the infrastructure built, are among the poorest performing areas of emergency employment schemes calling into question their overall medium-term impact. However, gender-disaggregated data from Bolivia's Plan Nacional de Empleo (PLANE) show that 86 percent of women (many of whom were having their first work experience) got new work skills under the scheme (compared to only 37 percent of men) (Fernandez et al., 2011). This highlights the potential benefits that gender-sensitive emergency employment schemes can have on empowerment and skills development,

essential assets for women entering the self-employment sector after disasters in order to support household recovery.

The issue of quality of infrastructure is not a crucial component in post-disaster emergency employment, as the majority of initial works relate to debris removal, which is technically less challenging than building projects. Despite potential issues with disposal (e.g. in Haiti debris was initially dumped in open and public spaces, delaying recovery), debris removal is considered a 'healing' exercise that contributes to restoring the social fabric of affected communities. In addition, debris removal can serve as a long-term catalyst for business opportunities for MSMEs in the recycling industry (UNDP, 2013e).

Although a secondary objective compared to income generation, infrastructure generated through emergency employment schemes can help MSMEs recover and even build more robust communities. Workfare programmes such as the Indian MG-NREGS explicitly include DRR projects related to flood prevention and drought proofing in their guidelines (MRD, 2013). The MG-NREGS also acted as a template for swift response in Odisha, helping leverage resources for the reconstruction of complex infrastructure (main roads and bridges) to support community recovery after the 2011 floods (UNDP, 2013c).

The level of income that emergency employment schemes can provide to MSMEs should be far below what business reactivation can represent, as wages in emergency employment schemes are usually set intentionally low to attract (and encourage self-selection of) the poorest sections of the population. In such scenarios, temporary employment schemes directly involving entrepreneurs can help MSMEs to recover as long as this can support the recovery of the physical environment in which MSMEs operate and/or new skills are being acquired. Otherwise, direct support for business recovery should be favored.

Business recovery programmes (mainly targeted at the self-employed and informal microenterprises) can be a component of emergency employment programmes (UNDP, 2013d). They can include specific training on business development and can create linkages with microfinance products (credits, savings and insurance). Such linkages can introduce elements of sustainable medium term recovery and take emergency employment beyond the scope of immediate, labor-intensive response.

In developed countries in which there are unemployment benefits post-disaster, MSME recovery can suffer. Evidence after Katrina shows that population dislocation created a shortage of staff, further intensified by the existence, and uptake, of unemployment benefits (Chamlee-Right and Storr, 2008). The result was labor shortages.

Conversely, governments can incentivize a return to work after disasters through policies such as tax incentives, tax breaks and subsidized benefits for employees on forced leave (Fernandez et al., 2011; UNDP, 2013a). Japan has used various labor market instruments to both minimize the costs for MSMEs to keep their employees on despite low production, and slow down unemployment, particularly among vulnerable groups such as the youth (Box 17).

#### *Cash grants and in-kind aid*

Direct grants are a more direct way of providing MSMEs with the necessary capital for business continuity. Unlike emergency aid they can allow for adequate self-employed strategies for MSMEs and can promote a sustainable income generation activity at an early stage of disaster recovery, leaving emergency employment and other safety nets for the most vulnerable (Fernandez et al., 2011; UNDP, 2013d).

Grants have been found to be most effective in supporting the recovery of MSMEs when given at early stages of the response stage. Evidence from the Yogyakarta earthquake (2006) in Indonesia shows that MSMEs that received grants and informal credits recovered more successfully than

those not receiving them (Pribadi, 2005; Resosudarmo et al., 2008). Moreover, MSMEs receiving financial aid 3 months after the disaster recovered more successfully than MSMEs receiving support at a later stage. Overall, only 3 percent of MSMEs receiving financial support closed down within a year of the earthquake while that rate was 15 percent for those without any support (Resosudarmo et al, 2008).

An important limitation of financial assistance is that cash is effective only as long as markets function. Particularly after disasters associated with intensive risk, markets are, and remain so temporarily, severely disrupted, limiting the impact of cash assistance in MSME recovery. Damages to transport and communication links can make it difficult for MSMEs to access the necessary inputs for their businesses, a phenomenon that particularly affects those MSMEs in the manufacturing sector (De Mel et al, 2010). Informal MSMEs in the manufacturing sector in Banda Aceh reported severe disruptions of their operations due to the impossibility of finding raw material and light equipment for production processes (Pribadi, 2005).

Such a scenario highlights the importance of well-designed, in-kind support programmes that help MSMEs access productive inputs. Such programmes can allow temporary external support, including goods and services not locally available (Pribadi, 2005). The role of BAs is critical here, to ensure that in-kind support is relevant and appropriate for MSME recovery (see Box 14).

**Box 14: GEJE: The Idle machine project**

The manufacture sector was surprisingly resilient after the GEJE. Part of the explanation lies in the adequate in-kind support of the Chambers of Commerce and Industry (CCIs) to the affected and non-affected prefectures. Within the Idle-Machine Project, CCIs identify the machines and equipment needed by affected MSMEs, and CCIs in non-affected areas and identify the fallow and idle machines available for charge-free transfer. Tohoku CCI Association makes the database of the required machines and equipment, and matches the demands and supplies in close consultation with the machinery experts. Once matching is recognized, Tohoku CCI Association arranges and pays for transportation and installation of the equipment, in collaboration with the donor enterprise and CCI. The donor enterprise ensures that the machine/equipment is in good order before the delivery. Within weeks of the disaster, 300 machinery matches took place. A total of 1861 matches had taken place by December 2012 and the support continues. The robust and extensive network of CCIs with strong linkages to MSMEs makes this project a success (Sendai CCI, 2013).

Source: UNDP, 2013a

Ensuring market reestablishment should remain a priority during post-disaster recovery. But ill thought-out recovery programmes, supply-based responses and the allocation of external in-kind support that does not consider its negative impact on recovering local markets should be avoided. Such measures can crowd out local producers, distort prices and risk a full recovery of the local private sector in the medium-term (Chang et al, 2011). Instead, in-kind support should serve as an opportunity for early involvement of local MSMEs in community recovery, which, in turn, supports their own survival strategies as well as the restoration of local value chains.

*Microfinance*

Microcredit for MSMEs' recovery can be a controversial measure if the conditions and accessibility are not designed to cater for the needs of MSMEs, particularly those informal and financially weaker players. Impractical processes for accessing recovery loans thwarted MSMEs in contexts as diverse as the United States and Sri Lanka after Katrina and the Indian-ocean tsunami (Boxes 7 and 15). Moreover, certain pre-disaster characteristics of the MSME sector such as low financial literacy prove an additional barrier to accessing post-disaster micro-credits (UNDP, 2011). Such issues are a challenge for policy-makers looking to design adequate financial mechanisms for MSMEs' recovery.

Microfinance institutions (MFIs) may be better placed to support policy makers on this front. For instance in Haiti, Fonkoze, a local MFI was quick and flexible in offering products and services (microloans, reception of remittances, and insurance) to affected MSMEs, making a difference to their speed of recovery (Fernandez et al., 2011).

Microcredit programmes linked to sustainable income-generating activities are also an option, supporting a transition between disaster response and medium-term economic recovery. These programmes have a better prognosis when they use a market-based response (prioritizing locally available goods and services over a supply-based response) and when solid value chains have been part of a pre-disaster, private sector business model.

Microcredit has also been found to work better in contexts where community participation and self-organization was high before the disaster (Regnier et al., 2008), where the private sector (e.g. through BAs) has been part of the design and implementation of these products, and where credit is accompanied by technical advice that can maximize the impact of the funds in MSME recovery (Box 14).

**Box 15. Sri Lanka: Government's TAFREN and the "Back to Business" Model**

After the Indian-ocean tsunami, the government of Sri Lanka's TAFREN strategy for restoring the livelihoods of 70–85 percent of households (more than 150,000 affected) within a year after the disaster was based on three main strategies: cash grants, 'Cash-for-Work' and financial assistance for the recovery of MSMEs. For the latter, the central Bank of Sri Lanka's Susahana Scheme dispensed \$36 million to 8,000 private sector borrowers for business recovery (September 2005). In addition and particularly targeting MSMEs, the National Development Trust Fund Scheme provided 5,570 loans to small businesses.

TAFREN's role in MSME recovery has been questioned, however, by local communities such as the one in Arugam Bay, for over-centralizing its recovery interventions (see Box 1). The Federation of Chambers of Commerce of Sri Lanka (FCCISL) has also openly complained about real help denied to struggling MSMEs that needed to find collateral and guarantors (many of which were either dead or dislocated due to the disaster) in order to access the loans.

The FCCISL, with the support from development partners such as the ILO, launched a comprehensive programme for MSME recovery after the Indian-ocean tsunami devastated the sector. Mobilizing \$5.7 million, the 'Back to Business' model provided more than 11,000 MSMEs with much more than traditional financial assistance. Capacity building, technology transfer and market linkages were among 10 different interventions that the programme offered in order to allow MSMEs not only to recover but to improve their pre-disaster situation. Two years on from the disaster, all participating MSMEs were operating with some even initiating export activity. Around 50,000 jobs were created under the scheme.

Source: Dasanayaka and Perera, 2009; Jayawardane, 2006; FCCISL website <http://www.fccisl.lk/updates/fccisl-slams-state-tsunami-policy-for-small-industries/>, accessed 11/12/20012

Microfinance has traditionally targeted women, particularly through savings groups and revolving funds. This allows female entrepreneurs to actively support post-disaster recovery. After the Yogyakarta earthquake (2006), many women entering into self-employment to help with recovery had access to interest-free credit capital from rotating savings and credit associations (ROSCAS), effectively supporting business growth (Husein, 2004).

## Stakeholders Involved in MSMEs Recovery

### Government

Government's immediate post-disaster response could be more centralized than longer-term recovery initiatives, particularly in the event of an intensive risk that may overwhelm local human and financial resources. Financial, technical and political support roles could be better performed by central level institutions with generally greater capacity and decision-making power than disaster-affected local governments (UN, 2011). Alternatively, strong and unaffected local governments can also provide support to disaster-stricken communities through pre-disaster cooperation arrangements (UN, 2011).

When state governments exist and hold considerable institutional and financial sway (e.g. United States and India) they usually take the lead on disaster response with support from central-level DRM entities. For instance in India, the State Crises Management Group comprises multi-sectorial officers in charge of dealing with disaster response while the central government provides additional guidance and support depending on the severity of the calamity, the scale of the response operation and the need for additional resources (MHA, 2011).

Government's experience with disasters can shape the way in which they respond to subsequent risks, including the level of involvement of state and local-level institutions and the way communities participate in livelihood reconstruction. India's institutional set up has evolved following the Odisha cyclone (1999) and the Gujarat earthquake (2001) in order to provide strengthened state-level institutional and capacity, and the creation of permanent State Disaster Management Authorities, which enjoy additional political leverage (MHA, 2011; Thomalla and Schmuck, 2004). Gujarat Disaster Risk Management Authority helped address the needs of 10,000 MSMEs affected by the 2001 earthquake through the issuing and implementation of its Earthquake Reconstruction Programme (MHA, 2011).

Evidence from Mexico (Box 16) and India illustrate how central governments can facilitate the establishment of permanent financing facilities to provide swift relief to those affected by disasters, including MSMEs. In India, the existing system of financing response expenditure primarily relies on the National and States Disaster Respond Funds and its provision of finance for lost equipment of specific industries such as fisheries and handcraft, as well as the clearance of debris in affected areas (UNDP, 2013c). Extraordinary calamities such as the Indian-ocean tsunami (2004) made India's central government mobilize resources from the National Calamity Contingency Fund to help state governments with livelihood restoration in the fishery and agricultural sectors, as well as a rapid restoration of basic infrastructure (MHA, 2011).

#### **Box 16. Mexico: Floods in Yajalón, Chiapas**

Several municipalities in northern Chiapas State are extremely vulnerable to the effects of hydro-meteorological hazards (primarily flooding) due to locations immediately adjacent to watercourses. The municipality of Yajalón is one such example and includes dozens of commercial enterprises bordering the bank of the River Chulá that, in September 2010, were heavily affected by Tropical Storm Matthew (2010). Severe flooding caused acute damage to 32 small businesses in the immediate vicinity and directly affected a total of 126 businesses.

A state of emergency declared by the State government, allowed central government to promptly mobilize resources to MSMEs, from institutions in different competencies such as humanitarian response and MSME promotion. In Yajalón, 235 MSMEs directly and indirectly benefitted from non-refundable financial support which provided working capital, helping to pay for urgent repairs and allowing the MSMEs to secure the positions of 673 workers. Further technical and financial assistance was subsequently provided to secure full recovery through enhancing the competitiveness of affected MSMEs.

Source: UNDP. 2013b

response of Japan's central government after the GEJE included a range of instruments that considered the financial, technical and spatial needs of MSMEs.

**Box 17: GEJE: Central Government Response and Collaboration with Prefectural Governments**

**Financial**, and other support to MSMEs: Great East Japan Earthquake Recovery Special Loan Programme, initiated almost immediately after the disaster, provides reduced interest with extended grace and repayment periods and reduced interest rates, including de facto zero-interest loans to MSMEs whose offices were completely destroyed. The programme has been expanded to cover MSMEs indirectly affected by the disaster. In FY 2011, 194,503 loans worth approximately \$53 billion were provided. Managerial improvement loans and loan guarantees to help MSMEs overcome working capital shortages and financial burdens have also been established.

**Employment:** Unemployment benefits for approximately \$24.6 billion have been provided to support employees taking forced leave at disaster-damaged workplaces that have suspended operation, even if they are still employed. Employment adjustment subsidies for approximately \$8.8 billion subsidizes two-thirds (four-fifth for MSMEs) of the leave allowances for businesses forced to cut back operations due to the disaster damage, leaving on-leave employees free to find employment. Job fairs are held for new graduates in the disaster affected regions, and a list of graduate-hiring MSMEs is published in a supporting project.

**Workspaces:** Temporary Factories, Shops and Other Facilities Project: The Organization for Small & Medium Enterprises and Regional Innovation Japan (SMRJ) arranged temporary stores and factories for lease to MSMEs free of charge through municipal governments with a budget of approximately \$332 million. As of the end of September 2012, 463 of such facilities had completed construction/reconstruction across 6 prefectures and 2,593 entrepreneurs had moved into these temporary facilities and started running businesses.

**Equipment and facilities:** Restoration and Maintenance Subsidy Project for Facilities of SME Groups (approximately \$309 billion) insists on the provision of half a subsidy from national government and a quarter of a subsidy from the prefectural government for the equipment and facility restoration of MSMEs that prepare a restoration plan, certified by the prefecture. The group of MSMEs should be industrial clusters, core companies or local central shopping districts that are important for expansion of local economies, provision of local employment, formation of important supply chains for the national economy, and/or provision of essential functions to local communities. As of November 2012, 329 groups of 5,779 MSMEs had been supported.

**Assistance for rebuilding of local shopping districts:** Approximately \$4.8 million for subsidies for removal of debris (damaged arcades and other obstructions), and for partial and major repair of damaged facilities has been secured under FY2011 supplementary budget to recover the affected local shopping districts. 114 projects were approved and received funds in FY2011.

**Provision of reconstruction advice:** The SMRJ and other bodies have established assistance bases in the disaster areas, and dispatched specialists to provide advice to MSMEs on management, town building, facility restoration and other issues inquired.

Where effective financial coordination undertaken by central government combines with good capacity of state or local level government, this can facilitate the implementation of coordinated and inclusive livelihood rehabilitation initiatives India's response to the Indian-ocean tsunami was remarkably state-centered, channeling aid through its recovery funds, with state governments engaged in implementing 'soft' policies for livelihood restoration as well as infrastructure reconstruction (Kruks-Wisner, 2011). In some villages these state-led 'soft' policies enabled marginalized groups such as women and low-caste citizens to benefit from recovery support and facilitated their engagement with formal government and civil-society institutions (Kruks-Wisner, 2011).

Central governments also have the role of ensuring that the business environment, if not totally stable, remains predictable for MSMEs and other members of the community in order to make

optimal decisions in their recovery processes (Chamlee-Right and Storr, 2008). Conflictive policies and announcements of support that does not arrive distort market signals MSMEs respond to and may lead them to delay decisions or waste resources in sub-optimal activities. In New Orleans, residents and business owners were confused by contradictory messages on returning and rebuilding policies after Hurricane Katrina, while in Yogyakarta, MSMEs that were promised a grant but did not receive it had more difficulty recovering than those promised nothing (Resosudarmo et al., 2008).

During post-disaster recovery phase, central governments can effectively support strategic and financial planning with direct impact on MSMEs, particularly in areas such as reconstruction, urban/regional redevelopment, financial assistance, employment provision, and industry/value chain development, including new flagship local/regional economic strategies.

In the medium and long terms, central governments are instrumental in supporting local governments develop DRM strategies (Dodman, 2009; UNDP, 2013b). Disasters provide lessons to strengthen institutional structures in charge of DRR at different levels, to mitigate risk and be better prepared to respond to disasters. Information gathering on various aspects, such as weather data, risk maps and economic activities, including MSMEs profiles, can be technically supported by central-level institutions.

However important the role that central governments plays, responses that do not sufficiently involve local stakeholders in decision-making processes have the potential to generate conflict and disparities among the local community (Box 1). In addition, priorities of central level government (e.g. safety) and strategies to achieve them (e.g. relocation) may be at odds with local-level priorities that can support MSMEs and community recovery (e.g. remaining in the area and rebuilding livelihoods).

Both central and local governments need to ensure that pre-disaster regulations do not become hurdles in a post-disaster recovery context. For instance, child day care regulations on the maximum number of children per adult made supply of child care insufficient after Hurricane Katrina, slowing down recovery of the entire community by preventing many parents from joining recovery efforts. Informal care was also less available due to population dislocation and rebuilding efforts. Issues with building codes, zoning, handicap-friendly building codes, and bureaucratic procedures were also preventing commercial and social service spaces in New Orleans from opening after Katrina (Chamlee-Right and Storr, 2008).

In other cases, regulations with sufficient local input can serve as a protection for MSMEs from predatory behavior after disasters, supporting their recovery. Regulations on the way reconstruction contracts should prioritize local employment and existing businesses (e.g. spots on new or upgraded markets) can be defined during the pre-disaster stage.

By building on pre-disaster partnership and knowledge, local-level institutions can mobilize adequate response to affected MSMEs and minimize to the extent possible disruptions in their operations (Box 18). Local governments are also better placed to identify the role MSMEs can play in disaster response.

**Box 18: Response and Recovery after the GEJE: Swift Reach-out to MSMEs by Miyako City, Iwate Prefecture**

Like other cities along the coast, Miyako City in Iwate prefecture suffered devastating damages from the tsunami. Miyako's CCI and the municipality jointly established the Miyako Disaster Recovery Strategy Council within five days of the disaster and went on to assess the damages, plan, and implement the day-to-day rehabilitation operations of the city. Thanks to this timely and effective Council, debris removal and restoration of roads and lifelines were relatively fast in Miyako city.

Under the instruction of the mayor, four out of nine staff from the Industry Promotion Unit (IPU) of the municipality went back to their main duty two weeks after the disaster. The staff immediately contacted affected MSMEs and responded to their needs individually. The municipality set up its own interest subsidy scheme as early as March (less than three weeks from the disaster) by coordinating with Iwate prefecture, which received 421 applications by June in the same year (Sekii, 2011).

Once the SMRJ had announced a support measure to lease temporary stores and factories to MSMEs free of charge as part of the national government initiatives, Miyako city acted quickly and reserved land by May, with plans to supply 23 stores and factories near temporary shelters by August. Though the land was not sufficient to respond to all applications, the initiative taken by Miyako city was highly commendable when many other municipalities had not yet been able to attend the needs of MSMEs (Sekii, 2011).

The main reason why Miyako city could respond swiftly and adequately was its constant and proactive pre-disaster engagement with MSMEs. The IPU knew well the needs of the MSMEs in the city and had built a relationship of mutual trust (Sekii, 2011).

Source: UNDP, 2013a

Some practical, post-disaster measures in which local governments can make a difference in the recovery of MSMEs are the provision of alternative workspaces (e.g. as part of the temporary resettlement programmes), and the coordination of debris removal and other activities that need local labor and that can facilitate the return of the affected population (De Ruiter, 2011).

Local governments are well positioned to initiate planning processes with post-disaster communities and build on pre-disaster partnerships ensuring that local MSMEs are part of new development strategies coordinated at central level. Japan's 'Future Meetings' programme holds meetings with local MSMEs to gather their views on future projects and ideas for community development, paying particular attention to young/female entrepreneurs across the country; a relevant approach given Tohoku's demographic issues<sup>10</sup>. Mexico's local governments have coordinated MSMEs and entrepreneurs from different industries in the use of adaptive measures to reduce risk (Box 19). Effective coordination between central and local governments can maximize the benefits of locally driven approaches to recovery, with central level technical and financial resources.

<sup>10</sup> Refer to Japan's case study for a detailed analysis of demographic issues and MSME recovery in Tohoku.

### **Box 19: Mexico: Effective Private Sector Coordination through Local Governments**

The Yucatan Peninsula in southern Mexico is comprised of three states: Campeche, Yucatan and Quintana Roo. Fishing is an important economic activity, and the majority involved are organized within cooperatives. Hydro-meteorological phenomena in the form of hurricanes, tropical storms, high winds and heavy rainfall are the most damaging natural hazards in the region.

In 2002, Yucatan was devastated by Hurricane Isidore which caused economic losses in the fishery industry of around \$8 million. Six communities together lost 1,102 fishing boats and 651 boat motors. To compound matters, large numbers of livestock belonging to local farmers drowned in the floods. In San Felipe municipality, Quintana Roo State, a nearby water body protected by mangroves was identified as somewhere to store boats where, by sinking them into the mud, they could be protected from the strong winds. The fishermen then began to move other heavy equipment (e.g. boat motors) by cattle trucks to storehouses 30 kilometres away.

During an emergency, the local government helped the two main sectors – fishing and livestock – coordinate their activities through establishing agreements between the cattle industry and the fishermen. The latter now use cattle trucks for the transportation of boat motors and the cattle industry also allow its livestock facilities to be used for temporary storage (of motors) and as storm shelters for people.

The effectiveness of these measures has been proved several times since Isidore. In 2005 Hurricane Wilma struck. Measures to safeguard the fishing fleet and equipment was very successful, San Felipe only lost 4 of its 350 boats, livelihood disruption was minimal and subsequent losses were very low (1% of the entire fleet).

Source: UNDP, 2013b

Local governments should be actively involved in allocating resources and prioritizing investments. Overconcentration of support in certain sectors, activities or geographical areas can hinder the recovery of less-supported areas and create market distortions. For instance in Aceh and Sri Lanka, the majority of aid in certain communities focused on housing reconstruction and in-kind support to the fishing industry (mainly boats and equipment), leaving other industries with little support while underemphasizing other areas of livelihood recovery (Reigner, 2005; Box 1).

Local governments are critical in land and physical planning after disasters, as they can help avoid uninformed reconstruction decisions at central level (Box 1), tackle land tenure issues more effectively and redirect investments to specific areas as part of local development initiatives (Dodman et al., 2009).

Industry and value chain upgrade, promotion and development do not have to be centrally driven, though it is often so (Box 1). Given their knowledge of pre-disaster comparative advantages, strong local governments are in a position to identify niches in which disasters can be turned into opportunities. Tohoku's new approach to the tourism industry is an example of a locally led post-disaster development initiative actively supported by the central government (Box 20).

### **Box 20. Tohoku's Tourism Development Strategy after the GEJE**

The GEJE had a profound impact on tourism in Tohoku prefecture, affecting both domestic and international travelers. Though the number of customers at accommodation facilities in Tohoku is gradually increasing, many of them are related to recovery initiatives and are not tourists. Foreign travelers decreased by 50–70 percent immediately after the disaster, and the number has not yet recovered despite gradual improvement. As of March 2012, 45 hotels and inns have gone bankrupt in the affected area, and the number is increasing (Tohoku District Transport Bureau, 2011).

Within three weeks of the disaster, local divisions of the Ministry of Land, Infrastructure, Transport and Tourism and local public and private stakeholders had established a working group to share information and discuss recovery strategies for the tourism industry. Initiatives include branding Tohoku as a resilient community (their logo is 'Together, let's try hard, Tohoku!' which has become the symbol of Tohoku's recovery and attracted further support) and national and international advertising campaigns using traditional symbols of Tohoku's tourism (such as female owners of inns known as 'Okami-san') as well as efforts to highlighting the safety of the destination.

These local efforts now converge at the 'Destination TOHOKU Campaign', which is being actively supported by central government. The Campaign has 28 zones across 6 prefectures covering the entire Tohoku region, including disaster-affected areas. The main goal is to create a strengthened tourism industry around a new model of interactive tourism where tourists can communicate more with local people and feel the daily lives of the region – as opposed to the distant, model where tourists go from one touristic spot to the next- thus preserving the local culture and maximizing the benefits for the local community.

In the seven months since the start of the Destination TOHOKU Campaign, the number of travelers into the Tohoku region reached about 31 million, 27 million of which stayed at accommodation facilities. The economic ripples for the same period are estimated at 980 billion yen (approximately \$11.9 billion), from which the amount attributable to the Campaign is around 46 billion yen (approximately \$557 million). With the strong focus on revitalizing local communities, the Campaign benefits a wide range of local MSMEs, from traditional inns and hotels, retail shops, restaurants, transportation companies and other relevant businesses. The Campaign continues until the end March 2013, and is expected to further revitalize the region.

Source: UNDP. 2013a

### *Development Partners (Donors)*

Development partners are instrumental in helping governments access resources that can support response activities, and more importantly, long-term recovery and reconstruction strategies. The latter may need a substantial amount of resources over several years which governments, especially those in developing countries, rarely have (Ghesquiere and Mahul, 2010). Technical assistance from development partners often accompanies these resources.

Reconstruction projects funded by development partners can have mixed effects in the recovery of MSMEs. Technical assistance for substantive grants and loans is usually attached to large-scale, costly infrastructure projects, which are better served by big construction firms. In addition, the notion of 'building back better' can include the upgrade of certain industries (tourism is a recurrent example in many disaster-affected countries such as The Maldives, Indonesia, Sri Lanka and Thailand) (Klein, 2007) for which special provisions such as new land planning and financial incentives for investors are included in the projects. These strategies often translates into the exclusion of local MSMEs and communities (fishing and informal commerce) from prime land such as beachfronts (Box 1; Klein, 2007)

Development partners could better assist governments in supporting MSMEs' recovery after disasters by building on pre-disaster areas of support and technical expertise. Pre-disaster collaboration in areas such as private sector development projects, emergency employment and

other social safety net schemes, labor-intensive infrastructure projects and technical assistance to land planning, could serve as entry points from which development partners can adapt existing knowledge and instruments to provide context-specific technical and financial assistance, and minimize the risk of supporting predatory projects (Box 1).

### *Non-Governmental Organizations (NGOs)*

NGOs, particularly those that have been working in an area for a while, can bring important knowledge of local pre-disaster economic and social structures to inform recovery efforts. Their focus on 'soft' socio-economic recovery initiatives (livelihoods) as opposed to major infrastructure projects has been found to complement 'hard' infrastructure restoration projects in which big donors have relative expertise (Regnier et al., 2008). In Indonesia, NGOs programmes implemented in flood-prone areas in East Jakarta were found to focus specifically on livelihood recovery in innovative and contextualized ways (Pribadi, 2005).

NGOs are well placed to support government efforts in transitioning from emergency response to long-term economic and social recovery by establishing links between different stakeholders. Their role in brokering between different local actors such as private sector and local governments has been fundamental for the recovery processes in Colombia after the 1999 earthquake where they managed long-term reconstruction and recovery projects (Box 22). In Aceh after the tsunami, partnerships between NGOs were instrumental in identifying livelihood recovery requirements through local NGOs, and matching them to resources and expertise with support of international NGOs (Doloksaribu, 2012).

NGOs can support MSMEs recovery to the extent that they can provide much-needed technical and financial inputs for MSMEs to resume operations and avoid replacing private sector activities with aid. An exit strategy from emergency relief needs to include a retreat of NGOs and other private and multilateral donors from the provision of financial support (whether cash or in-kind) to more advisory and coordinating roles that allow the restoration of markets and value chains and prevent further market distortions.

NGOs should complement government efforts rather than replace them. Despite the perceived apolitical and efficient nature of the Fondo para la Reconstrucción Social y Económica del Eje Cafetero (FOREC) recovery model in Colombia, many question the legitimacy of NGOs (some of which were influenced by elite groups) in what should have been a local government's role (Cuervo Restrepo, 2002; Box 22).

### *Private Actors: Business Associations (BAs), community networks, and DRM Initiatives*

BAs, in post-disaster phase, can ensure that disaster response meets the needs of MSMEs. The role of BAs has been paramount after disasters such as the Indian-ocean tsunami (see Box 15) and the GEJE (Box 14) in leading and informing government-led recovery strategies for the MSME sector. Governments, often overwhelmed by the extent of the response required would benefit from the support of BAs in areas such as information sharing, advice on adequate strategies, stakeholder coordination and assessment of programme effectiveness.

BAs can directly support MSMEs in distress by coordinating their requests for support to central and local governments and allowing a more effective recovery of entire industries. For instance the Ishinomaki CCI helped coordinate subsidy requests of 210 MSMEs in the fishing and seafood industry (138 seafood products processing and 72 related) and present them to the Maintenance Subsidy Project for Facilities of MSME Groups (Box 17), to efficiently help the entire value chain recover (UNDP, 2013a).

Cooperatives and community groups can support emergency response efforts (e.g. debris removal) as well as provide an additional local angle by identifying reconstruction projects that

can benefit local community recovery and future disaster resilience. Their involvement can maximize local MSME involvement in early response efforts.

CSR<sup>11</sup> among big firms has been crucial to support MSMEs recovery after disasters. The Indian-ocean tsunami showed that CSR sensitizes big firms about their role in broader economic recovery through training (see Box 1) and private sector led recovery models (see Box 15). The GEJE has also seen examples of CSR that benefited entire communities while Mexico's case illustrates the role of mediators in maximizing benefits of CSR and the challenges to its sustainability after disasters (Box 21).

**Box 21: CSR and disasters: Supporting Local Communities, by Takamasa (Fish Processing Factory), Onagawa City, after the GEJE and Mexico's *All Together for Recovery and Prevention of Disasters* Initiative**

Takamasa is a fish processing factory based in the coastal city of Onagawa city, severely hit by the tsunami. Takamasa was established in 1937, and currently has 175 employees. As soon as the disaster hit, from day one, Takamasa distributed 3 tons of fish sausage to evacuation centers in Onagawa city and, having restored emergency power supply, it continued to produce fresh fish sausages for provision. Moreover, Takamasa has started a new factory that quadruples production, and leases the old factory, free of charge, to the affected local seafood processing enterprises in order to support industry recovery. In addition Takamasa employed 70 residents at the new factory, contributing to job creation in the local community. The company received the 77 Business Award in 2012 from the 77 Business Support Foundation for its role in revitalizing the community with its fish products and for its significant contribution to the recovery of Onagawa city after the disaster.

In the immediate aftermath of tropical storm Matthew (2010) different actors and businesses in Mexico came forward, eager to provide assistance to the affected communities. UNDP, Oxfam and Action-Aid joined forces and created *All Together for Recovery and Prevention of Disasters*, a consortium and funding mechanism that created a strategic plan alongside directors from Mexico's 'big business' community. Through these means a methodology was created to distribute funds from big business to development and livelihood projects using an integrated approach of recovery and risk prevention. The fund collected an initial amount of \$150,000 for various livelihood recovery projects.

Although the Mexican Government observed and supported these two initiatives, there is still some resistance from civil society as well as a lack of interest from the private sector to coordinate CSR initiatives with the federal government. This threatens the sustainability of CSR activities by impeding follow-up and strategic advocacy.

Sources: UNDP, 2013a; UNDP, 2013b

An important limitation of the CSR model is the need of an adequate enabling environment for it to be more than a single-firm initiative. Such enabling environments are commonplace in developed countries where the institutional context allows the alignment of government objectives and private sector solutions (Twigg, 2001). As Box 21 shows, successful private sector involvement through CSR or other models can benefit from outside brokers (governments, NGOs, or development partners) where the enabling environment is not solid enough to motivate big firms to engage.

PPPs have been increasingly used in the development agenda to align public and private incentives in DRM, including post-disaster recovery. Governments set their goals and priorities (e.g. decrease financial exposure after disasters) and design appropriate incentives for private

<sup>11</sup> CSR sees the scope of influence of private sector enterprises beyond the production process to include a broader set of stakeholders (such as communities) and identify the areas in which corporate actions matter. Basic compliance with norms and regulations, risk minimization and value creation in their operations are three spheres in which CSR goes beyond the "do no harm" principle to incorporate concrete and voluntary actions intended to respond to societal objectives (Twigg, 2001).

sector involvement in achieving that goal. PPPs are then a way of channeling private sector advantages such as technical expertise and efficiency for the benefit of public interest. PPPs are important models in post-disaster phase as they provide a framework to engage several public and private stakeholders in the recovery process – including reconstruction efforts.

However, PPPs need to be designed with vigilance, particularly in light of the nature of crises and the destabilization that post-disasters entail. They need to strike the right balance between the protective role of government and private sector incentives for participation. They should not be seen as a way to fill institutional gaps in recovery but rather as tools for implementing clearly established and comprehensive recovery policies. PPPs need to avoid rewarding the predatory behavior of few large firms benefiting from the chaos of the disaster and instead promote an inclusive model for local stakeholders such as MSMEs to restore their livelihoods.

#### **Box 22. Post-Earthquake Reconstruction Funds: Lessons from Colombia**

The Fondo para la Reconstrucción y Desarrollo Social del Eje Cafetero (FOREC) was an award-winning model that dealt with reconstruction efforts after two major earthquakes devastated the coffee region in Colombia in 1999. The earthquakes left \$1.8 billion in damages, 1,185 deaths and 55,000 people affected. The FOREC channeled funds from donors and national government through NGOs that took responsibility for reconstruction efforts in affected areas, awarding contracts, overseeing operations and consulting with relevant public and private stakeholders.

In a period of three years, the programme channeled \$710 million, awarding 130,000 housing subsidies, relocating 3,600 families from risk-prone to safer areas, and building hundreds of new schools, health centers and other social infrastructure. Important drivers of these results were identified as innovative approaches to multi-stakeholder involvement in decision-making processes through NGOs, and the fact that local land, physical and economic development plans (Planes de Acción Zonal (PAZ)) were part of local governments' regular remit.

However, not everyone agrees that multi-stakeholder involvement was optimal or that the availability of PAZ translated into inclusive reconstruction. Critics have focused on the "franchising" of reconstruction efforts that highlighted the weakness of the central government disaster-management institution (Sistema Nacional de Atención y Prevención de Desastres) by creating a parallel institutional framework. In addition, the model bypassed well-established local governments in decision-making processes, hence undermining their influence. The winner of the model was identified as the business elite while the affected population was given very few channels to actively participate in reconstruction. Lastly, critics argue that in the FOREC model, physical reconstruction was prioritized over the reestablishment of the social fabric.

Sources: FOREC: Colombia: Cuervo Restrepo (2002), Rojas Carvajal (2002), UNDP <http://www.pnud.org.co/lecciones.shtml?x=932> and European Commission and UNDP [http://red-desastres.org/fileadmin/documentos/Experiencias\\_Compiladas\\_Andino/Colombia/EJECAFETERO.pdf](http://red-desastres.org/fileadmin/documentos/Experiencias_Compiladas_Andino/Colombia/EJECAFETERO.pdf).

## Chapter 4: Policy Approaches

As discussed in Chapter 2, impact of disasters on MSMEs is determined by a set of exogenous and endogenous variables determining vulnerability to natural hazards, as well as by post-disaster coping strategies and recovery efforts. In this context, government interventions, not only through direct DRR programmes but also through broader economic and institutional variables, can influence the level of resilience MSMEs have to disaster. There is also a role for government in creating incentives for private sector participation in DRM that can directly and indirectly affect the options MSMEs have for resilience and recovery from disasters.

Governments, private sector, development partners and NGOs have been involved in different ways with MSME recovery programmes. Some have been specifically targeted at MSMEs (Box 6) while others have indirectly affected their local MSMEs (Box 9). Conflictive approaches have sometimes highlighted the need for better coordination. Such conflicts illustrate that many governments are overwhelmed by the extent of the disaster and may need support and expertise from others (e.g. BAs) to handle recovery of particular groups and sectors, such as MSMEs.

Livelihood strategies in the post-disaster stage seem to face two main issues: they can be relatively ignored by recovery programmes or be addressed in ways that do not support local community revival. In both cases, the potential for MSMEs to be drivers of local socio-economic recovery is undermined.

These issues are all related to pre-disaster conditions in disaster-afflicted areas. Poor and vulnerable communities that have been ignored by public policy are likely to see their livelihood restoration as a marginal component of disaster recovery. Large-scale economic recovery projects may equally ignore local livelihood strategies, importing external initiatives with little or negative impact to communities.

Resilience of MSMEs to disasters should start by tackling socio-economic drivers of risk in pre-disaster stage. From this perspective, the following section will identify a framework to look at policy options that can contribute to building MSMEs' resilience to disaster risk. Elements of pre-disaster resilience as well as livelihood recovery strategies after disasters will be analysed. This framework will look at how private sector promotion, in this case MSMEs, and DRR overlap. A distinction will be made between pre- and post-disaster risk-management, and how it can facilitate the integration of MSME-related elements into DRR strategies.

### Investment Climate and Direct Interventions

It is important to distinguish between government as an actor in the broader investment climate and government as a player in direct interventions to private sector developments. (Mac Sweeney, 2009). Business-enabling developmental measures are designed to reach an entire economy and facilitate the investment climate while more direct or 'interventionist' measures, regional developments or value chain promotion programmes, focus on particular geographic areas or sectors/groups. The investment climate deals with the broader economic and institutional context that governments should ensure that businesses operate efficiently. The interventionist approach allocates governments a more specific role in ensuring that markets have the tools needed for the private sector to develop.

**Table 2. Investment Climate and Direct Interventions for building disaster resilience among MSMEs**

<b>Investment Climate</b>	<b>Policy Options</b>
Legal Reform and Business Regulation	<ul style="list-style-type: none"> <li>• Knowledge and understanding of MSMEs and their relationship with the local community;</li> <li>• DRR-focused normative framework;</li> <li>• Social Protection;</li> <li>• Promotion and Support of CSR;</li> <li>• Sensitization and Promotion of BCP;</li> </ul>
Financial Institutions and Macroeconomic Frameworks	<ul style="list-style-type: none"> <li>• Affordable insurance programmes that manage moral hazard and promote risk reduction;</li> </ul>
Infrastructure (built environment and services)	<ul style="list-style-type: none"> <li>• Adequate NRM schemes;</li> <li>• Land use planning and building codes;</li> <li>• Restoration of basic services as a response priority;</li> <li>• Promoting relocation and reconstruction for livelihood restoration;</li> </ul>
Trade Policy	<ul style="list-style-type: none"> <li>• Promote export diversification;</li> </ul>
<b>Direct Interventions</b>	
Market Linkages and Value Chains	<ul style="list-style-type: none"> <li>• Address livelihood recovery through locally-driven value chain restoration/upgrade and the promotion of broader market linkages;</li> </ul>
Business Associations and Community Groups	<ul style="list-style-type: none"> <li>• Promotion of BAs and CG as key informants and communicators of DRR and recovery strategies;</li> </ul>
Skills, Training and Employment	<ul style="list-style-type: none"> <li>• Emergency employment schemes respond to the needs of the target population and the local context. Enterprise recovery programmes provide comprehensive support packages for target groups;</li> <li>• Skills development programmes tailored to the needs of MSMEs' workers and entrepreneurs;</li> </ul>
Microfinance	<ul style="list-style-type: none"> <li>• Identify gaps in risk management tools available to the MSME sector and promote micro-credit, investment of remittances, savings groups and micro-insurance as effective DRM and livelihood recovery tools;</li> </ul>
Targeted Support	<ul style="list-style-type: none"> <li>• Link in-kind support with productive assets and livelihood restoration. Use cash and in-kind support according to context-specific needs.</li> </ul>

Source: Adapted from Mac Sweeney, 2009.

This study will focus on certain elements of the investment climate and the interventionist approach and will suggest policy options for promoting effective DRM in the MSMEs sector. These elements will concentrate on particular vulnerabilities associated with informal practices of MSMEs in developing countries. Issues identified will refer to variables analysed in Chapter 2 that can determine the impact of disasters on MSMEs as well as to instruments for disaster recovery identified in Chapter 3. The analysis will then consider ways to identify DRR and recovery policy approaches helping to build resilience among MSMEs.

A deliberate emphasis on pre-disaster conditions will help stress the importance of prioritizing pre-disaster DRM functions such as risk assessment, reduction and transfer, as well as effective preparedness, in order to effectively build resilience among MSMEs and their communities.

## Investment Climate

### *Legal Reform and Business Regulations*

**Issue No. 1:** *Pre-disaster conditions influence and can limit the effectiveness of post-disaster recovery strategies*

Good governance, low corruption and the rule of law are positively correlated to prosperity (Galbraith and Stiles, 2006). They also correlated to a thriving MSME sector and the use of effective DRR. It is important, therefore, for policy makers to understand the implications of the broader business environment in the development, growth and resilience of MSMEs, as well as its relationship with broader community recovery. For instance in Aceh, MSMEs and community

recovery from the tsunami encountered hurdles in weak pre-disaster business environments shaped by armed conflict and low investment of oil and gas revenues in the area (Reigner, 2008).

**Issue No. 2:** *Regulatory and business environments can push MSMEs into informal practices and make it difficult to design programmes responding to local needs.*

*“Some policymakers believe that reducing informality is important as doing so would expand the tax base, create a more inclusive regulatory environment, and allow for informal firms to enjoy the legal protections and other benefits of formal institutions.”*

(IFC, 2006)

As discussed earlier, there are concerns for the ILO about the relationship between informal and decent work. These concerns are valid, given that informal employment and unregistered MSMEs dominate the private sector landscape in developing countries. But informality is the illustration, rather than the cause, of a broader institutional problem. It reflects the inadequacy of rigid legal and regulatory systems in contexts where they cannot be enforced (Perry et al., 2007).

Informality is the framework in which MSMEs operate in most developing countries, and it is important to reflect on the implications of promoting DRM in contexts where non-compliance with basic regulations is the norm. This includes non-compliance with risk management tools (e.g. building codes, land planning, environmental standards, social protection provision), which can affect the vulnerability of MSMEs and their communities to natural hazards.

Regulatory and business frameworks that are easily enforceable and that promote a culture of compliance with state norms and regulations can provide a solid basis for adequate MSME recovery after disasters. Decreasing the hurdles to business registration and participation in private markets, identifying informal operating locations of MSMEs for upgrade rather than punitive purposes, promoting BAs independently of MSME status, and acknowledging vulnerabilities and risk management needs of informal MSMEs can strengthen DRM practices among informal MSMEs.

Informality also shapes what DRM means for developing country’s MSMEs, where traditional private sector tools such as insurance and BCPs may need to be adapted and new tools may need to be designed. Models for actively including MSMEs in recovery processes need to go beyond efficiency criteria to acknowledging the role MSMEs have in contributing to the livelihoods of their communities by providing services, goods and employment – particularly but not exclusively to – vulnerable sectors of the labor market.

Flexibility of informal MSMEs to adjust their productive processes needs to be exploited during post-disaster situations where the role of MSMEs in the local economic fabric is paramount. Given their inherent flexibility, informal MSMEs, particularly the self-employed, may respond quicker to recovery stimulus (Galbraith and Stiles, 2006). Encouragement of economic activity (e.g. participation in reconstruction programmes, market linkages for affected MSMEs) that allows MSMEs to restore their operations and provide local employment would benefit the broader community.

Rigid and over-centralized recovery programmes continuing to see informal MSMEs as outlaws rather than as engines of local economic activity can generate conflict and slow recovery at local levels, and perpetuate or even exacerbate pre-disaster inequality. Comprehensive frameworks for post-disaster recovery need to allow for those affected to express their recovery needs instead of being victimized twice.

Medium-term recovery needs to explicitly seek to reduce the vulnerability of informal MSMEs (Pribadi, 2005). Efforts to formalize MSMEs should be encouraged as a DRR strategy to the extent they open the door to government support for business development, growth and empowerment (UNDP, 2013b). Tackling the underlying causes of vulnerability of the informal sector would most likely outweigh the potential advantages of informal employment in times of crises (e.g. as a buffer through income generation activities). For this, a culture of engagement between government and informal MSMEs should be promoted.

**Box 23. The Assistantship of Street Vendors Programme, East Jakarta**

Through the Cooperatives and Small Medium Enterprises Subsection, The Municipality of East Jakarta is addressing the needs of street vendors affected by seasonal floods. The Assistantship of Street Vendors Programme promotes the formalization of businesses through counseling for business development, promotion of cooperatives, access to credit, provision of permanent commercial areas and equipment and motivational activities (e.g. competitions for the cleanest stall).

In addition to strengthening economic conditions, these strategies aim to build social capital among street vendors, which will act as a safety net in the event of disasters.

Source: Pribadi (2005)

Technical support to informal enterprises should help them move up the ladder and include DRM in their business plans. Doing so will illustrate the costs of remaining in risky locations and reverse the perception that implementing DRM is costly. Evidence from Mexico shows that advice on adequate DRM strategies provided alongside financial assistance was an effective combination to improve DRM practices among MSMEs (Hernandez Montes de Oca, 2011).

**Policy Options/Measures:**

***Knowledge and Understanding of MSMEs and their relationship with the local community***

Information and data on formal and informal MSMEs are crucial to support the development of an adequate business environment. Without knowledge of challenges and opportunities of MSMEs in particular contexts, legal and regulatory frameworks can hardly meet their needs. Identifying the areas in which MSMEs may be better served by a more relaxed business regulation as well as the areas in which protection can be provided by regulatory frameworks can support resilience of MSMEs to disaster risk.

Data and information that characterizes the MSME sector can help understand its relationship with the local community, which in turn can better inform DRM and recovery programmes. Systematically gathering information on MSME activities and employment can provide vital data on risks, and risk management practices and needs. This practice can be useful in identifying risk profiles geographically and by sector, and maximizing the impact of disaster recovery programmes in the local community.

Including gender-disaggregated information can better inform recovery programmes and can help turn crises into opportunities to structurally address gender disparities. Understanding socio-economic roles determining access to, and control over, productive assets can shed more light on differences in vulnerability to natural hazards of women and men. This is essential to address sources of exclusion or financial weakness usually related to female-owned MSMEs.

Obtaining information on informal MSMEs can be a particularly difficult task as they usually operate under the radar screen, but failing to do so can leave vulnerable MSMEs and workers out of recovery efforts. In Aceh, many informal economic activities were relatively neglected by policy makers due to the absence of micro-level mapping in every community (Reigner et al., 2008). In Sri

Lanka, failure to understand gender roles in the fishing industry aggravated disparities during post-disaster recovery support (Box 11).

The fact that few studies have thoroughly documented the impact of disasters on MSMEs and the variables affecting it, particularly in the developing world, illustrates how vulnerabilities and areas of resilience within the sector are yet to be fully explored. Moreover, the almost complete absence of information on failed MSMEs after disasters leaves a gap in any vulnerability analysis. Documenting pre-disaster DRM practices of MSMEs as well as post-disaster recovery patterns can shed light on the policies and programmes that can contribute to a resilient MSME sector.

Information on economic sectors and activities that can be severely affected by disasters is a step towards building disaster-resilient MSMEs. Basic service disruptions, risk perception issues, and population dislocation affect MSMEs differently according to their economic activity and level of dependency on local markets. Tools such as BCP can help analyse the extent of these disruptions in MSME operations.

### ***DRR-focused Normative and Regulatory Frameworks***

A greater focus on disaster reduction rather than on post-disaster response in regulatory frameworks will set the tone of where a country's priorities in DRM stand. This will address the fact that both private and public leaders are more incentivized to provide visible emergency response (e.g. infrastructure rebuilding) rather than contributing to less visible prevention efforts (e.g. livelihood resilience). Under inappropriate institutional arrangements, short-term visibility incentives of public and private sectors may merge in costly, usually infrastructure-related, projects that may not address the needs of the most vulnerable.

Changing the focus from disaster response to disaster prevention and mitigation needs to be a conscious institutional and economic approach. The higher the profile of disaster reduction efforts in the national political agenda, the more disaster reduction efforts can be effectively encouraged among the private sector, which in turn may decrease the likelihood of devastating outcomes after a crisis.

The regulatory framework for the built environment will need to address the challenges posed by informal settlements or informal workplaces in terms of adequate DRM. Many home-based, usually female-owned, MSMEs serving informal settlement markets or those informally working in public spaces are highly vulnerable to disaster risk. Addressing these vulnerabilities will need to touch upon legislation on security of tenure in the case of dwellings, as well as the right to work on public spaces. Slum upgrading and programmes designed to provide stable and safe workplaces for informal vendors (see Box 22) are examples of how major socio-economic vulnerabilities to disaster risk are better addressed by inclusive and comprehensive regulatory frameworks.

The business environment also needs to incentivize investments by MSMEs on DMR. MSMEs with good business prospects are more likely to have both the financial means and the incentive to protect their business from disaster risks. Negative elements of the business environment such as corruption and insecurity are likely to decrease the incentives to invest in adequate DRM strategies. Were small business regulations to be simplified it would dispel red tape and corruption and encourage a culture of compliance and engagement of MSMEs with state institutions.

### **Social Protection**

There are shortcomings of tiding basic social protection to formal labor contracts, especially in contexts with high informality (Perry et al., 2007). Non-contributory transfers to the poor and the vulnerable have partially filled the gap; and there are social protection instruments that can increase disaster resilience in pre-disaster stages by reducing poverty and building human capital

(UN, 2011), although they are not explicitly DRR mechanisms. These can also help prevent impacts associated with extensive risk, and avoid individual health shocks.

Specific social protection programmes that address the needs of MSMEs (e.g. emergency employment, cash and in-kind transfers) will be discussed in the section on Direct Interventions. It is worth noting here that social protection should not be understood as a stand-alone emergency policy, but as a fundamental part of DRR strategies at national and local levels. The effectiveness of any social protection programme as an emergency response is always improved by the presence of delivery mechanisms (e.g. benefit payment systems) that can appropriately and promptly address the needs of the recovering community.

### **Promote and Support CSR**

The role and incentives of the private sector in DRR is no longer just a national issue due to the global experience of disaster and the global reach of multinational corporations. The UN acknowledges the need for a global broker that will help align private and public sector interests in a Global Compact Initiative. It promotes CSR around 10 universally accepted principles to which more than 130 countries and 8,700 enterprises have voluntarily adhered (Box 24).

#### **Box 24. Global Compact Principles on Environment**

**Principle 7: Businesses should support a precautionary approach to environmental challenges.** This principle calls for the inclusion of risk assessment and risk management in corporate operations where environmental outcomes are uncertain. It illustrates the long-term benefits for companies of focusing on prevention rather than remedy, as well as on the benefits of investing in sustainable technology.

**Principle 8: Businesses should undertake initiatives to promote greater environmental responsibility.** Businesses are encouraged to mainstream environmental responsibility across production processes. This practice will help companies gain credibility in societies where there is an appetite for environmentally sustainable development.

**Principle 9: Businesses should encourage the development and diffusion of environmentally friendly technologies.** Businesses that are capable of producing in a cleaner and less wasteful way will protect their workers from exposure to hazardous elements and enjoy the benefits of innovation and efficiency.

Source: <http://www.unglobalcompact.org/AboutTheGC/TheTenPrinciples/index.html>

The principles outlined in the Global Compact allows governments worldwide, and at all levels, to identify roles for the private sector in development processes (e.g. risk assessment, green technology) and promote their involvement. These principles also illustrate the benefits DRR brings to businesses themselves. Proactive governments in developing countries could unite big firms and MSMEs around CSR engagement, creating awareness of potential recovery roles and best practices. Governments could also identify existing (and potentially informal) CSR practices among MSMEs to build upon.

The European Commission (2007) acknowledges that although CSR is a concept mainly designed for large companies, MSMEs have been practicing it informally in an organic way. The EC encourages policy-makers to establish links between CSR and social policies within industrial sectors that share similar social and environmental concerns. BAs are crucial in helping establish these linkages.

The extent to which this 'proactive government' will allow disaster-risk CSR in the recovery of MSMEs depends on local private sector dynamics. Pre-disaster linkages between big firms and

MSMEs could transform post-disaster support in areas such as knowledge transfer and supply-chain restoration. It could also set a precedent for CSR to become a central tenet of community DRM strategies, rather than a one-time, post-disaster activity (Miyagushi and Shaw, 2005).

The role of government as a mediator and leader of private sector involvement in DRR is paramount (Williams, 2011). Individuals alone cannot influence adequate levels of DRR, government interventions are justified in the provision of public good and promotion of private sector involvement, as well as the regulation and active participation of certain 'private' markets. These might be markets with information asymmetries, like the insurance market, or exploitative industries with damaging environmental practices. In recent years the insurance sector has illustrated the role of government in facilitating risk mitigation and transfer mechanisms to the population (Box 25).

Insurance companies illustrate how CSR responds to corporate interests. The industry is highly engaged in disaster risk, particularly in research and development, as risk reduction directly benefits their business. This allows for an alignment of private incentives and social benefits, and it also suggests that a leader or regulator of CSR in disaster risk efforts may need to come from outside the private sector to ensure that social goals are observed.

### **Sensitization on and Promotion of Business Continuity Planning (BCPL).**

Large and small firms can both benefit from better disaster preparedness. Yet the practice of BCPL is not widespread, even among the large, export-oriented firms of disaster-prone countries. Only 12 out of the 40 Philippines companies surveyed after an Asia-Pacific Economic Cooperation meeting had BCPs or were developing one (UNISDR, 2012).

BCPL should be a cornerstone of the debate with private sectors around DRM; it would be even easier for the private sector to understand the benefits to their company of undertaking BCPL than, for instance, engaging in CSR. BCPL can help build a culture of prevention and preparedness, and enlist the private sector in the safety and livelihood strategies of their own employees. For policy-makers, promoting BCPL will open windows of opportunity for private sectors to reflect on their role in markets and their degree of vulnerability and exposure to internal and external shocks. MSMEs that engage in BCPL and other disaster preparedness activities, even where formal BCPs are not implemented, will improve their immunity to disasters. Engaging in BCPL increase the levels of awareness, insight and preparedness, which should then translate into faster and more effective disaster recovery. Emergency communication plans and alternative operating locations are strategies used by the most resilient businesses.

BCPL could exploit the inherent flexibility of MSMEs, particularly informal ones, to respond and adapt to changing environments. When applied to disaster risk this flexibility presents itself as an underdeveloped, untapped capability due to the lack of awareness, planning and preparation of MSMEs for disaster risk. As disasters increase in intensity and as indirect and direct damages rise, it will be increasingly difficult for MSMEs to cope without implementing more systematic prevention and mitigation practices (Hernandez Montes de Oca, 2011).

For informal MSMEs, BCPL could be linked to disaster preparedness plans. Local governments, NGOs and development partners already working on disaster preparedness at a grass-roots level could bolt on the business continuity concerns of BCPL to already existing DRM tools for disaster preparedness.

**Issue No. 1:** *MSMEs lack access to financial, insurance and other risk management markets and tools.*

Although disaster recovery is economically and socially more costly than disaster risk reduction, the latter may imply short-term costs for the poor that are impossible to deal with. Housing built with anti-seismic standards may be too costly for the deprived to afford and hazard-free land is usually more expensive than hazardous one.

Risk transfer also has limitations in reaching those most in need. Due to adverse selection and moral hazards, the premiums within formal insurance markets may prove prohibitive for the poor, leaving them unprotected against hazards.

Finally, formal coping strategies in the event of disasters tend to come from governments and be expensive. Since disaster losses can be overwhelmingly high for developing countries, governments may not be able to support MSMEs with formal coping strategies, abandoning them to their own devices or other actors (e.g. NGOs).

**Policy Options/Measures:**

**Affordable insurance programmes that manage moral hazard and promote risk reduction.**

There is a tendency for citizens to delay taking action to protect themselves and their assets from the harmful consequences of disasters, particularly when there is an expectation that governments will if disaster strikes (Williams, 2011). Affordability is another key element bedeviling a culture of prevention, with market-based solutions out of reach for the most vulnerable, including MSMEs. Lack of resources to manage disaster risk can even shrink risk perceptions (Asgary et al., 2012).

Actually experiencing disaster risk can illustrate the need for better DRM strategies. More than a third of MSMEs affected by the Pakistani floods were willing to purchase flood insurance if it was available (Asgary et al., 2012).

Governments need to take a proactive approach to decreasing their fiscal burden in the event of a disaster and promote a culture of risk reduction and self-protection among MSMEs. Insurance is an area where governments have acknowledged a responsibility for issues of access and affordability. By linking insurance programmes to risk reduction activities among insured citizens and communities and by pooling risk in reinsurance markets, governments in Turkey (see Box 8), Albania, the United States and more recently Honduras, are trying to reduce moral hazard and extend the coverage of traditionally limited insurance policies.

Community-pooled insurance for instance, is a tool that can only work in communities organized around the objective of reducing and transferring risk. For instance, flood insurance schemes in the United States (National Flood Insurance Programme) are designed for members of communities implementing risk reduction measures. MSMEs that are part of these communities can benefit from such schemes.

In the presence of these models, MSMEs are expected to benefit where involved. Obstacles to MSME uptake include constraints around informal land or building practices of premises and the cost of insurance premiums (e.g. if they remain forbiddingly high).

**Box 25. Turkish Catastrophe Insurance Programme**

Responding to the needs in the aftermath of Marmara Earthquake in 2000, the Turkish government established the Turkish Catastrophe Insurance Programme (TCIP). Faced with an immovable private sector that could not cater for insurance needs in the event of earthquakes (risk cannot be efficiently pooled if most of the insured are affected), it sought creative solutions. Its aim was to provide insurance to formal urban and rural dwellers, decrease the government's fiscal burden after disasters, transfer risk to international reinsurance markets, and encourage mitigation strategies through insurance.

The private sector was fundamental to this initiative. The TCIP is a public sector insurance company which distributes policies through existing insurance companies, who in turn receive a commission. The TCIP also purchases commercial reinsurance, acting as a reinsurer of last resort. The programme now covers 20 percent of domestic dwellings in the country, and may already include some home-based MSMEs.

Source: Ghesquiere and Mahul (2010)

Other grass roots and local risk management options for MSMEs will be discussed in the section on direct interventions. What affordable and adequate insurance programmes can illustrate is the potential for macroeconomic financial frameworks to reach MSMEs, both directly (e.g. insure MSMEs) and indirectly (e.g. promote DRR in insured communities). Its inclusion shows that financial DRM for MSMEs is more than just a local-level issue to be tackled through microfinance.

*Infrastructure (built environment and services)*

**Issue No. 1:** *MSMEs may engage in economic activities that increase the vulnerability of their community and may operate in informal and hazardous areas lacking basic infrastructure*

The exploitation of natural resources can be a source of vulnerability for communities if:

- Natural resources are exploited in a way that causes environmental damage or puts those employed in their extraction at risk
- Communities over-rely on them for their livelihoods, becoming vulnerable to shocks when supply is affected.
- Their exploitation is a source of conflict (especially those with high returns such as oil and diamonds) or creates horizontal disparities in the society that cause the creation of a predatory private sector (Mac Seewney, 2009).

Some examples in the study (GEJE, Hurricane Katrina) have highlighted the vulnerability of communities that over-rely on natural resources for their livelihoods, such as fisheries. The repair of natural ecosystems after disasters, a slow and difficult process to influence, can be further set back by secondary, subsequent environmental disasters. In addition, the location of activities such as fisheries in disaster-prone areas means these activities are inherently risky for those employed in them.

**Issue No. 2:** *MSME operations are affected by disruptions in infrastructure and service provision after a disaster*

**Issue No. 3:** *Reconstruction and recovery programmes that do not consciously incorporate local MSMEs can crowd them out in favor of business elites.*

**Policy Options/Measures:****Adequate Natural Resource Management (NRM) Schemes**

NRM is a livelihood strategy that can be severely affected by disasters and can even increase the vulnerability of communities to natural hazards by deteriorating the environment. Ecosystem/environmental services provide a lens through which government and private sector can look at natural resources from a win-win perspective. Aligning environmental objectives to decrease vulnerability to natural hazards with livelihood strategies (e.g. water and soil management, crop diversification, agro-forestry management) can generate the right incentives to

protect ecosystems and provide sustainable income for the MSMEs involved in such schemes (ICAR, 2010).

Payment for environmental services (PES), both for protecting and for using them, can regulate and rationalize the exploitation of natural resources. Even in the case of non-productive activities (e.g. conservation, pollution reduction), PES can ensure that MSMEs engaged in NRM also have a DRR component. A wide range of countries (the UK and Costa Rica among many) are exploring different versions of PES instruments (BSR, 2013; Fonafifo, 2007)

### **Land Use Planning and Building Codes**

Land management can bear a high political cost in pre- and post-disaster phases. There are few incentives (and sometimes few resources too) for politicians to re-locate communities in vulnerable areas, particularly during pre-disaster phase where hazards have not yet translated into disaster. The difficulties of finding affordable land elsewhere and concerns of the rights of informal dwellers to subsidized land can sabotage government action.

Despite these difficulties (or perhaps precisely because of them) land use planning is a priority element of DRR and should be pursued as an indispensable tool for disaster risk assessment and reduction, particularly in urban areas. Land use planning has been considered, along with finance and insurance, to be the most successful regulatory system to deal with flood risk management, as land use planning seeks to guide and control unregulated development (Jha et al., 2012).

#### **Box 26. Land Use Planning: What it is and what it can do for DRM**

The United Nations International Strategy for Disaster Reduction (UNISDR, 2009) defines land use planning as “the process undertaken by public authorities to identify, evaluate and decide on different options for the use of land, including consideration of long-term economic, social and environmental objectives and the implications for different communities and interest groups, and the subsequent formulation and promulgation of plans that describe the permitted or acceptable uses (pg. 19)’.

Through ‘integrated land use planning’, The WB and the Global Facility for Disaster Reduction and Recovery (GFDRR) have further developed this tool to include what happens when different actors have different (and potentially conflictive) objectives for land use. It allows policy makers to assess the risks and determine the appropriate location of uses. And it helps identify the appropriate infrastructure to use as framework for physical planning. It is therefore an important element of risk assessment and mitigation as it will decrease communities’ permanent exposure to disaster risk.

Land use planning is also an important element in post-disaster reconstruction, as it provides information on potential relocation sites, the need for updating building codes and the best location for community rebuilding efforts.

Source: UINSDR, 2009; Jha et al, 2012; Jha et al., 2010.

Land use planning is an optimal tool for new developments but also for risk-reduction in (informally) developed areas. Informal settlement upgrading, relocation of hazardous industries, infrastructure building and conservation efforts can all use land use planning to inform risk-reduction processes.

There is a high probability that informal MSMEs locate in informal settlements or in sub-optimal, hazardous land. Given the prime rates for prime land, land use planning is an even more important risk management tool for those who cannot afford the choice to settle in safe land.

Physical planning and building codes are also essential for promoting a safe built environment. Earthquake-prone areas need to design and enforce anti-seismic and storm-resistant building codes. By having better information and awareness among developers and dwellers on the

importance of anti-seismic or storm-resistant structure, the perceived costs of compliance can be offset. This is particularly relevant in countries with a high incidence of informal settlements, and autonomous, progressive approaches to construction. Initiatives such as the CARMEN Project in Haiti (Box 13) can help MSMEs overcome supply-side constraints (e.g. lack of skills or knowledge) as well as demand-side constraints (e.g. lack of financial means).

The availability of land use and physical plans in the pre-disaster phase can and should guide reconstruction efforts. Tools that have already assessed risks (even if recommendations have not been implemented or enforced) can present disasters as an opportunity to adopt risk-reduction strategies.

Local governments have a major role in ensuring that the design, update and implementation of land use and physical plans are a common and inclusive practice, easily adaptable to post-disaster physical recovery. Inclusive physical planning processes are a way to protect local MSMEs from pre-disaster risk and preserving their place in the community's economic, social and physical landscape, before and after disasters.

### **Restoration of Basic Services as a Response Priority**

Economically, disruptions in service provision can impede the recovery of MSMEs. By assessing the reliance on these services when put under stress, and the implications for local livelihoods and communities if they fail, strategies can be identified to minimize disruptions and facilitate MSMEs and community recovery.

In a post-disaster context the most visible damage, and the one that often attracts greatest attention, is structural damage (buildings and houses). It is the damage to basic infrastructure however (water and electricity supplies) and business-enabling networks allowing for communication such as roads and phone networks, that are a key part of business continuity and can pose an even greater disruption to businesses than structural damage (e.g. basic infrastructure disruption can affect even unaffected buildings and houses)<sup>12</sup>. Making the restoration of lifelines a response priority will surely benefit the swift recovery of MSMEs, enabling them to act as agents of recovery for the broader community.

### **Promoting Relocation and Reconstruction for Livelihood Restoration**

Relocation can be an ideal way of protecting disaster-affected communities but it can pose issues to the social and economic fabric of these communities. Equal weight should be given to livelihood restoration and housing provision in relocation policies. Housing provision without livelihood restoration is an unsustainable approach to disaster recovery.

MSMEs are at the center of the livelihood recovery strategies of disaster-affected communities. It is paramount to ensure that relocation programmes set aside commercial spaces or temporary operating locations in the case of temporary resettlements, to minimize disruption to MSME operations. It is also essential that these arrangements guarantee women's physical safety and promote their access to swift livelihood recovery strategies by minimizing burdensome survival tasks (e.g. water fetching).

Where frictions exist between safety and livelihoods during relocation processes, compromises that ensure both can be reached. Japan (fishing industry, UNDP, 2013a) and Mexico (Box 19) have both found ways in which collective action and inter-sector collaboration, brokered by local governments, can create practical solutions to decrease risk associated with livelihood strategies.

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<sup>12</sup> Corey and Deitch (2011) discussed potential losses of up to 7 percent of gross regional product in the Memphis area after a simulated earthquake, due to electricity cuts alone.

Reconstruction is another area in which MSMEs business continuity can support a broader community recovery. Emergency employment for labor-intensive reconstruction can act as a safety net for entrepreneurs in need of income to restore their livelihoods. Other alternatives for MSMEs in the construction industry can include contracts prioritizing local service providers. By prioritizing locally available materials, reconstruction efforts can ensure that they respond to context-appropriate technologies and that local MSMEs working with them have a chance to participate (Haigh, 2010). Having a comprehensive vision of long-term impact, rather than an emphasis on replacing damaged infrastructure, is more likely to support the economic and social recovery of affected communities (Jha et al., 2010) and result in effective reconstruction.

### *Trade Policy*

**Issue:** *MSMEs lack access to export activities and broader value chains that decrease their dependency on local inputs and markets*

### **Policy Options/Measures:**

#### **Promote export diversification**

Trading across borders may not sound like a priority for MSMEs, even less so in the context of DRM. However, the former (the relationship between MSMEs and international trade) was analysed by the IFC (2006), which found a strong correlation between sound trade environments and density of formal MSMEs. This could be explained by the benefits that large firms engaged in international trade can bring to local MSMEs within value chains. The latter (trade and DRM) was found to be an important variable that promoted resilience in disaster-affected areas (WB and UN, 2010).

Export diversification has the potential to increase the number of trading partners thus opening the benefits of cross-border trading to a wider range of national companies. Trading promotes revenues for the government, generates incentives for the development of the formal economy, and decreases the power of a predatory private sector (Mac Sweeney, 2009). Trading promotes the development of national value chains, which in turn can extend to smaller firms. It thus promotes the development of a formal and competitive MSME sector, supporting smaller firms to make linkages with larger firms (see following section on Market Linkages).

As well as protection through diversification, local markets engaging in active trading, especially with neighboring countries, build ties that can support post-disaster recovery. International markets can cushion the decline in demand of local markets affected by the disaster. Recovery strategies can capitalize on pre-disaster market linkages, as well as building new ones in light of post-disaster particular needs. For instance after the Indian-ocean tsunami, Starbucks was quick to buy coffee from Aceh and donate \$2 to aid agencies, helping the recovery effort for every pound of Sumatran coffee sold. Grassroots organizations working with coffee producers used Fair Trade as a strategy for getting the maximum benefits from international markets directly to producers in the region (Coffee Review, 2005).

## Direct Interventions

### *Market linkages and Value Chains*

**Issue:** *Vulnerability of MSMEs to natural hazards is accentuated by market isolation, which undermines diversification and accentuates dependency on few resources and customers*

#### **Policy Options/Measures:**

#### **Address livelihood recovery through locally driven value chain restoration/upgrade and the promotion of broader market linkages.**

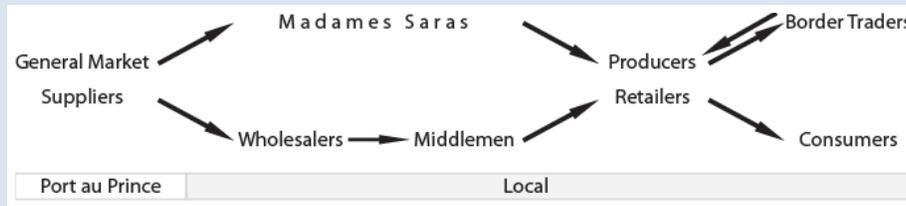
Value chain promotion can decrease dependency of MSMEs on their local market. Particularly important are relationships within the value chain with different larger firms that can diversify risk further. This can also allow for the possibility of MSMEs to 'move up' within the value chain and grow. MSMEs with more ties to larger firms tend to be less informal (Perry et al., 2007). By targeting specific supply chain interruptions using financial assistance, post-disaster local markets can be reactivated and local MSMEs can be prioritized as engines of local recovery (ProVention, 2009).

Large-scale innovative programmes aiming to upgrade value chains can, in principle, be drivers of a sector-wide restoration strategy (e.g. tourism) through the use of large investments and institutional leverage. However, these initiatives may work better when priority planning and decision-making process are devolved to a local level in order to ensure that local MSMEs can act as agents of recovery, and that medium-term benefits reach the broader community and do not increase pre-disaster disparities. Local governments are better placed to design and coordinate these programmes.

### Box 27: Improving the effectiveness of livelihood interventions through market analysis in Haiti

In June 2004 17 hours of continuous rains resulted in large landslides and floods in the south-east of Haiti, causing human losses and the destruction of houses and infrastructure. Oxfam conducted a market chain analysis to assess the impact of the disaster on local markets and identify ways of re-establishing them.

The first step was to identify and interview the actors who were trading key foods and non-food items considered essential for survival. They included local consumers, women who act as transporters between villagers and middlemen, 'Madame Saras' (women who traded goods between the capital and the rural areas), wholesalers, and retailers.



As a result of the floods:

- Wholesalers lost their transport and storage facilities when trucks were damaged and storehouses destroyed. This left them with debts to pay and an impossibility of obtaining further credit.
- Middlemen, retailers, border traders, and the Madames Saras, lost their pack animals (used for transport) and their stocks.
- Consumers lost both assets and income-earning opportunities, thereby reducing their purchasing power.
- General market suppliers were not affected.

Different interventions were used to assist most actors in the value chain:

- A 'Cash-for-Work' (CFW) programme helped 500 of the poorest consumers to earn income while rehabilitating the damaged roads that connected the communities with the local markets. Additionally, food vouchers for locally-available rice were distributed to food insecure families until food supplies normalized.
- 250 Madame Saras and women border traders received cash vouchers (circa \$115) to rebuild their petty trade businesses by purchasing the necessary assets from local retailers.
- 500 farmers received vouchers (circa \$130) to purchase livestock and seed to sow the next season's crops. Fairs were organized in the communities in order to secure adequate supply and to facilitate the flow of market information (e.g. prices, availability, quantities).
- Assistance to wholesalers was not considered necessary, because these were among the wealthiest in the community.

Sources: Oxfam, 2005. <http://www.alnap.org/resource/3360.aspx>, last accessed 03/05/2013

### *Business Associations and Community Groups*

**Issue:** MSMEs, particularly informal, may have less interaction with public and civil society institutions

### **Policy Options/Measures:**

### **Promotion of BAs and community networks as key informants and communicators of DRR and recovery strategies**

BAs have the potential to become an axis of DRM strategies for MSMEs. They act as an important source of information for MSMEs on government DRM programmes and on private sector-led DRM (e.g. BCP). BAs can also help MSMEs to establish market linkages with bigger firms in the same

industry, with firms outside of local markets, and with a broader customer base. This can help ease an over-reliance of MSMEs on local markets for their supplies and customers. BAs can help MSMEs find information about financial products and support communication between insurance providers and customers. Informal MSMEs tend to be less engaged with BAs or find them unhelpful, significantly reducing their potential to implement effective DRM strategies (Hernandez Montes de Oca, 2011).

BAs help build social capital, an important asset in times of hardship. They have also a louder voice in their interaction with government and can represent the previously marginalized. In the case of MSMEs, informal BAs can become interlocutors with disaster management institutions, be recipients of information on BCP and adequate DRM practices (Canada NRT, 2012; Hernandez Montes de Oca, 2011; Box 23), and promote home and business infrastructure improvements.

BAs and community groups can also serve as spaces for assessment and knowledge sharing in DRM, particularly real and practical experiences of dealing with disaster. As seen in Chapter 2, experience with disaster risk is an important determinant of better DRM practices. Maximizing this information-sharing can help fill the knowledge gap of MSMEs not previously exposed to disasters. BAs have been instrumental in ensuring that recovery programmes serve the interests of local MSMEs. They also lead programmes themselves, such as the Idle Machine project to respond to the GEJE (Box 14). It is therefore crucial for governments to include BAs and other private sector actors in post-disaster recovery, as they are in a position to complement planning and implementing processes with insiders' knowledge. Effective inclusion should start during pre-disaster by fostering spaces for dialogue around DRR.

Community networks such as cooperatives can help strengthen social capital in vulnerable communities. These groups can protect the interests of local businesses by developing adaptive measures (e.g. local construction projects) and helping coordinate collective action during post-disaster response (cleaning debris) and recovery (returning of temporarily relocated communities). Women's associations can ensure that women's perspectives, experiences and priorities are integrated into DRR projects as well as post-disaster recovery policies and programmes.

### *Skills, training and employment*

***Issue:** MSMEs are likely to employ less 'employable' workers with lower levels of education, social protection, and often belonging to particularly vulnerable groups.*

### **Policy Options/Measures:**

**Emergency employment schemes respond to the needs of the target population and the local context. Enterprise recovery programmes provide comprehensive support packages for target groups (e.g. women, youth)**

Well-established safety nets can be used in post-disaster response to support aid distribution and provide appropriate, income-generating opportunities such as emergency employment in response and recovery stages. These safety nets can support MSMEs' recovery by providing the necessary income to recover as well as supporting entire communities to return/stay in disaster-affected areas and engage in livelihood recovery processes.

Emergency employment can support MSMEs' recovery through different means:

- a) By facilitating market linkages through debris removal, road rehabilitation and other infrastructure projects
- b) By providing income to affected communities which can support demand for local products
- c) By providing employment to vulnerable workers for which business restoration is slow (e.g. those in NRM industries)

Emergency employment schemes can also be linked to microfinance products (savings and micro-insurance) in order to build future resilience and promote investments in new business (UNDP, 2013d).

Income generating programmes, aimed as safety nets, need to be sensitive to local skills and needs in order to maximize skills building when possible. Linking emergency employment to skills development should be explored at the early stages of a recovery programmes (Wiles et al., 2005), ideally during pre-disaster, in order to more easily bridge the transition from emergency relief to livelihood recovery.

Specific enterprise recovery programmes can become more effective when tools such as cash, in-kind and technical support are combined and adapted to the target population. Offering apprenticeships and skills development programmes for the young can increase the possibility of entrepreneurial activity. Linking pre-disaster microfinance initiatives to business recovery/development can be particularly relevant to female entrepreneurs who are often the biggest clients of MFIs.

### **Design skills development programmes tailored to the needs of MSMEs workers and entrepreneurs (e.g. BCPL, financial literacy)**

Knowing the MSME sector in a community allows for a targeted capacity building that can prove helpful in risk management. For instance, skills development programmes targeting informal construction MSMEs can help introduce anti-seismic standards. The Hurricane Resistant Home Improvement Programme in St. Lucia provides an example of an interesting programme approach: informal builders were trained in storm-resistant building practices, loans for home improvements were made available, and inspection of results promoted enforcing of building standards (OAS, 2003).

Recovery strategies can maximize the potential of MSMEs support to local recovery by complementing financial assistance with technical support on business management. Apart from ensuring business survival, technical assistance to entrepreneurs can support literacy on adequate DRM practices promoting a more resilient community. BAs have an important role in ensuring that training programmes for MSMEs are relevant and committed to medium-term recovery.

### *Microfinance*

**Issue:** *MSMEs have difficulties in accessing credit and other financial instruments that could contribute to risk management.*

### **Policy Options/Measures:**

**Identify gaps in risk management tools available to the MSME sector and promote micro-credit, investment of remittances, savings groups and micro-insurance as effective DRM and livelihood recovery tools.**

MSMEs usually resort to informal strategies to cope with disaster risk. Borrowing money from informal sources does not necessarily result in more favorable terms (informal money lenders usually charge substantially higher interest compared to formal sources) but it does suggest that formal channels are not designed to cater for the needs of MSMEs. Understanding the barriers to accessing financial resources that MSMEs face can contribute to designing better programmes.

Micro-credits and remittances are known to have been used for informal dwelling improvement in different contexts with positive results (McIntosh et al., 2006). Even more interestingly, there seems to be a stronger, more consistent impact of remittances versus microfinance, in the home improvements of walls, roofs and land (McIntosh et al., 2006). Whether remittances motivate

improvements or they are received respectively, once households have made the decision to finance them cannot be ascertained. What is clear is the potential role of remittances in long-term investment, and not only short-term consumption as traditionally believed.

Given the fact that informal MSMEs can often be home-based family businesses, these programmes can have a direct impact on vulnerability reduction of MSMEs associated with physical working conditions. Policy makers could proactively promote home-improvement programmes tailored to MSMEs participation in microfinance programmes or investment of remittances.

Asset accumulation of MSMEs is a double-edge sword as a DRM strategy. On the one hand, productive assets support business performance and make it easier to engage in more competitive markets. Assets can also serve as collateral for further investment and productivity gains. But they are sub-optimal risk management mechanisms if they are exposed to hazards; they can be wiped out by a disaster and, if not insured, leave the owner with no means of recovering their livelihood.

Risk transfer is essential for MSMEs resilience to disasters. Although micro-insurance is a relatively new area whose efficacy is yet to be up-scaled and documented (Krishnamurty, 2011), creative options for MSMEs need to be explored locally. Fonkoze, a MFI in Haiti, developed a micro insurance product, the Kore W, to protect its affiliates from catastrophic losses such as those derived from the 2010 earthquake (Mercy Corps, 2012). The Kore W has already showed results by helping more than 12,000 Fonkoze affiliates -mostly female entrepreneurs- recover from Hurricane Sandy (2012). Contingency savings and community-pooled insurance should also be explored as options for optimal risk transfer mechanisms.

#### *Targeted Support*

**Issue:** *Targeted support does not always respond to the livelihood restoration needs of MSMEs and can be driven by donor supply rather than demand of the affected communities.*

#### **Policy Options/Measures:**

**Link in-kind support with productive assets and livelihood restoration. Use cash and in-kind support according to context-specific needs.**

Despite the vast potential of targeted support from private donors or NGOs to reach beneficiaries promptly and more directly than government or market systems, there are various sustainability issues with this type of aid. Targeted support needs to respond to the needs of the affected, to be adequate in relation to market conditions in affected areas, and to include considerations on livelihood recovery, as opposed to survival and relief, if it is to be considered a true driver of MSMEs' recovery.

Demand-based in-kind transfers can be successful in helping restore manufacturing sectors in disaster-affected communities (Box 14), given the difficulties of finding productive inputs and equipment in such areas.

For areas in which markets remain relatively functional, priority should be given to the prompt resuming of MSMEs operations through cash support. Business owners are better served by flexible and swift access to financial assistance that can help them personally recover first, then allocate attention to business recovery. In these contexts, in-kind transfers that could eventually distort local markets should be avoided.

Targeted support, whether in cash or in-kind, should be seen by all stakeholders as a first step in achieving sustainable recovery and not just as a survival strategy. The combination of different instruments to restore local markets (Box 27) can help focus the attention on value chains rather

than on particular groups in isolation and can facilitate exit strategies from this type of support. The evolution of certain instruments (e.g. cash assistance for immediate business recovery and soft loans for further investments/upgrades) can also help policy makers think beyond relief and response and towards resilience building among MSMEs. Finally, technical advice is a crucial accompanying tool for targeted support in order to help beneficiaries make the right decisions for sustainable business recovery.

## Chapter 5: Conclusions

The study has analysed the variables affecting the impact of disasters on MSMEs, describing potential tools to support MSMEs' recovery and making recommendations on how to help MSMEs build resilience before and after disasters. It has also addressed some of the fundamental socio-economic issues that could prevent MSMEs from acquiring adequate DRM strategies. The following conclusions summarize the findings and identify areas in which further research is needed:

- **Acquiring knowledge about MSMEs** is a crucial element for policy makers in order to help MSMEs be effective drivers of resilient communities. Yet this is one of the least explored areas in literature about disasters. Most evidence on MSMEs and disasters comes from exposure to intensive risk, leaving a gap in the appreciation of MSMEs' adaptive capacities, and the consequences of recurrent exposure to extensive risk. There is also little evidence on failed MSMEs and to what extent disasters were drivers of this failure. More research is needed to identify how decision-making processes about closing businesses, changing livelihood strategies or changing location take place after disasters, and how successful these decisions can be in decreasing the vulnerability of their community. Additional research on gender disparities and entrepreneurship in the context of disaster risk could also help identify and prevent further biases in recovery support. Ultimately, all this key evidence could serve as a basis for further analysis on how resilience can be built among MSMEs before disasters strike.
- In the event of disasters, direct response and recovery efforts need to prioritize the restoration of basic services in order to **minimize disruptions to business continuity**. It should also include livelihood recovery as a fundamental component of housing and infrastructure reconstruction. Coping strategies can be strengthened by: a) promoting a preparedness culture that prompts MSME owners to have contingency savings to recover from disasters; b) providing timely support and minimizing the financial burden of MSMEs accessing recovery loans; and c) creating or improving systematic ways of supporting MSMEs in order to avoid intensifying financial shocks to business owners and their networks.
- **Assessing the state of markets in disaster-affected areas** can inform decisions on how effective, targeted support can be provided. For instance, in contexts where markets remain functional grants for the swift recovery of the retail sector can work, while in the event of severe market disruptions which decrease the effectiveness of cash assistance, more complex, in-kind asset-recovery programmes for the manufacturing sector may be called for. Technical assistance can effectively complement cash or in-kind support.
- **A solid institutional framework that takes charge of DRR**, with clearly defined roles and responsibilities of central and local governments and agencies, can better implement strategies that support the recovery of MSMEs and their communities. Central level leverage, multi-stakeholder coordination and resources along with local-level prioritization of interventions and investments can maximize the impact of post-disaster recovery in restoring the livelihoods of affected communities.

- A **culture of disaster prevention rather than response** should be pursued by governments at all levels. Having a DRR legislation that rewards investments in DRR and promotes 'softer' DRM measures, such as BCP, can help MSMEs engage in adequate DRM practices and serve as agents of community recovery in the event of disasters.
- Resilience of MSMEs to disasters is influenced by the **regulatory environment** in which they operate. Particularly in the case of informal MSMEs, governments' positions towards informal settlements, land management policies and post-disaster recovery strategies (e.g. upgrading of industries such as tourism, reconstruction models) can limit the capacity of MSMEs to restore their livelihoods and compromise the achievement of inclusive recovery. Having adequate regulatory frameworks in place before disasters can speed up the design of effective and inclusive disaster response and recovery programmes that include MSMEs in these processes.
- Acknowledging that **informality** is the illustration rather than the cause of the disconnection between regulation and enforcement can open the door to developing DRM strategies that address vulnerabilities of informal MSMEs. Adequate urban planning and slum upgrading, social protection provision regardless of employment status and financial products for those outside traditional financial markets can all help address spatial vulnerability, prevent individual shocks, and promote investments in DRM by MSMEs.
- Policy makers need to make **livelihood recovery a priority** during the response phase by providing alternative operating locations and restoring lifelines and basic infrastructure, thus minimizing closure times and increasing the chances of MSMEs survival,.
- **Reconstruction brings several opportunities** for community recovery beyond mere physical restoration of infrastructure. It can directly increase business opportunities for local MSMEs, increase employment and promote social recovery through local decision-making processes. Yet often these opportunities are lost through large reconstruction contracts to outside firms that can crowd out local providers and employment. Articulating the role that local MSMEs have in reconstruction efforts should be done before disasters strike in order to guarantee maximum impact of reconstruction as a livelihood recovery strategy.
- Governments should consider **the private sector a vital ally** in facing the challenges posed by disasters. BAs are key partners in the design of livelihood recovery programmes, as they can provide insiders' knowledge for programmes that effectively meet the needs of MSMEs. Large firms have also been instrumental in supporting MSMEs' recovery through contracts, skills development and employment, within a framework of CSR. Fostering this type of engagement should be proactively pursued by governments during pre-disaster. MSMEs that are financially stronger, have wider market linkages and diversified clients and suppliers, can better withstand disasters and serve as agents of community recovery.

The findings and suggestions elaborated on in this study highlight the creation of conditions before disasters and the provision of adequate support after disasters necessary to reinforce the resilience of small businesses. Along with appropriate incentives allowing MSMEs to play an active role in the recovery efforts, MSMEs will stand less chance of being casualties of the disaster and more chance of engaging as effective agents of community recovery.

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## Annex 1 Disaster Risk Reduction – Selected terminology (UN ISDR 2009)

**Disasters:** serious disruptions to community activities involving widespread human, material, economic or environmental losses and impacts that exceed the ability of the affected community or society to cope. The extent of a disaster is defined by the exposure to the hazard, the community's vulnerability and its ability to cope with the potential negative consequences.

**Vulnerability:** characteristics and circumstances that make an individual, household or community susceptible to its damaging effects of a hazard. UNDP (2004) estimates its vulnerability to disasters by analysing different socio-economic variables that convey the extent to which lives and livelihoods are damaged by different natural hazards. For instance, variables such as unemployment, percentage of urban population, population density and inflation were considered to be determinants of vulnerability to floods and earthquakes.

**Hazards:** dangerous phenomena or human activities that can cause loss of life and livelihoods, as well as economic and social disruption.

The present study focuses on natural hazards and refers only to man-made activities when they increase the vulnerability of individuals, households, systems or communities to disasters. In addition, impact on human life will be analysed from the scope of affected livelihoods and not from direct life losses due to disasters.

**Disaster Risk:** potential human and economic loss that is caused by the occurrence of a hazard. It involves the probability of occurrence as well as its potential adverse consequences of its occurrence. UNDP (2004) calculates risk as a function of hazard occurrence probability, and by the size of the population at risk and vulnerability. If one of these variables is zero (e.g. there are no people living in a disaster-prone area), then there is no risk.

**Extensive risk:** exposure to persistent and repeated hazards, usually floods, landslides, storms or draughts. Risk accumulates creating localized disasters of low or moderate intensity and affecting mainly the rural or urban population in vulnerable locations.

**Intensive risk:** exposure of large concentrations of people and assets, usually cities, to intense hazards that can bring catastrophic consequences. Earthquakes, volcanic eruptions, heavy floods, tsunamis and major storms are example of hazards that can expose the vulnerability of cities to intense risk.

**Disaster Risk Reduction (DRR):** 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.

**Disaster risk management (DRM):** practice of systematically managing uncertainty and minimizing the potential harms associated with the occurrence of a hazard, this includes having the skills and ability to implement effective DRR. The ultimate goal of DRM is to build resilience – ability to resist, absorb and recover from hazards- within the community or system practicing it. To illustrate how all these variables act together, it is useful to look at the example of earthquakes. Countries in earthquake prone areas tend to have fewer deaths in the event of an earthquake than countries with lower earthquake risk. This can happen because countries with more risk exposure tend to develop stronger DRR systems (Williams 2011).

**Livelihoods:** activities, assets (both material and social) and capabilities required for a living.