Building MSME Resilience:
A guidebook for GIZ to a holistic approach on MSME resilience in Asia
# Table of contents

Table of contents ........................................................................................................ ii
Preface ....................................................................................................................... iv
1. Introduction ............................................................................................................ 1
2. Using this guidebook ............................................................................................ 2
   2.1. Understanding resilience .............................................................................. 2
   2.2. Guidebook approach .................................................................................... 3
3. MSME segmentation ............................................................................................. 7
   3.1. Understanding MSMEs ............................................................................... 7
   3.1.1. Existing definitions ............................................................................... 7
   3.1.2. Defining MSMEs to understand their risks and needs ......................... 10
   3.1.3. Segmenting by value chain .................................................................. 14
   3.1.4. Additional parameters for segmentation .............................................. 14
4. Measuring MSME resilience and needs ............................................................... 16
   4.1. Assessment options .................................................................................... 16
   4.1.1. Vulnerability analysis (Risk assessment) ............................................. 16
   4.1.2. Financial needs measurement framework ........................................... 20
   4.1.3. Disaster risk preparedness survey ....................................................... 24
   4.1.4. Disaster recovery .................................................................................. 26
5. Designing interventions ....................................................................................... 27
   5.1. Systems approach key in designing MSME resilience-building interventions .... 27
   5.1.1. System diagnostics .............................................................................. 27
   5.1.2. Systems practice methodology ............................................................ 28
   5.1.3. Value chain mapping .......................................................................... 29
   5.1.4. Building resilience interventions that focus on risk management and prevention ................................................................. 34
6. Emerging trends .................................................................................................. 38
7. Conclusion .......................................................................................................... 40
8. References .......................................................................................................... 42
Annexure: Data collection approaches .................................................................. 45
   8.1.1. Financial needs survey ...................................................................... 45

## List of tables

Table 1: Country comparison of MSME definitions ................................................. 10

## List of figures

Figure 1: Most common MSME definitions and worldwide average number of employee definitions ................................................................. 8
Figure 2: Obstacles most commonly cited by micro-businesses ............................ 11
Figure 3: Segmenting Malawi’s MSMEs ............................................................... 12
Figure 4: Potential segmentation of business insurance target markets ............. 13
Figure 5: Analysing MSME risk .......................................................................... 18
Figure 6: Timeline for recovery from external shock .......................................... 22
Figure 7: Value chain mapping..............................................................32
Figure 8: Information flows of soybean value chain.................................32
Figure 9: Mapping relationships and linkages ........................................34
Figure 10: Road transport and logistics value chain in Ghana.....................36
Figure 11: Potential decision path to plan intervention..............................40
Preface

The current COVID 19 pandemic has exposed the vulnerability of Micro, Small, Medium Enterprises (MSMEs) not only to Climate Change anomalies that exacerbate the impact of extreme weather events, but also to global health emergencies that interrupt value chains. All the more, strengthening the link between access to finance, Climate and Disaster Risk Insurance (CDRI), and Disaster Risk Management (DRM), demands more urgency and focus from all public and private sector stakeholders.

“Building MSME Resilience: A guidebook for GIZ to a holistic approach in MSME resilience in Asia” amalgamates the strategies, approaches and vital experiences of GIZ’s five initiatives on finance and CDRI in nine countries under the GIZ Integrated Climate and Disaster Risk Management (ICDRM) Framework.

It is our opinion that access to finance, CDRI and Disaster Risk Management (DRM) are symbiotic to maximize the impact of project goals, and sustain results in these times of uncertainty. MSMEs need fresh infusion of capital to grow business and at the same time, the support of risk financing products such as insurance, to protect assets and investments earned through business models that have gone through alterations to adapt and thrive in the midst of competition, risk, and global emergencies.

Climate Change has exposed business establishments to weather related risks, whilst COVID 19, albeit temporary, is forcing some establishments, particularly the microenterprises to close shop, thereby threatening to wipe-out achievements on poverty reduction through the years. Climate and Disaster Risk Insurance, and Finance are not independent one size fits all solutions for all the challenges that MSMEs face today, rather, when paired with disaster risk management through concerted and holistic design, presents a more robust approach in arresting exposure to various risks.

This guidebook shows the needed collaboration of design interventions under the GIZ ICDRM Framework and it has been the result of a fruitful and exemplary cooperation between the Financial Systems Development and Insurance (FSDI) WG and the Private Sector Development (PSD) WG in the context of the GIZ Sector Network (SN) Assets for Asia. We enjoin all colleagues in these various fields, public and private sector stakeholders, as well as MSMEs, to get acquainted and use these approaches in their operations.

We thank our GIZ colleagues for their all-out support during the preparation of this guidebook and the Challenge Fund under the Sector Network Assets for Asia that has made these interactions possible.

DR. ANTONIS MALAGARDIS
Program Director
GIZ Regulatory Framework Promotion of Pro-Poor Insurance Markets in Asia III (GIZ RFPI Asia III)
1. Introduction

**MSMEs important for key national objectives.** Micro-, small- and medium-sized enterprises (MSMEs) form the backbone of many economies globally. They contribute considerably to economic growth, employment and innovation. The IFC, for example, estimates that MSMEs account for 90% of businesses and are a source of more than 50% of employment worldwide (World Bank, n.d.). In the ASEAN region, MSMEs constitute between 88.8% and 99.9% of total enterprises and account for between 51.7% and 97.2% of total employment. MSMEs also account for between 30% and 53% of GDP for the ASEAN Member States and between 10% and 29.9% of exports (ASEAN, n.d.).

**MSME resilience critical.** The ongoing global COVID-19 crisis has, once again, highlighted the extreme vulnerability of MSMEs to exogenous shocks and risks. However, the pandemic is just one infrequent and specific risk. Many Asian MSMEs frequently face substantive climate and natural catastrophe risk, for example. Despite numerous interventions, though, the MSME sector in developing countries invariably fails to fulfil its promised potential. Most MSMEs show little or no growth, and failures in the early years of their founding are common (Nemaenzhe, 2010). The resilience of MSMEs is therefore a critical policy objective across developing countries.

**The aim of this guidebook.** This guidebook therefore proposes a consolidated and harmonised approach in order to understand, assess and build greater resilience among MSMEs across the seven Asian focus countries: Cambodia, India, Laos, Mongolia, Myanmar, the Philippines and Vietnam. This guidebook therefore draws heavily on the different approaches, frameworks and MSME-targeted interventions already developed by GIZ across the seven focus countries so as to detail a systematic approach to both understanding MSMEs' resilience (or lack of it) and designing interventions accordingly. Existing examples from GIZ’s programmes, together with some non-GIZ examples, are used to illustrate how interventions can be designed to build MSME resilience broadly, as defined above. The guidebook, therefore, necessarily outlines this approach at a high level but draws on practical examples and tools to illustrate how these can effectively be achieved.

**Structure.** The rest of this guidebook outlines the actions needed by private- and public-sector stakeholders to support MSME resilience in the seven focus countries in Asia:

- Section 2 begins with an in-depth discussion of the concept of resilience and how it is understood throughout this guidebook, which then leads into a more detailed explanation of the approach taken by this guidebook and how it can be applied.
- Section 3 explores the heterogeneity of MSMEs and the need to segment target groups carefully when considering appropriate interventions.
- Section 4 unpacks the various approaches to assessing and understanding MSME risks and needs as well as the considerations when selecting these frameworks.
- This leads to a discussion, in Section 5, that outlines the types of interventions used to support MSME resilience and the key steps to implementation.
- Section 6 concludes by presenting emerging trends, challenges and opportunities for MSME resilience.

---

1 Across 20 Asian (and Pacific) countries, 96% of enterprises are MSMEs and they make up 62% of the national labour forces (Asian Development Bank, 2015).
2. Using this guidebook

2.1. Understanding resilience

Defining resilience. Resilience is defined as the ability to recover from or adjust easily to misfortune or change (Merriam Webster, 2020). Gallopín (2006) describes enterprise resilience as an enterprise adaptative capacity and its ability to cope with, adapt to and recover from a disruption. Sanchis and Poler (2013) identify three main properties related to enterprise resilience: vulnerability, adaptative capacity and recovery ability. Many other, similar definitions of enterprise or MSME resilience exist in the academic and grey literature. What comes across consistently is that resilience encompasses both the ability of enterprises, and enterprise ecosystems, to adapt and to recover from shocks.

Unpacking resilience. Financial resilience, specifically, is defined by Carboni et al. (2019) as the ability ‘to meet large expenses that have resulted from an unexpected financial shock’. For individuals, resilience is largely driven by a stable source of income, together with financial services such as insurance, which are another important tool with which to build resilience in individuals (Sahler & Wiedmaier-Pfister, 2019). A parallel can be drawn with enterprises’ consistent access to markets, which is a critical driver of resilience, as is the use of financial services. Carson (2013) states that although financial resilience is crucial for SMEs to withstand shocks, both financial and non-financial mechanisms are available to help SMEs to achieve longevity and develop the ability to resist (and adapt to) shocks.

Building resilience at both the micro and the macro level. A key factor in considering the resilience of individual enterprises is the resilience of the system within which they operate. Any or all tools or mitigatory mechanisms at individual MSMEs’ disposal will be rendered irrelevant should the core functions and/or infrastructure of the ecosystem within which they operate fail. The continuing Covid-19 crisis highlights the real threat of this happening. For example, the closure of borders has caused major disruptions to cross-border trade throughout Asia (and the rest of the world) and some of the key infrastructure, such as logistics and transport providers, has struggled to survive the cessation of all operations (Stakeholder interviews, 2020). This vital systemic function needs to be rebuilt in order to enable cross-border MSMEs to function as they did pre-Covid-19.

However, at the same time, it is also important to consider resilience at a micro level and also the tools or interventions that can build the resilience of individual MSMEs. The assumption here is that the failure of the system or of key systemic functions is beyond the feasible scope of micro-level resilience mechanisms for most enterprises; however, the bulk of risks that do face MSMEs are at the micro-level and are specific to individual enterprises. The implication is therefore that the overall resilience of MSMEs has to be considered at two levels: the resilience of the individual enterprise and that of the system as a whole.

Resilience a holistic concept requiring a holistic approach. The implication drawn from these definitions and considerations of resilience is that to build MSME resilience effectively requires a comprehensive understanding of MSMEs’ context and risk. Effectively building resilience for enterprises requires interventions and supporting infrastructure that enable them to operate sustainably and effectively and considers
not only those mechanisms for MSMEs to respond to risks that have occurred, but also risk prevention and management. This requires a consideration of both financial and, often more importantly, non-financial support; and it requires resilience at both the individual and the enterprise level of the system itself to be taken into account.

**Box 1: ICDRM framework**

The Integrated Climate/Disaster Risk Management (ICDRM) framework is an approach to dealing with the risk and manifestation of climate-related disasters. It is characterised by a holistic perspective on the various components of risk management, namely:

i. Prevention of disasters and of new disaster risk  
ii. Retention and transfer of remaining (‘residual’) risk  
iii. Preparedness for inevitable disaster impact  
iv. Response to a disaster in order to protect people and assets and mitigate losses  
v. Rebuilding and reconstruction of the affected area in line with the principle of ‘build back better’

The emphasis of the ICDRM is on treating these aspects as integrated and overlapping. This approach differs from previous concepts in the disaster management paradigm that focused almost exclusively on response and did not pay significant attention to the opportunities to reduce the incidence or potential impact of climate disasters. The imperative to broaden this perspective comes from increases in exposure and vulnerability at a global level, linked to multiple concurrent trends such as climate change, population growth and the globalisation of supply chains (MCII 2017).

A further advantage of the ICDRM approach is that it enables the alignment of the DRM agenda, as exemplified in the Sendai Framework on Disaster Risk Reduction, with the climate change and sustainable development agendas, codified at a global level by the Paris Agreement and the Sustainable Development Goals respectively.

*Source: GIZ (2019)*

**GIZ’s ICDRM framework unpacks resilience more holistically.** The Integrated Disaster/Climate Risk Management (ICDRM) framework developed by GIZ (see Box 1) is therefore an important framework for understanding the complexity related to MSME resilience and the breadth of activities and interventions required to deal with it holistically. This guidebook therefore draws from the ICDRM framework throughout as a core underlying framework required to design and implement effective resilience-building interventions for MSMEs.

### 2.2. Guidebook approach

The topic of MSME resilience is therefore a complex one and, as explained in the previous sections, it is this complexity that has led to the varied perceptions of this concept in addition to the approaches to supporting the resilience of MSMEs in Asia. This complexity also means that achieving the objective of MSME resilience requires actors, such as GIZ, to explore and understand this complexity and the nuances of it in order to design interventions that make a positive contribution to MSME resilience without resulting in adverse unintended consequences. The approach in developing this guidebook was to begin
with gaining an understanding of the different GIZ-supported MSME-related initiatives across the seven focus countries: Cambodia, India, Laos, Mongolia, Myanmar, the Philippines and Vietnam. This was achieved through a combination of stakeholder calls to each of the country offices and a review of the relevant literature – of projects and research conducted, country policies and interventions. This offered the authors a unique perspective on the ways in which different regional and national GIZ programmes, country offices and staff are approaching the challenge of building MSME resilience (either implicitly or explicitly) through quite different approaches based on their starting points, programme objectives, approaches and measurable targets. This “helicopter” view revealed some interesting and relevant dynamics:

**Programmes often founded on a systemic view but focus narrows over time.** The initial design of most GIZ programmes and interventions is based on a systemic analysis, but as the programmes and interventions are rolled out, the focus is narrowed to specific objectives.

**Cross-pollination across programmes hugely beneficial to combat the implication of a narrower focus.** As this focus is narrowed, programmes can greatly benefit from cross-learning with complementary programmes and by applying tools developed by complementary programmes. A clear example of this dynamic can be illustrated by comparing the approaches of those programmes that work directly with MSMEs, such as the Promotion of Competitiveness within the Framework of the Initiative for ASEAN Integration (COMPETE) programme that runs across Cambodia, Laos, Myanmar and Vietnam (CLMV)\(^2\) with those programmes that work with relevant ecosystem actors, such as FSPs, to enhance the enabling environment for MSMEs, such as the Banking and Financial System Development Programme in Myanmar\(^3\). There is no doubt that both of these programmes do good work, but their respective narrow mandates and responses may be undermining the full extent of the impact that either could achieve.

- **The objective of the COMPETE programme is for CLMV countries to apply an** “investment-conducive and pro-competitive implementation of ASEAN agreements in the areas of ‘trade in services’ and ‘competition policy’” (GIZ, n.d.). The programme therefore focuses to a significant extent on export promotion and access to export markets for MSMEs in these countries. A special focus of the programme is improving human resource development systems through training MSMEs and the development of national portals to provide information and guidance to exporting MSMEs. These activities can play an important role in resolving some of the informational barriers for exporters.

However, the narrow focus on providing export information purely as a standalone public service may be a missed opportunity to integrate these functions with other service providers. For example, more direct interaction and linkages could be facilitated between the portal FSPs, such as insurance providers, that can offer solutions to ensure greater resilience and sustainability of these export MSMEs. Insurers generally have a very limited understanding of the challenges and realities MSMEs face and struggle to design products that offer real value to MSMEs. Accordingly, working with insurance providers to help them to understand and navigate the challenges facing exporting MSMEs may be of benefit to both parties. This is not intended as a criticism of the COMPETE programme; the authors admit to not understanding the nuances and constraints across all the focus countries.

---

However, the COMPETE programme does aim to enable cross-border trade in line with the ASEAN blueprint. The ASEAN blueprint also details a pathway towards harmonising financial services regulation and provision. The risks facing traders operating across borders is substantially higher than those domestic traders encounter as they must negotiate a range of new risks when crossing national borders, and there is often a lack of clarity regarding who holds the risk, such as for goods-in-transit, both when passing through customs and in the hand-off or delivery of those goods. Furthermore, the cross-border aspect makes it much more challenging to provide and access comprehensive financial services, because of the jurisdictional restrictions. Well-designed insurance offerings that can provide end-to-end cover, combined with proactive advice, guidance and monitoring, would seem to be of significant value to, and to increase the resilience of, the MSMEs targeted by the COMPETE programme.

- In contrast to the COMPETE programme, Myanmar’s Banking and Financial System Development Programme⁴ and the RFPI III (Promoting climate-risk insurance in three Southeast Asian countries) programme in Indonesia, the Philippines and Vietnam⁵ both focus primarily on supporting FSPs in designing and developing products for MSMEs. As with the COMPETE programme, these two programmes have the ultimate objective of supporting MSMEs’ resilience, sustainability and growth, but for the most part these two programmes do not work directly with MSMEs. Both of these programmes have been successful in working with FSPs (primarily banks and insurers) to adapt the focus and design of their products and, building on the bullet above, this expertise and approach may be of value and could be more deliberately incorporated into MSME programmes not focused on the financial sector, such as the COMPETE programme.

However, just as the COMPETE programme could benefit from learnings from and closer collaboration with the Banking and Financial System Development Programme in Myanmar and the above-mentioned RFP III programme, these two programmes may also benefit from greater use of the insights and tools from programmes such as COMPETE that work more directly with MSMEs. One thing that immediately stands out from an introduction to these diverse programmes is that the COMPETE programme, and similar programmes (such as the Innovation Promotion in Micro, Small and Medium-sized Enterprises programme in India⁶), working directly with MSMEs, typically disaggregate MSMEs by sector, value chain or cluster. They then tailor many of their activities and interventions accordingly – often targeting specific sub-sectors or clusters. There are many logical reasons for this: first, MSMEs across different sectors or engaging in a range of activities face diverse risks and have quite different needs (both financial and non-financial); second, different clusters, particularly in India, are typically geographically proximate; and, third, the way different value chains or ecosystems function and the core infrastructure, governance and systems in place can be quite different.

The implication is that it is often necessary for these programmes to tailor their interventions accordingly, both to ensure they deal with the actual needs of the MSMEs and also to design interventions that can effectively interact within the existing value chain or ecosystem structure and can effectively reach a sub-set of MSMEs through common aggregation points.

In contrast, the programmes that focus on financial services tend to view MSMEs as a single homogenous group, which means that the financial products developed for “MSMEs” may not effectively meet the unique and specific needs of different enterprises across different sectors, value chains or clusters. Adopting the segmentation

---

⁵ Available from: https://www.giz.de/en/worldwide/14131.html
⁷ These are discussed in further detail in the next section of the guidebook.
learnings from other GIZ (and non-GIZ) programmes may therefore enable the financial sector-targeted MSME interventions to have a greater impact and be more efficacious.

The guidebook aims to synthesise from GIZ’s existing approaches. This guidebook therefore draws heavily on the different approaches, frameworks and MSME-targeted interventions already developed by GIZ across the seven focus countries to detail a systematic approach to both understanding MSMEs’ resilience (or lack of it) and designing interventions accordingly. Existing examples from GIZ’s programmes, together with some non-GIZ examples, are used to illustrate how interventions can be designed to build MSME resilience broadly, as defined above. The guidebook, therefore, necessarily, outlines this approach at a high level but draws on practical examples and tools to illustrate the ways in which these objectives can be effectively achieved. This guidebook outlines three key elements to be considered when designing any intervention or approach to building MSME resilience:

- **Segmentation**: As a starting point, we emphasise the importance of effectively segmenting MSMEs, given the degree of heterogeneity across this sector, and provide further guidance on how this can be done.

- **Risk/needs assessment**: In line with global best-practice approaches to evaluating MSME risk and needs, we present useful assessment tools and practical guidance on how they can be used at each phase of the ICDRM framework.

- **Systemic approach to interventions**: This guidebook emphasises the need for, and the value of, taking a systems approach to understanding MSME resilience and designing effective solutions to mitigate MSME risk in the context of the broader ecosystem. The following sections discuss each of these elements in more detail, explaining why they are important, and present examples of how they can be implemented.
3. MSME segmentation

Building greater resilience for MSMEs naturally starts with building an understanding of their major risks and contextual realities, so that opportunities for building greater resilience can be identified. However, understanding the needs, risks and contextual realities of MSMEs arguably constitutes a greater challenge than for other target markets and therefore requires a more nuanced approach. MSMEs are highly heterogenous, meaning that the key risks they face, the way in which they function and what they need are necessarily markedly different. The effective disaggregation and segmentation of MSMEs is therefore crucial to building the nuanced understanding required to design tailored interventions that are effective in building MSME resilience.

This section provides some background to how MSMEs are typically defined across the globe and in the seven focus countries specifically before highlighting some of the challenges with these traditional approaches. It then discusses the most critical parameters and considerations for effectively segmenting MSMEs so as to achieve resilience objectives effectively.

3.1. Understanding MSMEs

The degree of heterogeneity across different types of MSMEs means that defining and segmenting them plays a crucial role when planning an intervention that adds value to the business, society and the economy. Yet there is no universal definition of MSMEs. The following sub-sections outline the existing definitions and discuss potentially more appropriate approaches to segmenting MSMEs to inform interventions that contribute to and build MSME resilience.

3.1.1. Existing definitions

Definitions vary significantly across countries; GIZ’s definition is in line with the international standard. More definitions exist than the global jurisdictions within which MSMEs operate. Among the 267 definitions used by different institutions in 155 economies, the most widely used (92%) for defining an MSME is the number of employees (Gonzales, et al., 2014). The GIZ has adopted the definition of classifying a business as “micro” if it has up to 10 employees, as “small” if it has up to 50 employees and as medium-sized if it has up to 250 employees. Figure 1 summarises the country definitions globally and the average number of employees per business size and region. The largest divergence between regions lies in the definition of medium-sized enterprises, with a range of between 50 and 499 employees.
In Asia, MSME scoping surveys conducted by GIZ across a number of focus countries⁸ appear to support the findings in Figure 2 regarding common MSME definitions. They reveal that the number of employees; asset size and annual turnover are the three most common criteria used to segment MSMEs in the region.

<table>
<thead>
<tr>
<th>Country</th>
<th>Micro</th>
<th>Small</th>
<th>Medium</th>
<th>Large</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cambodia</td>
<td>• Less than 10 workers; or</td>
<td>• 11 to 50 workers; or</td>
<td>• 51 to 100 workers; or</td>
<td>• More than 100 workers; or</td>
</tr>
<tr>
<td></td>
<td>• Start-up capital less than USD50 000.</td>
<td>• Start-up capital of USD50 000 to USD250 000.</td>
<td>• Start-up capital from USD250 000 to USD500 000.</td>
<td>• Start-up capital of more than USD500 000.</td>
</tr>
<tr>
<td>India</td>
<td>Engaging in the manufacture, production, processing or preservation of goods:</td>
<td>Engaging in the manufacture, production, processing or preservation of goods:</td>
<td>Engaging in the manufacture, production, processing or preservation of goods:</td>
<td>No legal definition.</td>
</tr>
<tr>
<td></td>
<td>• Investment in plant and machinery does not exceed INR2.5 million.</td>
<td>• Investment in plant and machinery is more than INR2.5 million but does not exceed INR50 million.</td>
<td>• Investment in plant and machinery is more than INR50 million but does not exceed INR100 million.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Providing or rendering of services:</td>
<td>Providing or rendering of services:</td>
<td>Providing or rendering of services:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Investment in equipment does not exceed INR1 million.</td>
<td>• Investment in equipment is more than INR1 million but does not exceed INR20 million.</td>
<td>• Investment in equipment is more than INR20 million but does not exceed INR50 million.</td>
<td></td>
</tr>
<tr>
<td>Laos</td>
<td>No legal definition.</td>
<td>• Annual average number of employees not exceeding 19; or</td>
<td>• Annual average number of employees not exceeding 99; or</td>
<td>No legal definition.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Total assets not exceeding LAK250 million; or</td>
<td>• Total assets not exceeding LAK1,200 million; or</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Annual turnover not exceeding LAK400 million.</td>
<td>• Annual turnover not exceeding LAK1 billion.</td>
<td></td>
</tr>
<tr>
<td>Mongolia</td>
<td>No legal definition.</td>
<td>Manufacturing:</td>
<td>Manufacturing:</td>
<td>No legal definition.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• No more than 19 employees;</td>
<td>• No more than 199 employees;</td>
<td></td>
</tr>
</tbody>
</table>

Figure 1: Most common MSME definitions and worldwide average number of employee definitions

Source: adapted from Gonzales et al., 2014

Data available for Cambodia, Mongolia and Myanmar.
<table>
<thead>
<tr>
<th>Myanmar</th>
<th>No legal definition.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing:</td>
<td></td>
</tr>
<tr>
<td>• Up to 50 employees; or</td>
<td>• 51 to 300 employees; or</td>
</tr>
<tr>
<td>• Up to MMK500 million in capital.</td>
<td>• MMK500 million to MMK1 billion in capital.</td>
</tr>
<tr>
<td>Labour-intensive manufacturing:</td>
<td>Labour-intensive manufacturing:</td>
</tr>
<tr>
<td>• Up to 300 employees; or</td>
<td>• 301 to 600 employees; or</td>
</tr>
<tr>
<td>• Up to MMK500 million in capital.</td>
<td>• MMK500 million to MMK1 billion in capital.</td>
</tr>
<tr>
<td>Wholesale:</td>
<td>Wholesale:</td>
</tr>
<tr>
<td>• Up to 30 employees; or</td>
<td>• 31 to 60 employees; or</td>
</tr>
<tr>
<td>• Up to MMK100 million in turnover.</td>
<td>• MMK100 million to MMK300 million in turnover.</td>
</tr>
<tr>
<td>Retail:</td>
<td>Retail:</td>
</tr>
<tr>
<td>• Up to 30 employees; or</td>
<td>• 31 to 60 employees; or</td>
</tr>
<tr>
<td>• Up to MMK50 million in turnover.</td>
<td>• MMK50 million to MMK100 million in turnover.</td>
</tr>
<tr>
<td>Service:</td>
<td>Service:</td>
</tr>
<tr>
<td>• Up to 30 employees; or</td>
<td>• 31 to 100 employees; or</td>
</tr>
<tr>
<td>• Up to MMK100 million in turnover.</td>
<td>• MMK100 million to MMK200 million in turnover.</td>
</tr>
<tr>
<td>Other:</td>
<td>Other:</td>
</tr>
<tr>
<td>• Up to 30 employees; or</td>
<td>• 31 to 60 employees; or</td>
</tr>
<tr>
<td>• Up to MMK50 million in turnover.</td>
<td>• MMK50 million to MMK100 million in turnover.</td>
</tr>
</tbody>
</table>
Philippines
- Asset size up to PHP3 million;
- 1 to 9 employees.
- Asset size from PHP3 million and 1 to PHP15 million;
- 10 to 99 employees.
- Asset size from PHP15 million and 1 to PHP100 million;
- 100 to 199 employees.

Vietnam
- No legal definition.
- SMEs have less than VND100 billion in capital and an annual average of fewer than 300 employees.

Please note that the above are the legal definitions in the countries and that in certain countries, like Mongolia, different stakeholders such as banks set their own definitions of MSMEs.

Sources: (UNDESA, n.d.); (Ministry of Micro, Small & Medium Enterprises, n.d.); (Lao National Chamber of Commerce and Industry, n.d.); (Solongo, 2017); (Central Statistical Organization & UNU-WIDER, 2018); (Senate of the Philippines, 2012); (Pham, 2017)

Table 1: Country comparison of MSME definitions

Other segmentation parameters more useful for understanding MSME needs. Whereas the number of employees is the most popular criterion used, it does not usually lend itself naturally to the formation of meaningful segments for understanding the specific risk profiles of MSMEs or developing targeted solutions to build resilience and meet their needs. For example, a business with seven employees might not have a risk profile that is significantly different from the risk profile of a business with 14 employees. However, a business with just one employee (the owner) most likely has a completely different risk profile from that of a business with five employees. This even though the two enterprises in the first comparison fall into different MSME segments, while the enterprises in the second comparison fall into the same segment in most countries.

However, MSMEs are highly heterogenous by nature and clustering them can be a challenge. If the traditional parameters of segmentation are not sufficiently useful, then what are the most appropriate alternatives? There are many options: MSME can be segmented by size, economic sector, country, region, asset value, economic conditions, political stability and many more factors, all with the potential to provide some insight into their resilience and needs. However, the next section discusses some of the approaches to segmentation that offer the greatest potential for understanding MSMEs' risks and informing interventions that build their resilience.

3.1.2. Defining MSMEs to understand their risks and needs

Personal and business needs are often blurred in micro-businesses. A first segmentation to consider is the difference between personal and business insurance needs. This is particularly relevant in the micro-business space. Demand-side research across four countries identified the primary risks for most self-employed individuals or small businesses to be personal rather than business-driven. The most front-of-mind risks were an illness in the household and the risk of drought or poor rainfall (see Error! Reference source not found.). This suggests different needs for those MSMEs that strictly distinguish between personal and business interests and risks, and those where the line between personal and business is less clear-cut.

**Figure 2: Obstacles most commonly cited by micro-businesses**

*Source: FinScope Laos, 2015; Nepal, 2015; Myanmar, 2018; Cambodia, 2015*

**Ability and motivation may inform resilience needs.** Research on businesses in emerging markets has found substantive differences between entrepreneurs who have a business out of necessity (in the absence of formal job opportunities) and those who aspire to have businesses. This is closely correlated to the disaggregation discussed above: those operating out of necessity typically view their business purely as a means to earn some form of income to sustain their livelihoods. These business owners therefore tend to view business and personal expenses, finances, needs and risks as interchangeable. In contrast, those operating out of aspiration are far more likely to see their business as something independent and are more likely to distinguish between personal and business. An additional factor to consider in the approach taken by the business owner, and also strongly correlated to success and business growth, is the level of skill of the business owner. Box 2, below, illustrates how these two parameters can possibly be used to distinguish between MSMEs; it also illustrates the substantive differences that can exist between these different types of MSMEs.

**Box 2: MSME segmentation in Malawi**

The figure below presents a segmentation of all the enterprises captured in the MSME FinScope survey conducted in 2012 along these two parameters: aspiration to start (and grow) a business and level of skill, proxied by education level.

The segmentation of Malawian MSMEs shows that “driven achievers” (defined as those with a higher education and motivation) have by far the highest income, employ more people and are seven times more likely to have insurance than “survivalists” and “struggling go-getters”.

While they predominantly still fall within the formally defined micro-business category (on average employing fewer than two employees), driven achievers may be able to engage better with financial resilience solutions, are more likely to afford them and recognise the importance of these solutions order to achieve their aspirations. This group are also likely to differentiate between business and personal risks and are likely to have the greatest potential for future employment generation, growth contributions and innovation.

**Potential segmentation: survivalist vs aspirational.** Based on the evidence outlined above, MSMEs can therefore be distinguished according to two fundamental differentiators:

- The extent to which they differentiate between personal and business insurance needs
- Their ability and motivation

On this basis we differentiate between survivalist and aspirational enterprises:

- **Survivalist enterprises**’ primary objective is to earn income to maintain their livelihoods. They run businesses because they typically have no alternatives. The line between proprietor and business is therefore likely to be blurred, resulting in survivalist enterprises often having insurance needs similar to individuals. Survivalist enterprises can therefore be considered as a sub-group of micro enterprises and across most developing countries they account for the vast majority of total MSMEs in an economy (usually 80–90% of total enterprises would be considered as survivalist). Survivalist enterprises will have little need for an enterprise-specific resilience solution. These enterprises are unlikely to make substantive contributions to employment, growth and innovation, but remain critical to sustain the livelihoods of a large number of people in developing economies.

- **Aspirational enterprises**, on the other hand, are usually slightly larger and most critically see their business as more than just a means of survival, but rather as having the ability to grow. From an insurer’s perspective, these enterprises therefore distinguish between personal and business expenses and risks and, unlike survivalists, would have the need for both enterprise-specific insurance

---

**Figure 3: Segmenting Malawi’s MSMEs**

![Segmenting Malawi’s MSMEs](image-url)
solutions and personal risk cover. Aspirational enterprises are more likely to contribute to growth and employment.

The implication is that different types of interventions may be required to cover the different risks faced by survivalist and aspirational MSMEs and that the objective of each may be quite different.

<table>
<thead>
<tr>
<th>Survivalist</th>
<th>Aspirational self-starter</th>
<th>Skilled self-employed</th>
<th>Sustainable startup</th>
<th>Historic established</th>
<th>Mid-size export</th>
<th>Mid-size or large national</th>
<th>Large multinational</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Informal business out of necessity</td>
<td>• Desire to grow informal business to formal business</td>
<td>• Formal freelancers: e.g. Uber drivers, plumbers and IT specialists</td>
<td>• Small number of employees</td>
<td>• Has grown to mid-size or bigger slowly over time; often a family business</td>
<td>• Participates in international value chains</td>
<td>• Higher number of employees and larger risk</td>
<td>• High number of employees, valuable assets and high turnover</td>
</tr>
<tr>
<td>• Lack of formal job opportunities/access to markets</td>
<td>• Mix of personal and business insurance needs but limited insurance premium capital available</td>
<td>• Not necessarily aspiration to grow</td>
<td>• Aim is to grow the business</td>
<td>• Can have small or larger numbers of employees</td>
<td>• Mainly business insurance needs (compulsory and voluntary), including employee benefits</td>
<td>• Business insurance needs including employee benefits</td>
<td>• Large number of employees, valuable assets and high turnover</td>
</tr>
<tr>
<td>• Personal insurance needs but no capital available to cover these</td>
<td>• Access to finance constraints</td>
<td>• Mix of personal and business insurance needs with capital available to cover premiums</td>
<td>• Mainly business insurance needs (key man insurance) but insurance premium capital trade-off with other expenses</td>
<td>• Both personal and business insurance needs including employee benefits</td>
<td>• Insurance premium capital available</td>
<td>• Insurance premium capital available</td>
<td>• Large business insurance needs, including employee benefits, through playing in international value chains</td>
</tr>
<tr>
<td>• Uses personal network for risk management</td>
<td>• Uses personal network for risk management</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Insurance premium capital available</td>
</tr>
</tbody>
</table>

**Figure 4: Potential segmentation of business insurance target markets**

*Source: Authors’ own*
Figure 4 above provides an example of a more granular segmentation of enterprises. The figure focuses particularly on disaggregating MSMEs and tailoring products and interventions related to insurance as an example of a specific resilience solution, synthesised from the existing literature.

This, however, does not imply that helping businesses to grow or graduate to the next business tier is desired in every context. The context and the relative impact on the economy of fostering survivalist businesses versus strengthening businesses who have the ability and aspiration to grow are beyond the scope of this paper and require further research.

3.1.3. Segmenting by value chain

Even having been framed as either survivalist or aspirational, there still exists substantial heterogeneity among MSMEs that should be taken into account. The nature of their business operations and the sector in which different MSMEs operate will manifest in markedly different contextual realities and risks faced. MSMEs operating in the logistics sector, for example, would face fundamentally different risks from MSMEs operating in the technology sector and they will have different levels of resilience to these risks.

Value chains can be defined very broadly as "socioeconomic systems that include all enterprises cooperating to serve a particular market" (Springer-Heinze, 2018). They consist of a series of stages that span every step in a system, from the inputs required to create a specific product to the final sale of that product to consumers. The term also refers to the totality of the actors involved (GIZ, 2015). As an analytical concept, value chains constitute a simplifying intellectual tool that facilitates decision-making and communication. The concept is often used in the literature on agricultural production and the provision of financial services in agriculture (for example, GIZ, 2015; IFC, 2012; The World Bank, 2018).

The mapping of value chains is valuable in distilling the most important cross-cutting risks faced and cross-cutting needs experienced by MSMEs. This can then be used to inform tailored and specific public-sector interventions and private-sector products targeted at groups of MSMEs with similar resilience needs. In line with the rationale that underpins the methodology for client-centredness, an understanding of the risks faced by MSME actors along the value chain informs and builds an understanding of MSMEs’ needs.

3.1.4. Additional parameters for segmentation

Beyond the segmentation parameters discussed above, and depending on the specific context and objectives, additional parameters may be important, such as age, geography and economic context.

---

10 Although similar in underlying concept, a supply chain differs from a value chain in that, whereas the former is linked to a specific individual company only, the latter includes the meso level of the economy (Springer-Heinze, 2018).


MOD=AIPERES.

Disaggregating by geography. Grouping MSMEs along geographic lines can be a particularly important and useful segmentation approach in cases where natural disaster or climate risk is a salient issue in the region in question and therefore likely to affect the enterprises in the area in a similar way. For example, MSMEs located in a flood plain are likely to face similar risks and require similar support should the area flood. Targeted interventions could then be developed to cater specifically to MSMEs in this area, increasing the value and efficacy of these interventions for MSMEs. However, this parameter may not be as useful for interventions targeted at the financial resilience of MSMEs as this resilience is not necessarily determined by geography.

Disaggregating by assets or turnover. The value of an organisation’s assets or its annual turnover are also common parameters used to segment MSMEs. Each of the parameters has its own limitations, however. For instance, volatility in annual turnover may lead to a misclassification of a medium enterprise into small business when turnover falls. Perception-based surveys are limited in accurate reporting of income or turnover weakened by human bias and memory inaccuracy. Sectoral differences in the capital intensity of operations also makes the use of total assets as a basis for classifying businesses by size problematic. Businesses that use capital-intensive processes will be segmented into higher-size categories whereas those that use less capital-intensive processes are likely to be segmented into lower-size categories.
4. Measuring MSME resilience and needs

Designing effective interventions to build MSME resilience naturally first requires an understanding of the risks and challenges faced by MSMEs. This section therefore builds on the previous section. Section 3 explained how the different needs and risks differ substantively across MSMEs, given the high level of heterogeneity between these enterprises. Segmenting them is therefore a crucial first step – to identify subsets of MSMEs with similar risk profiles. This section then discusses approaches and tools that can be used to assess and measure the resilience needs of these MSMEs sub-groups and to evaluate the ways in which MSMEs’ risks and needs affect their resilience in the face of shocks. Section 5 then discusses how interventions can be designed accordingly.

4.1. Assessment options

A number of tools are available to assess the scale, nature and urgency of MSME resilience and needs as a way of informing the development of fit-for-purpose interventions that most effectively serve these organisations. As discussed in depth in section 2, resilience is a holistic concept. Assessing the level of resilience and the resilience needs of MSMEs requires some consideration of all the components of resilience. As stated in Box 1, the ICDRM is a critical framework for considering the various stages that need to be considered when assessing resilience and ultimately developing interventions.

This guidebook provides insight into three possible tools that could be implemented to assess resilience. Given the holistic nature of resilience and the fact that it needs to be considered at both the individual and the systemic level, using multiple tools together to assess the resilience of given MSME segments will often be optimal. This section also explains which of the different stages of the ICDRM framework are assessed by each tool.

4.1.1. Vulnerability analysis (Risk assessment)

Box 3: Prevention phase

An essential phase at the beginning of the ICRM approach, the Prevention phase starts out by assessing the current situation. Risk assessment, impact analysis and disaster risk management (DRM) performance analysis are performed, followed by integrating preventive measures into policies. The ICRM approach will devise risk-informed measures and investments, while at the same time ensuring their legitimacy, comprehensiveness and effectiveness.

Source: MCI & GIZ (2019)
4.1.1.1. What is a vulnerability analysis?

The SME vulnerability analysis is a systematic analysis method for identifying hazards and documenting the risks related to an enterprise’s activities and operational environment, and for planning risk control measures (IOSH, 2002).

In the analysis, a company’s activities are divided into main categories and sub-categories. The hazards related to each sub-category are examined through examples. MSME vulnerability analysis is not a rigidly fixed checklist that describes all threats in advance; rather, it aims to help MSMEs make their own survey of the hazards related to their operations with the aid of the examples provided.

With the help of MSME vulnerability analysis, an enterprise obtains a clearer picture of both the risks that threaten its operation and the possible ideas and tools that inform mitigation strategies. For the purposes of the vulnerability analysis, company operations have been divided into six areas:

- Personnel
- Property and interruptions
- Operational prerequisites
- Organisation of operations
- Stakeholders
- Business economy

The vulnerability analysis takes a similar approach to the Risk Assessment tool implemented by GIZ in Pakistan. This tool incorporates a hazard analysis, vulnerability assessment and impact estimation as part of its DRM approach.

4.1.1.2. Why use it to assess the prevention phase?

The MSME vulnerability analysis is developed in cooperation with MSMEs. It has been observed in practice that this method often helps to reveal problems that can easily be eliminated if control measures are taken. Many control measures can be implemented quickly and at reasonable cost. Some problems, however, may require further analysis, planning and investment.

During the Prevention phase of the ICDRM approach, this tool can be used to assess internally the current situation facing MSMEs, after which clear, risk-informed disaster prevention and mitigation measures and investments are created.
4.1.1.3. How to implement it

Figure 5: Analysing MSME risk

The SME vulnerability analysis is a rough risk management tool that comprises the following phases:

1. **Identify hazards**

The identification of hazards is the starting point of risk management. Unidentified hazards cannot be managed. In the MSME vulnerability analysis, hazards are examined based on a risk chart. A one-page description can be compiled for each of the risk chart’s sub-categories as an aid to identifying the hazards and planning the control measures.

Once the identification phase has been completed, evaluating the need for the control measures to be taken is based on the following classifications:

- **No risk.** The risk is so small that it has no significance to the company, or the described problem is not at all related to the company’s field or its operations. “This is not a significant risk in relation to our activities.”

- **Risk under control.** The issue has been a significant risk to the company, but it is under control at the moment. The consequences or probability of the hazard has been reduced. The company has introduced a safer system, for example, or the probability of the event occurring has been minimised as much as possible. “We are aware of the risk and the issue has been taken care of.”

- **Must be taken care of.** The risk in question is significant and it requires further examination or immediate control measures to be taken. These risks may previously have caused significant damage to the company or they may do so in future. You should also examine risks that are not under your company’s direct control, such as new legislation or taxation requirements. It is always possible to be prepared for these risks, too, and changes in circumstances related to them should be monitored. “Further examination is required and the issues must be taken care of.”

The causes and consequences of problems raised during the evaluation can also be written down. For risks that are considered to be under control, MSMEs can write down the reasoning behind the evaluation. All the problem areas that have been marked as requiring control measures are later considered in the Risk Management Control Measures: Planning, Implementation and Review section.
2. **Assess and prioritise risks**

Hazards or problems that were marked “Must be taken care of” during the hazard identification process are examined at this stage.

When hazards are systematically identified, it is quite common to find so many that it is not possible to take care of all of them – at least not immediately. From the point of view of effective risk management, it is important to identify the problems that most urgently require control measures to be put in place. In order to evaluate the magnitude of a risk, it is necessary to examine the causes and consequences of the hazard in detail. These issues have often already been discussed when the hazards were first identified.

In order to evaluate the magnitude of a risk, the extent and severity of the consequences of the hazard have to be analysed. This magnitude then informs the urgency and priority of the risk management control measures needed. The magnitude of a risk depends on two factors:

- **Probability**: The more often or more likely it is that a hazard occurs, the greater the risk.
- **Consequences**: The greater the loss or the more serious the consequences a hazard can cause when it occurs, the greater the risk.

Risks can be assessed according to many different scales. For example, the magnitude of a risk can be expressed in words such as “trivial” or “intolerable” or in numbers, from 1 to 5. Ultimately, assessing risk magnitude serves to direct and prioritise risk management control measures correctly.

3. **Manage risks: plan, implement and review control measures**

Not all hazards can be eliminated, so implementing the control measures for those that remain must be prioritised according to the level of risk, with the highest risks being tackled first. When planning risk management control measures and their schedules, it is worth thinking about how these can be integrated into the company’s other activities, for example future maintenance work, investments, training events and employee arrangements.

Identified hazards can be managed in a variety of ways. The primary management aim is to prevent the occurrence of accidents or to reduce their consequences. Some key methods of risk management are:

- **Avoiding risk.** Avoiding risk is not always possible and can often be achieved only if a company refrains completely from the activity in question. The risks related to a dangerous chemical, for example, can be avoided by changing to a safe chemical; the risks of export activity can be totally avoided by operating only in the domestic market.

- **Reducing risk.** Reducing risk is an essential part of risk management. Influencing the probability or consequences of an event can reduce a risk. In other words, you have to implement control measures so that the hazard in question occurs as rarely as possible or that the consequences are as small as possible – or preferably both.

- **Transferring risk.** A risk can be transferred to another party by agreement. Typical of this are transportation and subcontracting agreements in which a contract can be entered into with a reliable and professional company. Insurance is also an option.

- **Retaining risk.** Risks are a part of business activity. Certain risks are retained and any losses are absorbed by the company (this can happen if risks are not fully identified).
A common example of retained risk is the ‘excess’ that an insured party agrees to pay—this means that they retain the risk that is below a certain monetary value (i.e. the excess).

This tool can be a valuable addition to the MSME resilience toolkit as it enables users to draw key insights from MSME reports, a crucial ingredient in developing relevant solutions for these organisations. Furthermore, the tool can be reapplied after an intervention has been implemented in order to gauge the impact of the product or service in fostering resilience.

4.1.1.4. Country case studies

Across the seven Asian countries considered in this guidebook, the Prevention phase of the ICDRM approach has been adopted and implemented with varying degrees of success. The Philippines appears to be furthest along in its strategic approach to this phase. For example, to help increase their ability to prevent and prepare for possible hazards, DRRM in the Philippines has shifted from a reactive or “response-oriented” approach to a proactive approach, leaning towards adopting measures on preparedness, prevention and mitigation. This approach focuses on using directives, skills and capacities that would implement strategies and policies to eventually reduce the impacts and possibilities of disasters.

In support of this, Philippines GIZ RFPI Asia has conducted an MSME risk assessment across three regions to understand their need for insurance solutions against natural catastrophes that their businesses face on a rather regular basis. In this context, they sought to understand the risks faced by MSMEs, the extent and nature of losses due to such risks and the coping strategies that they adopt to finance losses and carry on with their livelihoods. In Vietnam, representatives and members of the Technical Assistant Groups of the disaster risk committees (TAG-CBDRM committee) conducted community-based disaster risk assessments (CBDRA) in 2017. The assessments were monitored by government agencies and all village community groups. Vietnam is affected by floods, storms in the east and south-east provinces, droughts and salt-water intrusion in the southern provinces. Beyond the use of risk assessments, however, very little, if any, implementation of actual prevention measures has taken place.

4.1.2. Financial needs measurement framework

**Box 4: Retention and Transfer phase**

Even when all the necessary steps have been taken in the Prevention phase, there are some risks that remain unmanaged. To deal with these residual risks, a risk transfer mechanism can be developed through the use of financial solutions for DRM. Risk transfer mechanisms provide the means to mobilise disaster funds quickly for various levels of society. As a result, governments, businesses and individuals are able to soften the financial impact through timely access to finance after a disaster, dissolve financial buffers and increase the effectiveness of contingency plans.

*Source: MCII & GIZ (2019)*
4.1.2.1. What is a financial needs measurement framework?

A financial needs measurement framework proposes an approach to assessing and measuring the key financial needs of financial consumers. Financial resilience is one of the core financial needs identified within the framework. This framework therefore presents an opportunity to assess the ability of MSMEs to respond to the financial implications of a shock, with a particular focus on the financial tools and products used. The financial needs framework can be implemented in collaboration with financial service provider partners to better understand the ways in which MSMEs use different financial services and what determines their choice of financial service and usage patterns, or with national policymakers to assess the level of resilience of specific target markets and the efficacy of different financial instruments.

As a starting point, consider that MSMEs use financial services because it can help them to achieve some underlying financial need, in this case resilience. The assessment of financial needs and the impact this has on the resilience of MSMEs in the face of natural disaster risks or other economic shocks can be implemented using both demand- and supply-side approaches. Demand-side approaches include implementing a standalone financial needs survey while financial needs can also be used as an analytical framework to derive insights from existing financial service provider datasets.

Demand-side data and financial service provider data can also be merged to give a complete picture of MSME financial needs and gaps.

4.1.2.2. Why use it during Retention and Transfer phase?

Understanding the prevalence of certain financial products or services used by MSMEs, how they are used and why the MSMEs choose one response over another provides a new perspective on the ways in which financing mechanisms can be designed to be more meaningful to these MSMEs. It could also reveal what the gaps are and therefore what policymakers, regulators and market players can do to ensure that the formal financial sector more effectively meets MSMEs’ financial needs in the face of disaster risks.

4.1.2.3. Assessing resilience

The financial needs framework defines financial resilience as “The ability to recover from a financial shock flowing from an unexpected event” (Makuvaza, et al., 2018). The measurement framework therefore aims to measure how quickly and easily individuals or MSMEs are able to recover from a financial shock. The diagram below explains this visually. Time is on the X-axis, while the Y-axis portrays the negative impact of a financial shock relative to an individual’s and an enterprise’s financial position. When a financial shock is experienced, their financial position deteriorates. Financial resilience is measured as the extent to which a person or an enterprise is able to return their financial position to the pre-shock level and how long it takes to do so.

---

14 Resilience: This is the ability to deal with unexpected shocks that have a financial impact. Therefore, the need to build and maintain resilience goes beyond short-term liquidity management to the need to avoid falling into poverty or reducing living standards due to the impact of risk events. Financial services can improve people’s welfare by helping them prepare for, manage and recover from unexpected financial shocks.
As the diagram indicates, the framework considers resilience to manifest across two dimensions, which then form the indicators to measure resilience:

i. the extent to which one is able to recover from a stated financial shock and

ii. the time it would take to regain the pre-shock financial standing.

Two core indicators are therefore proposed by the financial needs framework to measure resilience:

- The percentage of the population [or MSME segment] able to recover from a financial shock that occurred within the past 12 months;
- The number of months it took – or is expected to take – to recover from the financial shock.

4.1.2.4. Measuring resilience

The financial needs measurement approach proposed by the insight2impact (i2i) aims to draw on data collected both from demand-side surveys and from supply-side transactional data.

An example set of survey questions would be to ask MSMEs whether they experienced any of a defined list of risks over the past year (such as death of a family member, damage or loss to productive assets, a climate-related event). If yes, the question would then be: “how long ago?” Next, the MSME would be asked whether they have regained the same financial position they had before the shock happened and, if so, how long it took to regain that position. Those that have not yet recovered can be asked how long the recovery is expected to take.

Such questions are retrospective in nature, so the answers do not give a prospective indication of whether a person would be able to weather a shock in the future. Prospective resilience questions tend to focus on whether an MSME has access to a financial buffer, for example: “Would you be able to raise the equivalent of three months’ expenses if an
emergency happened right now? Such questions can be used to amplify the retrospective indicators set out here.\textsuperscript{15}

Where possible, FSP supply-side data can be used to amplify demand-side data. For example, shocks reported in a demand-side survey could be related to observable account activity, for example draw-downs and rebuilding account balances over time. FSP data cannot be used in isolation, as it would not be possible to link changes in account balances to the incidence of risk events. For example, an MSME may draw down their savings in response to a financial shock, but also to purchase new equipment.

Given that both of these data sources have strengths and limitations (see Annex), a combination of demand and transactional data therefore has scope to render the most granular insights in relation to MSME financial needs. This is achieved by (1) rolling out a demand-side survey, be it a standalone financial needs questionnaire or integrated in an existing survey; (2) obtaining transactional data on usage patterns; and (3) administering the financial needs survey to a number of targeted respondents drawn from the financial service provider sample database, to create a merged or linked dataset that connects the demand and supply-side transactional data together.

A merged dataset will show detailed usage patterns for FSP customers, as well as give a window into the broader financial life, use case and devices of those respondents outside of that particular provider’s products. A merged dataset can provide unique insight into trends in formal financial service usage in the context of the underlying financial need that impact resilience, the usage drivers and the broader device portfolio of formal sector users that policymakers, regulators and FSPs do not normally have sight of.

\textit{When is it appropriate?} A major limitation of merged data is that it is resource intensive to obtain, as it requires a survey to be rolled out, plus negotiations with one or more FSPs to source their data. One of the biggest challenges encountered by i2i was the roll-out of the demand-side survey to respondents in the transactional supply-side database. This required the FSP to share a contact list of a sample of clients with the research house conducting the demand-side survey (which is subject to confidentiality constraints), and for the research house to successfully recruit respondents from a targeted list of clients residing in different areas. Therefore, the normal random sampling approach cannot be applied. It is therefore only a viable data source if there is a willing FSP partner and there are sufficient resources and time to achieve meaningful results.

4.1.2.5. Country case studies

Across several of the focus countries FSPs appear to play a key role in the design and distribution of risk transfer mechanisms for MSMEs. Proactive engagement with FSPs about the needs of the MSME segment, and the opportunity it presents, seems to be key in advancing risk transfer solutions in these countries. In Myanmar, for instance, GIZ, guided by the government-facilitated public–private dialogue between MSME associations and five

\textsuperscript{15} It is worthwhile considering the advantages and disadvantages of prospective versus retrospective indicators. Measuring resilience prospectively would not only be limited to financial shocks that have actually happened to an enterprise, but it would also explore the eventualities that might happen and how prepared an MSME is to withstand the financial consequences of such eventualities. As the objective is for MSMEs to be resilient to shocks as they arise, a forward-looking perspective is attractive. However, it is very difficult to verify reported future resilience based on hypothetical scenarios without some objective measure of financial standing. Retrospective questions, in contrast, ask the enterprise about an actual experience, its impact and how they coped with it, and may therefore lead to more accurate responses. However, the retrospective approach is limited to events that happened over a defined period, so they cannot give an overarching view of resilience beyond actual events experienced.
banks, was interested to learn about how to better appraise and deliver loans to these organisations. In Laos, the government sought to link MSME financing to aggregators within the mining sector, given the scale of MSME operations in the mining value chain. In the Philippines, MicroBiz Protek is a micro disaster risk insurance (MicroDRI) product in partnership with AXA Philippines, GIZ Philippines, and Department of Trade and Industry that aims to contribute to both the financial stability and the financial literacy of MSMEs that are vulnerable to natural and man-made disasters. It offers a comprehensive property insurance with personal accident coverage, comprehensive general liability, and AXA assistance.

4.1.3. Disaster risk preparedness survey

**Box 5: Preparedness and Response phase**

If and when a disaster does occur, it is important that MSMEs have the capacity to effectively anticipate, respond to and recover from the impacts of these events. For this phase, it is important to monitor the risks and establish early warning systems, as well as to have preparedness action plans in place so that, when needed, adequate support is available to meet critical MSME needs and to stabilise production and reduce price shocks.

Building on MSME preparedness is the Response phase, which is predominantly focused on the immediate actions just before, during or immediately after a disaster. Effective and efficient response activities rely on disaster risk-informed preparedness strategies and actions defined in contingency plans. Responding with relief programmes ensures public safety and meets the basic needs of the people affected, while a post-disaster financing strategy helps to deal with actual losses and mobilise resources.

*Source: MCII & GIZ (2019)*

4.1.3.1. What is a disaster risk preparedness survey?

Once the risks and needs of an MSME have been identified, evaluated and prioritised, the next step is to explore the extent to which the MSME is able to respond rapidly and effectively in the aftermath of a disaster, should it arise. A disaster risk preparedness survey is a tool that can assist in this process as it is used to understand the level of preparedness of MSMEs based on a number of factors, including infrastructure, internal business strategies and external support.

The outcomes of this survey are also key to ensuring that appropriate response measures are implemented in a timely and effective manner, either internally or via external stakeholders or channels, to protect MSMEs and mitigate losses.

4.1.3.2. How to implement a disaster risk preparedness survey

The value of a disaster risk preparedness survey largely depends on the questions that MSMEs answer and how well these questions are understood. Good survey practice requires that the questionnaire not take longer than 30–40 minutes to administer and the scope of questions should be tailored accordingly, as relevant to the local context.

The first step in structuring a dedicated disaster preparedness survey is identifying the key factors that play a role in shaping the level of preparedness of MSMEs. These can include:
• **Internal capacity:** This considers the degree to which the MSME has been able to access the necessary information, financial products/services and skills that would enable it to prepare for and respond to a disaster risk event.

• **Internal strategy:** This considers the extent to which the MSME has developed and implemented a comprehensive internal disaster response plan or mechanism that can be applied rapidly when needed.

• **External environment:** This considers the social and economic environment in which the MSME operates, particularly the role of public and private organisations and those of business partners and suppliers.

Once the questionnaire is designed, it can be rolled out using standard sampling methods. Using the correct sampling approach is important to ensure the results can be weighted to be representative at the national or regional level, depending on the scope of the survey. Demand-side survey data may be collected either through in-person interviews or via an SMS or other electronic survey:

• **In-person interviews:** The questionnaire is administered by an interviewer, who captures the responses on each question. The face-to-face interaction enables the interviewer to obtain visual cues, which may be helpful in probing for more accurate responses. The advantage of in-person interviews is that they can increase the validity of responses through intervention by the interviewer in cases where the respondent fails to understand the question asked. The major limitation of face-to-face interviews is the high cost of implementation.

• **SMS surveys:** The proliferation of mobile phones makes data collection via the mobile phone (through self-complete or interviewer-administered surveys or through a combination of both) an appealing option. Mobile phone-based surveys can be achieved through SMS, calls, social media or over websites. Mobile-data collection, especially the self-completion method, is significantly cheaper than face-to-face surveying, but it comes with many of its own limitations, such as the exclusion of those without mobile phones, the ability to opt out easily, and responses may be limited by character restrictions.

The analysis of the responses gathered from the MSME disaster risk preparedness surveys should reveal important strengths and gaps regarding the preparedness of a particular cohort of MSMEs. Based on these results, the focus should be on establishing and strengthening the capacities of MSMEs to anticipate, cope with and recover from the negative impacts of emergency occurrences and disasters.

4.1.3.3. Country case studies

Across the seven focus countries, initiatives designed to support MSME preparedness are focused more on training and information-sharing as a way to ensure that these enterprises are well equipped to monitor and develop key action plans in the face of disaster or other risks. In Mongolia, for instance, GIZ has been working to train MSMEs to be more efficient in areas such as business development, marketing and risk management, with the aim of investing in people to support the resilience of these organisations. In Vietnam, as part of the national leg of the ASEAN regional MSME portal, the local MSME ministry has developed its own national MSME portal as a centralised information sharing hub to support and guide MSMEs.
In the Philippines, the disaster response strategy is led by the Department of Social Welfare and Development and it aims to provide life preservation and meet the basic subsistence needs of the affected population based on acceptable standards during or immediately after a disaster, and quickly restore basic social services. Some practical steps they have implemented include the listing and distributing nearby evacuation centres as well as providing emergency toolkits for MSMEs.

4.1.4. Disaster recovery

Across the seven focus countries, initiatives that relate to MSME recovery appear limited in terms of practical implementation. This is probably due to a lack of tracking and follow-up to ensure response leads to recovery, and to monitoring vulnerability over time. In Cambodia, however, the local government has responded to the MSME business risks resulting from Covid-19 by developing a recovery strategy that limits the tax burden placed on MSMEs and is also in the process of introducing an export-promotion strategy for MSMEs to ensure that these value chains are more resilient to future pandemic risks. In the Philippines, an MSME disaster recovery initiative led by the National Economic and Development Authority targets restoring and improving facilities, livelihood and living conditions, and the organisational capacities of affected communities and reducing disaster risks in accordance with the “build back better” principle. This includes, specifically, the repair and restoration of infrastructure and lifeline facilities, the revival of economic activities and the provision of new sources of livelihood.

Key to note here is that, where, 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, the cases of Cambodia and the Philippines demonstrate initiatives that support the transition between emergency arrangements and economically sustainable communities and still include livelihood recovery.

Box 6: Recovery

The last phase of the ICRM helps to build back better to create resilience. “Build back better” is an essential concept of resilient recovery. This encompasses restoring communities to their normal level of functioning by rebuilding livelihoods, rebuilding infrastructure and increasing community organisational capacities. Post-disaster recovery also includes the reduction of disaster risk factors.

Source: MCII & GIZ (2019)
5. Designing interventions

The previous two sections discussed how to gain a clearer and deeper understanding of the resilience needs of specific MSMEs. The next step is to design an intervention able to support the resilience of these enterprises effectively.

In designing resilience interventions, we once again return to the definition of resilience outlined in section 2. Effective interventions should be highly cognisant of the holistic nature of resilience and build interventions accordingly. There are at least two dimensions or considerations of particular importance to consider:

- Developing the resilience of actors in the broader ecosystem, and that of the ecosystem itself.
- Developing resilience that goes beyond just focusing on the transfer of risk (typically via insurance) and the recovery to also consider the prevention, mitigation and management of risk, as detailed in the ICDRM framework.

This section outlines key considerations when thinking about implementing interventions for MSME resilience and documents how different countries in Asia have gone about designing and implementing interventions to support MSMEs.

5.1. Systems approach key in designing MSME resilience-building interventions

MSMEs, like larger businesses, do not operate in isolation but rather as part of a broader ecosystem that may involve a number of different economic actors and linkages. In developing interventions to support MSMEs, it is therefore important to start by holistically understanding the system when considering the impact these interventions will have on various MSME segments and value chain(s) to mitigate undesirable outcomes. Below are three approaches that may be considered when thinking about an MSME system. In Vietnam, GIZ implemented a similar diagnostic analysis of the country’s MSME export ecosystem.

5.1.1. System diagnostics

A diagnostic is a broad-based market assessment that aims to understand the market system within specific contexts, for specific markets and/or for specific target groups. Diagnostics are a relatively common tool used during the research phase of development aid as they are powerful tools to both identify priority interventions and understand the context within which different systemic actors operate. Specific interventions can then be designed based on the diagnostic research.

The Access to Insurance Initiative’s (A2ii) microinsurance diagnostic methodology is well known and has been applied across nearly 30 countries, including China, India, Mongolia, Nepal, Pakistan and Philippines in the Asian region. The A2ii toolkit describes a micro-insurance country diagnostic as:
an analytical study that analyses the demand for and supply of microinsurance products within a country and the impact that policy, regulation and supervision have on such demand and supply. The analysis is static (depicting the current situation) as well as dynamic (depicting how the market has developed over time). The combination of a snapshot and market evolution analysis enables the diagnostic to build an understanding of the underlying driving forces of the market stemming from the regulatory framework, the structure of the insurance market, the demand features and the broader financial sector, macroeconomic and socioeconomic context. Armed with this understanding, the diagnostic can identify the barriers to and opportunities for the microinsurance market’s future development going forward. Based on this, it then formulates recommendations for future market development. (Bester, et al., 2010)

Similarly, the Making Access Possible (MAP) financial inclusion diagnostics conducted in 15 countries, including Cambodia, Laos, Nepal and Myanmar, followed a similar approach but considered the entire financial services sector:

At the heart of the MAP methodology is a comprehensive, country-level financial inclusion diagnostic to identify actions and strategies that will improve the welfare of low-income households through increased financial inclusion.

Based on extensive research, the diagnostic provides a detailed analysis of the following focus areas: the country context; the demand and supply for financial products and services within a country (as well as information about distribution channels); and the impact that policy, regulation and supervision have on market development in that country.

The purpose of the analysis is to gain an understanding of how the market has developed over time as well as the current status of financial inclusion in the country. This allows the underlying driving forces of the market to be identified in order to inform recommendations. (Bester, et al., 2010)

In Vietnam, GIZ similarly applied a diagnostic approach that sought to make sense of the barriers and challenges faced by MSMEs in the internationalisation activity, the existing supporting structure (legal, policies, enforcement) for MSME in internationalisation activity, the key actors who provide services/facilities to support MSMEs and their current capacity and tools, MSME needs for supporting services in international trade and some recommendation for improving services to support SME in internationalisation activity (Thai, 2011).

Through this exercise, GIZ was able to develop recommendations informing tailored interventions to enable Vietnamese MSMEs to overcome the barrier and risks related to internationalisation.

5.1.2. Systems practice methodology

An alternative approach that has gained popularity in recent years is the systems practice methodology. Systems practice is both a specific methodology and a more general approach to grappling with adaptive problems in complex environments with the aim of bringing about enduring social change at scale. While systems practice does not have the depth of a full-scale diagnostic, it can be a highly valuable tool with which to map out given ecosystems
and develop an understanding of the interaction between ecosystem players and the most critical influences on that system.

The methodology of systems practice is at its core a participatory sense-making exercise. The aim of the process is to explore and map out all the relevant factors, or forces, that influence a system and its functioning, their causes and effects, and the manner in which they then influence one another. A key tool to guide the process is a Systems Map, which shows how all identified and analysed forces hang together. It is important that the systems practice process incorporates diverse teams, including internal and external stakeholders of varied backgrounds, to ensure that multiple narratives are explored, and identified forces are unpacked from different angles. Ultimately, the Systems Map and the accompanying Systems Narrative are used to uncover key leverage points. These leverage points are identified for the impact they can have on the functioning of a system and can be taken on by various system stakeholders to effect change.

*Systems Map approach.* In order to have an impact on a particular segment of MSMEs it is important to understand their realities in what is often a complex system. Understanding and mapping the system is a powerful tool for visualising a specific system in a way that helps identify opportunities for having the most impact. It can help to uncover the forces that affect the system and to see how they relate to one another. The following steps can be applied to map an MSME system that can be used to test and iterate with stakeholders and experts as part of the process of designing and tailoring appropriate interventions:

1. **Analyse causes and effects:** Analyse each of the forces you have identified to understand their causes and effects.

2. **Explore forces:** Surface the core forces that are keeping your system unhealthy (inhibitors) and also those that can nudge it towards a healthier state (enablers).

3. **Create loops:** Look for areas where causes and effects feed into each other, and capture these patterns as dynamic loops.

4. **Discover the deep structure:** Take a step back to identify the central driving forces in your system.

5. **Build your map:** Create a holistic and cohesive visualisation of your system that highlights your deep structure and the ways in which your loops are interconnected.

6. **Craft your narrative:** Create a cohesive narrative that helps you tell the story of your system to others.

7. **Socialise and iterate your map:** Share your map and narrative to test your understanding of the system.

### 5.1.3. Value chain mapping

In section 3 the value chain was discussed as a critical parameter for segmenting MSMEs. It was explained that the risks faced and contextual realities of MSMEs differ substantively by economic activity and, therefore, a segmentation by value chain or sector is important to understanding those nuances.
However, the importance of a robust value chain mapping goes beyond the need simply to effectively segment MSMEs. Individual enterprises do not operate in a vacuum; they are typically highly integrated and interact with a range of different players in an ecosystem or a value chain. When considering how best to implement an MSME intervention, it is important to understand the direct impact this may have not only on the intended beneficiary, but also on the broader value chain and ecosystem in which they operate. In this context, the value chain mapping approach can be used to provide even further depth and understanding of the nature of MSME participation in local and international markets.

Furthermore, understanding and mapping the value chain or ecosystem is also important to identifying the key entry and aggregation points in the system. It is crucial to identify for the sake of implementing specific interventions – whether it is training, information sharing or the provision of financial services, these interventions, services or products all require a viable entry point into the value chain or ecosystem through which they can reach a sufficiently large subset of MSMEs with similar needs. These aggregating entry points may be traditional associations, cooperatives or government-facilitated, such as the Cambodian Rice Exports Association and the Cambodian Rice Federation, or they may be emerging digital platforms or online marketplaces, such as Alibaba in China, FlipKart in India or Gojek in Indonesia and Vietnam.

Stakeholder consultations with GIZ in the Philippines revealed that the mapping of individual value chains is an approach that has been implemented as part of a public-sector intervention, the Integrated Natural Resource and Environmental Management (INREM) Project, driven by the Department of Trade and Industry (DTI) (see Box 6). Four priority commodities were chosen by the DTI as the priority value chains for

---

**Box 6: Value chain promotion in the Philippines**

Value chain promotion is both a systematic and a systemic approach. It is systematic, as there is an existing process to go about in analysing the current situation, identifying market opportunities, constraints and opportunities to reach that market, formulate strategies and develop action plans involving key stakeholders. It is also systemic, as it looks into the different levels of micro, meso, macro and meta in analysing MSMEs across different sectors.

Furthermore, this approach is used to explore the sequence of related business activities in a specific value chain, from the provision of specific inputs for a particular product to primary production, transformation, marketing and up to final consumption; or the set of enterprises that perform these functions, namely the producers, processors, traders and distributors of a particular product. It also looks into the enablers that can support these enterprises to address constraints and optimise opportunities to be able to access a specified market.

Being a system means that natural disaster risks at one level can filter across and affect all other levels. This also means that interventions must be designed and implemented with the potential systemic impact in mind.

*Source: DTI Philippines*

---

17 Available from: https://www.alibaba.com/
18 Available from: https://www.flipkart.com/
19 Available from: https://www.gojek.com/
promotion under the INREM project, including the banana chips and coconut products value chains.

In India, the systemic mapping of MSME value chains has been done through the cluster approach (see Box 7), an alternative tool or mechanism that similarly disaggregates between MSMEs by economic activity and develops an in-depth understanding of the eco-system within which they operate in order to design and implement effective interventions. This approach has achieved relative success in guiding interventions which support MSMEs that were facing difficulties in achieving economies of scale, specialisation and innovation due to their small size.

**Box 7: MSME cluster approach in India**

The Ministry of Micro, Small and Medium Enterprises (MSME), Government of India (GoI), has adopted the cluster development approach as a key strategy for enhancing the productivity and competitiveness as well as the capacity-building of Micro and Small Enterprises (MSEs) and their collectives in the country. A cluster is a group of enterprises located in an identifiable and as far as practicable, area and producing same/similar products/services. The essential characteristics of enterprises in a cluster are (a) similarity or complementarity in the methods of production, quality control and testing, energy consumption, pollution control, etc.; (b) similar level of technology and marketing strategies/practices; (c) channels for communication among the members of the cluster, and (d) common challenges and opportunities.

By identifying and mapping MSMEs into targeted clusters, interventions aimed at building and supporting MSME resilience can be more effectively distributed and scaled.

*Source: Government of India (2012)*

As can be seen in figure 7, there are many dimensions to the value chain that could be included in the mapping exercise. It is therefore crucial to choose the dimensions to be mapped based on available resources, the scope and objective of the value chain analysis and the overarching intervention. Based on stakeholder engagements with GIZ country offices, the above dimensions represent key areas of interest in efforts to support MSME resilience:
Knowledge and flows of information: Intangible qualities of value chains, such as information and knowledge, are generally more difficult to capture but represent a key resource for MSMEs in capacitating and creating awareness amongst MSMEs. In the ASEAN regional bloc several countries such as Cambodia and Vietnam have prioritised the access to and sharing of information among MSMEs as a way to build resilience. Mapping information involves showing the flow of information between actors at each process in the value chain, as shown in the example in figure 8 below, which represents a soybean value chain in Laos.

Geographical flow of the product or service: Understanding the geographical dimension of MSME value chains is an important part of the value chain mapping process as geography can have significant impact on MSME operations and resilience, from access to markets to exposure to natural disaster risks. The first
step is to identify where each of the processes in the value chain is physically located (for example, where are the farms, primary processors and secondary processors). Start at the place of origin (i.e. where it is cultivated) and see if it is possible to map how the product travels from intermediary trader to wholesaler, retailer and final consumer.

If possible, a map of the region can be used to indicate the physical flow on it. Making this kind of map will make it possible to capture a dimension of the product flow (volume, margin, number of actors) and show the locational or regional differences. Preparation of this map greatly facilitates the organisation of subsequent fieldwork to conduct the full value chain analysis.

- **Mapping relationships and linkages between value chain actors**: A further step is to analyse the kind of relationship value chain actors have to each other. This is prompted by the following key question: What types of relationships and linkages exist? Relationships can exist between different process steps (e.g. between producers and traders) and within the same process step (e.g. farmer to farmer). Relationships or linkages between similar actors can be mapped according to three broad categories:

  o **Spot market relations**: These are relationships that are created “on the spot”. Actors make a transaction (including negotiations on price, volume and other requirements) involving the duration and scope of that specific transaction. This is typical of transactions made at a fresh vegetable marketplace: buyer and seller meet, come to an agreement (or not) and end the relationship. These can also be described as “arm’s length relationships”.

  o **Persistent network relations**: When actors have a preference for transacting with each other time and time again, we can speak of a persistent network relation. This comes with a higher level of trust and some level of interdependence. This relationship can be formalised by contracts, but this is not a necessity.

  o **Horizontal integration**: This goes beyond the definition of a “relationship”, since the actors share the same (legal) ownership. One and the same organisation (this can be an enterprise or a cooperative) deals with different processes throughout the value chain. The ownership structure can be partial or full.

The following example is based on the sedge handicraft subsector in Vietnam. Most linkages are persistent. This example is representative of sectors in which high-quality requirements and differentiation (design of handicrafts) are crucial.
• **Mapping services that feed into the value chain**: A potential risk with value chain analysis is that the world surrounding the value chain is not taken into account. Crucial information might be found in the rules and regulations that are governing (parts of) the value chain or in services that are feeding into the chain. Mapping these services will give an overview of the potential for interventions outside the value chain itself. This is covered by the key question: What types of services are feeding into the chain?

• **Mapping constraints and potential solutions**: Constraints exist at almost all process levels of any value chain and often impact the ability of MSMEs to prepare for and cope with external shocks to their business. For example, these could be constraints to greater efficiency, constraints to financial services or constraints to reliable markets. Initial identification of these constraints should be made at all process levels and in addition, identification of potential solutions can be made.

5.1.4. **Building resilience interventions that focus on risk management and prevention**

The ICDRM framework effectively illustrates the importance of thinking about resilience holistically. This means not just considering tools to help MSMEs respond to risks, but also developing interventions that limit the likelihood of the risk event occurring and that limit the scale of the impact should it occur.

5.1.4.1. Risk prevention and mitigation in climate

*There is a substantial disaster risk protection gap.* There is a big gap between the protection offered by the insurance sector and the need for coverage, which is increasing with the growth in disaster risks. Swiss Re (2020), for example, estimates losses of USD 84bn from natural catastrophes, specifically, in 2019, of which just USD 13bn was covered by insurance, leaving a risk protection gap of USD 71bn. With ongoing changes to the climate, it is expected that the cost of natural catastrophes will only continue to rise. Furthermore, areas particularly affected by natural catastrophes such as flood plains, are increasingly so high risk as to be considered uninsurable. In the Philippines, for example, many MSMEs, and even larger enterprises, are unable to access any insurance cover because they are situated in areas that are considered too high risk and/or because insurers are becoming increasingly conservative due to substantive losses incurred from previous natural catastrophes, most notably Typhoon Haiyan (Stakeholder interviews, 2020).

The need to build resilience holistically is clear. It is obvious that micro-level interventions alone will not be sufficient to deal with these large macro events. In line with the ICDRM framework, considerable emphasis also needs to be placed on building data and risk models and investing in interventions that prevent, mitigate and manage the risk.

The insurance sector can help build resilience in three main ways:
• **Transfer risk**: Insurance pools together take on large-scale risks to enable relief through pay-outs that can be used to invest in recovery and restitution. Insurance offerings can allow for coverage against specific perils in a cost-efficient manner. In the absence of insurance, the costs of recovery falls on those affected: individuals, firms, governments or development partners.

• **Inform and incentivise risk management**: Insurance has a key role in building appropriate risk management systems. Insurance prices risk, which requires modelling and the analysis of risk by generating information and data. This also enables risk to be divisible and tradeable to crowd in more actors to manage risks. It also creates incentives to either prevent risks from occurring or to help to reduce the impact of risks in the instance that they occur to reduce the cost of the risk.

• **Building resilient assets**: Through their role in mobilising, pooling and allocating capital, underwriters support infrastructure and capital investment. The requirements they set can contribute to more resilient assets through, for instance, informing building codes at a city level or setting fire risk management conditions at a contract level. Properly built developments create a resilient infrastructure base for cities and rural areas alike.

However, the insurance sector cannot close the resilience gap alone. Public–private partnerships are also crucial in contributing to the prevention and mitigation of macro-level risks. If we consider urban flooding as an example:

Cities are the main drivers of economic growth on the continent. Thus, disasters in urban areas have a direct economic impact. Moreover, the economic cost of urban disasters affects not only the urban poor, but also the rural communities that depend on them as markets for their produce or as remittance senders. Urban resilience is thus a critical element of sustainable development (Santos & Leitmann, 2015). MSMEs also tend to be among the most vulnerable to urban disasters, such as flooding, as they are often situated in vulnerable locations. Two of the most impactful interventions to address urban flooding include:

• The investment in and maintenance of effective urban drainage systems, ensuring that water is not able to build up over time. The reduction in standing water in urban areas also has health benefits for residents.

• The recovery of protection of natural wetlands. Wetlands act like natural sponges, collecting and naturally recycling water.

Both of these interventions require buy-in from a range of actors, and in most cases will need to be led by local governments. However, private-sector players can and should play a strong partnership and informational role in these types of interventions. The key point, though, is that to build resilience requires a holistic understanding of the risks that face MSMEs, and interventions may be required that are far removed from the ultimate beneficiaries.

5.1.4.2. Risk management for individual MSMEs

Increasingly technological solutions like those discussed in Box 8 below, are able to facilitate proactive risk management for individual MSMEs. Furthermore, insurers and credit providers can, and should, increasingly build proactive risk management into their product offering to MSME customers. Insurance and credit providers have far greater and more sophisticated understanding of risks and how to model and mitigate them than most MSMEs. Working with enterprises to assess their risk and support the implementation of risk prevention and management mechanisms, rather than only focusing on the transfer of risk
through traditional insurance policies or collection of loan repayments, can be mutually beneficial and, particularly for insurers, add far greater tangibility to MSME offerings.

for example, highlight the road transport and logistics value chain in Ghana. Figure 10 below provides a simplified illustration of this value chain in Ghana and highlights the role that the insurance sector currently plays at each stage. What is particularly interesting is that, based on the qualitative interviews conducted with MSMEs within the sector, the primary risk identified was also the one worst addressed by existing insurance solutions – namely the driver. Driver risk – a term which is intended to capture anything that can go wrong because vehicles are driven by human beings and, as such, may arise because of basic human error, tiredness and/or alcohol consumption – was consistently identified as the most significant risk that these players face. Delays in lead time due to a lack of reliability on the driver’s part, overloading of trucks as well as damage to vehicles and/or to the goods being transported – caused by speeding and accidents – are among the most pertinent manifestations of driver risk outcomes.

Figure 10: Road transport and logistics value chain in Ghana

This highlights the usefulness of understanding MSMEs through a value chain lens, but also the weakness of considering solutions limited only to risk transfer and coping mechanisms after the risk occurs. The study found no proactive risk management solutions available to road transport and logistics MSMEs in the Ghanaian market, despite the fact that such solutions would probably be better able to resolve what these MSMEs identified as their greatest risk. Some of these MSMEs have already implemented some risk management mechanisms to mitigate their driver risk, such as:

- Inserting tracking devices in each of their trucks, which allows management to track speed, distance travelled, stops, etc. of every truck and driver.
- Educating their drivers on road safety by sending them on safety driving short courses.
- “Testing” the reliability of new drivers by sending them only on short distance deliveries during their first period at the company.
- Having trucks be inspected onsite by the engineers that they employ, who are tasked with checking the condition of the trucks before drivers set off on each new assignment.
Offering some of these, or similar, risk management solutions within the portfolio of insurance or credit services offered by FSPs would therefore more directly address these MSMEs’ primary risk needs, add tangibility to their offering and mitigate their own risk of claims and non-repayment.

This constitutes a specific example, but it illustrates the broader principles for insurance providers to assess risks and opportunities through a value chain lens and, more importantly, to consider risk prevention and management services as core parts of their value offering, rather than focusing purely on traditional risk transfer insurance products. New and emerging technologies offer increasingly viable options to incorporate these solutions more proactively into insurance providers’ value propositions.

Box 8: Applying technology solutions to risk management

**Parsyl.** Parsyl offers insurance cover, backed by Lloyds, for perishable cargo and vaccines with quality monitoring technology embedded in the product. This is done through a tracking device located with the cargo that records the location of the cargo as well as the temperature, light and humidity that the cargo is exposed to. If breaches of these requirements are recorded, the customer is notified of the event and Parsyl can identify where in the supply chain the breach occurred and who the responsible party is. This technology therefore offers customers immediate value as it helps to monitor cargo and reduce spoilage. It is also linked to goods-in-transit cover, thus mitigating the claims risk from an underwriting perspective, but also providing information to inform rapid claims payments, based on the sensor data. Parsyl is currently licensed to offer insurance solutions in the United Kingdom and United States, but the technology solution has been bundled with an AXA insurance solution for the cocoa value chain in Côte d’Ivoire and will operate across the developing world as part of Global Health Facility and Syndicate 1796 to cover vaccine distribution from 1 October 2020 in partnership with Ascot and AXA.

Lumkani. Lumkani is distributor of inclusive insurance products in South Africa that offer funeral and fire insurance, which is underwritten by Hollard. In order to mitigate the risks of fires, Lumkani provides customers with early warning fire sensors. The sensor is a heat detector and not an ill-suited smoke detector. In a fire situation, the device will ring alerting the family inside enabling them to be proactive before the fire becomes unmanageable. After 20 seconds the device transmits a signal to all devices in neighbouring homes up to 60 metres away creating a community-wide response to the fire. This device therefore offers significant value to consumers and the underwriter, including market based MSMEs, in helping to mitigate the risk of a fire occurring at all.

*Source: Parsyl and Lumkani*
6. Emerging trends

*Covid-19 may have undermined key systemic infrastructure.* The Covid-19 pandemic has had an enormous impact on MSMEs across the world. One thing that the pandemic has highlighted is how a systemic and covariate risk can undermine the key value chain or ecosystem infrastructure. As discussed in section 2, even where effective measures exist for individual MSMEs to respond to the direct impact of risks, an entire value chain can fail because of a systemic risk, rendering individual-level coping mechanisms irrelevant, or at least insufficient. Anecdotal evidence suggests that the ensuing major disruption to cross-border supply chains in the seven focus countries may have resulted in the collapse of some core infrastructure. In particular, logistics enterprises and transporters of goods across borders, themselves MSMEs, may have failed as a result of the almost complete halting of trade, because borders were closed as a result of the pandemic. This fundamental infrastructure underpinning the effective operations of value chains may not be quick or easy to rebuild and will have severe implications for exporters, even after cross-border trade has reopened (Stakeholder interviews, 2020). Other large covariate risks, such as natural catastrophes or cyber events, may have similar impacts, and they emphasise the need to understand and build the resilience of ecosystems at a macro, as well as a micro, level.

*However, Covid-19-triggered adaptation of supply chains may also yield new opportunities.* While cross-border trade-flows of goods and services have been heavily disrupted as a result of the pandemic, it has also required large procurers of inputs from other countries to look for domestic alternatives. In Mongolia, for example, the pandemic has provided an opportunity for many local MSMEs to fill the gap left by the reduction in imports (Stakeholder interviews, 2020).

*Covid-19 has also highlighted the complete failure of business interruption risk globally.* Millions of MSMEs around the world have experienced business interruptions (BI) due to Covid-19. However, the few BI policies available in developing countries pay out on interruptions caused by the loss or destruction of physical assets, excluding business interruption caused by a pandemic. Even before the Covid-19 pandemic, many MSMEs have perceived business interruption as a major risk. However, Covid-19 has put business interruption cover at centre stage and has shown that existing insurance does not cover this risk adequately. Moreover, in increasingly digitalised economies physical assets may no longer be the greatest cause of business interruption for enterprises across the developing world.

*Impact of Covid-19 on the resilience of MSMEs likely to have a long tail.* The immediate impact of the Covid-19 pandemic and allied-government-led lockdowns, the closure of borders and other restrictions obviously had a major impact on MSMEs across the seven focus countries, with a high proportion forced to close temporarily, some permanently. However, even as restrictions are lifted, and even in a best-case scenario where an effective vaccine can be rolled out in the relative short term, it will be important to understand that MSMEs will remain more vulnerable for some time. The loss of employment and the reduction in consumer spending power will have an impact on the demand for many MSMEs, on the one hand; but, on the other hand, MSMEs will still have to face the “normal” set of personal and business risks (such as those illustrated in figure 2), although with less ability to be resilient. This is because most MSMEs have been required to draw down on savings or take out loans.
to survive the short-term impact of Covid-19. The implication is that designing resilience interventions for MSMEs in the face of Covid-19 should not overly focus on the pandemic itself but should also consider that MSMEs are now also more vulnerable to the traditional set of ongoing risks typically faced.

*Increasing digitalisation positive for platform resilience.* In the wake of Covid-19, the physical restrictions placed on global economies has driven the acceleration of digital solutions. For MSMEs able to pivot their operations online, digitalisation may play a key role in supporting long-run sustainability and resilience. One reason for this is that digitalisation makes it easier for MSMEs to be reached and provides greater opportunities to cluster similar MSME segments around digital aggregation points, such as digital platforms. Furthermore, digitalisation facilitates the collection of a wider range of information and data on MSMEs, which is a key element in the design of fit-for-purpose resilience mechanisms. However, although digital solutions such as platforms are being developed, their success relies on the presence of well-developed physical logistics networks and infrastructure.

*Digital platforms provide access to major markets.* Large digital platforms such as the Chinese giant, Alibaba, are making cross-border sales increasingly efficient and feasible for ASEAN MSMEs and they appear to be improving access to markets. However, the shift to selling through platforms may also inadvertently lead to a reduction in the provider surplus and may have significant implications for MSMEs’ ability to draw on traditional resilience tools such as those through cooperatives and associations. It remains to be seen whether these platforms can overcome the constraints in the cross-border provision of financial services for MSMEs.

*New technologies are making proactive risk management increasingly feasible, affordable and practical.* The rapid growth and innovation in the technology space means that a more holistic approach to risk monitoring and management for MSMEs is becoming increasingly feasible. Sensors and the Internet of Things (IoT), in particular, make the monitoring of value chains possible on a real-time basis. Parsyl (see Box 8) has illustrated how sensors and IoT can be used to track goods in transit and monitor the atmospheric conditions within which they are being transported, leading to a reduction in the risk of loss and spoilage during transportation. Similar creative ideas are increasingly being developed to assess and actively monitor many of the other risks faced by MSMEs. Parsyl also illustrates how this type of technology can be bundled together with financial services to mitigate the risks of both MSME and FSP, while also offering greater tangibility for enterprises from their financial services.

*Data limitations a major challenge in serving MSMEs and climate risks.* A major reason for the lack of resilience tools available to MSMEs is the dearth of data and information available to providers, such as insurers. This effectively means that they are considered as highly risky customers. This guidebook discusses how information can be collected and assessed on MSMEs themselves. However, data and information are also required on the risks themselves. Climate and natural catastrophe risks pose a significant challenge in this respect: the rapid changes resulting from climate change mean that historical data is less useful, and it makes the modelling of future risk particularly challenging. Therefore, the more granular and detailed the data that can be made available, the better providers will be able to assess the scale and scope of a risk. The Philippines, for example, is working to develop enhanced and updated hazard maps.
7. Conclusion

This guidebook has attempted to provide guidance on the design of interventions to deal with MSME resilience. Resilience is a holistic concept that requires understanding and interventions to be designed which reflect that. Figure 11 below captures the proposed approach articulated by this guidebook.

Figure 11: Potential decision path to plan intervention

Source: Authors’ own

- **Establish the objective and the time frame.** When designing an intervention, it is important first to decide on the objective and the time horizon. In emerging markets, if the objective is to support export promotion by ensuring the sustainable integration of local MSMEs into international value chains, then the targeted intervention should focus on making the relevant information available to SMEs and reducing barriers to international trade. If the objective is to help MSMEs become more resilient in the face of natural catastrophe risks, it may require quite a different approach and intervention. Fewer MSMEs may be reached in the short term, depending on their levels of vulnerability and exposure to natural disasters, but those that are most in need of support are likely to realise the greatest value from these interventions. However, when determining specific objectives for interventions or programmes, it is important that these are placed in the broader context to ensure that they will be appropriate and support the broader MSME ecosystem and not lead to unintended consequences.

- **MSME segmentation.** Given the heterogeneous nature of MSMEs, segmentation is crucial to understanding the risks and existing risk management strategies employed by MSMEs (as outlined, for example, by MCI & GIZ (2019)). The gap between existing risks and risk management effectively constitutes the risk management needs of the MSMEs – of which insurance, for example, is one important mechanism. This can then inform the design of an intervention that effectively responds to risk needs. As discussed above, segmentation by number of employees does not lend itself naturally to MSME segmentation, given that other characteristics influence the nature of risk equally, if not more so. Target market segmentation should therefore consider a few additional factors, such as the value chain or sector, the MSME’s position in the production value chain, location, access to finance, the motivation of the entrepreneur, their skill, education level and gender, the accessibility of personal and business networks, the age of the business in addition to economic and regulatory country conditions. Data plays a key role in the segmentation process, but it is scarce. Therefore, data collection is likely to be a first step towards supporting the development of this market.
• **Assess target market resilience and needs.** Once the target market has been determined, it is then critical to assess the existing resilience of the specific MSME segment and identify the specific risks that they face. Depending on the nature of the intended intervention, this assessment may be more appropriate on an individual basis with specific MSMEs or at a segment level, to inform policy or other broad-based interventions. It is also critical to consider the ICDRM framework in this phase – assessing resilience is not purely about understanding MSMEs’ risks and their available coping mechanisms, but should also consider opportunities for prevention, mitigation, management from the risk and how MSMEs can recover once a risk event has occurred.

• **Design interventions to build resilience.** The final step is then to design appropriate and effective interventions that build resilience in the targeted MSME segment. A critical aspect of designing interventions is to start with a systemic understanding of the value chains and ecosystems within which the target MSME segment operates. While interventions may ultimately be designed with narrow objectives, they should be developed with an understanding of the system to ensure that they are appropriate, fit-for-purpose and do not result in unintended consequences.

Available at: https://www.fsnnetwork.org/sites/default/files/measuring_household_resilience_to_food_insecurity.pdf
[Accessed 23 September 2020].

[Accessed 09 October 2020].

Available at: https://a2ii.org/en/media/152/download
[Accessed 9 October 2020].


Available at: https://insider.zurich.co.uk/app/uploads/2013/06/Adapting-in-Tough-Times-The-Growing-Resilience-of-UK-SMEs.pdf
[Accessed 1 October 2020].


Available at: https://www.giz.de/expertise/downloads/Fachexpertise/giz2016-en-04_Briefing_Note_Value_Chains_in_Agriculture_March_2015.pdf
[Accessed 15 March 2019].

Available at: https://www.giz.de/en/worldwide/17772.html
[Accessed 6 October 2020].

Available at: https://www.giz.de/en/worldwide/14479.html
[Accessed 6 October 2020].

GIZ, n.d. *Promoting climate risk insurance in three Southeast Asian countries (Viet Nam, Indonesia, and the Philippines)*. [Online]
Available at: https://www.giz.de/en/worldwide/14131.html
[Accessed 6 October 2020].

Available at: https://www.giz.de/en/worldwide/82767.html
[Accessed 6 October 2020].

Available at: https://www.smefinanceforum.org/sites/default/files/analysis%20note.pdf
[Accessed 6 October 2020].
http://access.i2ifacility.org/Measurement_framework/FinNeeds.php#FinNeeds
[Accessed 6 October 2020].
[Accessed 14 October 2020].
Lao National Chamber of Commerce and Industry, n.d. SMEs in Laos. [Online]
Available at: https://lncci.la/smes/
[Accessed 7 October 2020].
Available at: https://lumkani.com/
[Accessed 19 September 2020].
[Accessed 8 October 2020].
MCII & GIZ, 2019. Roadmaps for Integrated Climate Risk Management;
Available at: https://www.merriam-webster.com/dictionary/resilience
[Accessed 9 October 2020].
Ministry of Micro, Small & Medium Enterprises, n.d. What is the definition of MSME?. [Online]
Available at: https://msme.gov.in/faqsg/1-what-definition-msme#:~:text=The%20Government%20of%20India%20has%20defined%20MSME,defined%20as%20a%20small%20enterprise%20but%20does%20not%20exceed%20Rs.
[Accessed 7 October 2020].
Available at: https://www.parsyl.com/insurance/
[Accessed 19 September 2020].
Pham, H. D., 2017. Determinants of New Small and Medium Enterprises (SMEs)
Available at: https://www.giz.de/fachexpertise/downloads/giz2019-factsheet_insurance_msm.pdf
[Accessed 1 October 2020].
Available at: http://legacy.senate.gov.ph/publications/AG%202012-03%20-%20MSME.pdf
[Accessed 8 October 2020].
International Business Research, 10(6), pp. 145-163.
[Accessed 6 October 2020].


Annexure: Data collection approaches

8.1.1. Financial needs survey

A standalone survey can often be a good way to gauge the financial needs of MSMEs, particularly where a country does not already have similar demand-side tools developed. Typically, a questionnaire would include a module on each of the four financial needs. Each need module incorporates the incidence of use cases in that need category, the devices used towards each use case and, where relevant, the outcomes related to that need. This is supplemented by modules on general demographics, usage patterns for different device categories and drivers of use.

*When is it appropriate?* The main benefit of implementing a standalone survey is that it is tailored to understand the financial needs of MSMEs and is therefore able to provide focused insights to help guide appropriate policy or interventions. However, a standalone survey requires dedicated resources. In countries where a nationally representative financial inclusion survey is already in place, for instance, resource constraints may mean that there is not also scope for a full, nationally representative financial needs survey. In such instances, a more limited sample approach can be considered in order to render indicative or regionally representative findings.

---

20 Transfer of value; Liquidity; Resilience and Meeting goals.
8.1.1.1. Transactional data

The next approach draws on MSME transactional data held by FSPs. The nature of the data will differ depending on the type of financial institution and the type of account(s) or financial product(s) included.

**Box 12: Transactional data and sources**

**What is transactional data?**

Transactional data is an objective data source that does not rely on consumer recollection. Nor does it suffer from human error or bias. It can therefore provide a more accurate and granular picture of usage than demand-side data sources. It is also possible to analyse different channels and merchant types to derive insights into use cases. FSPs such as banks, mobile network operators and microfinance institutions are potential sources of transactional data.

The main downside of such data, however, is that it only shows one aspect of an individual’s financial life and, as a result, may lead to inaccurate or biased conclusions if viewed in isolation. For example, while it can tell you how an individual with a bank account transacts on that account, it cannot pronounce on what other financial services that individual has or how their usage of the bank account is explained in the context of their other financial devices. Moreover, where MSMEs do not have any form of formal financial account, FSP data often does not cover a substantial part of the population. Demand-side data may therefore be the only way to ensure that individuals from all backgrounds are included in the research.

Another important constraint is that transactional data is proprietary. It is therefore necessary to obtain buy-in from an FSP to share an extract of their data — a process that can be time-consuming and will be subject to a non-disclosure agreement.

**Transactional data aggregators:** Depending on the country context, aggregated transactional data can be sourced from a number of data aggregators, including:

- **Credit bureaus:** Credit bureaus typically have access to transactional data on loan products. The FinNeeds approach can be used to infer insights into the reasons for borrowing and to help explain the drivers of repayment behaviour. In one of our pilot studies, we used transactional data from all the microfinance institutions under a prominent credit bureau in the country.

- **Payment gateways:** Payment gateways are potential data sources for populating a financial needs framework. Partnering with a national interbank payment switch can help to inform the drivers of MSME usage of digital financial services. Furthermore, these switches can hold data on individuals’ use of various banking platforms such as ATMs, point-of-sale (PoS) or internet banking. The merchant codes used for payments can be used to infer the underlying use case associated with a financial transaction. For instance, a debit order to a medical scheme suggests that one is preparing for a resilience need whereas a transaction at a fuel station is a transfer of value use case.

- **Regulatory bodies:** Regulators in some countries may monitor transaction activity on financial products as part of their mandate: for example, a regulatory authority which monitors mobile money transactions. Transactions on mobile money platforms are rich in use cases that can be used to benchmark drivers of digitalisation.

*Source: insight2impact (2019)*
**Collecting transactional data.** The first step in collecting transactional data is securing buy-in from the financial service provider or the regulatory authority. The next step is signing a non-disclosure agreement to set out the conditions for use of the proprietary data. Following this, it is important to engage the technical team at the FSP or the authority to understand the nature of the data: the available datasets across different financial products and, for each dataset, the available fields (types of transactions, demographic data) and the most appropriate MSME segments for which to extract data. An approach must also be agreed for anonymising the data via the allocation by the provider or the authority of unique client identifiers in lieu of customer names.

Next, the FSP or the authority will be asked to extract and share the data. The exact mode of data access will depend on the context and the policies and procedures of the participating institution and must be negotiated with the participating FSP or authority. For example, in a pilot study conducted by i2i, the participating provider extracted, encrypted and shared a representative sample of credit card, debit card, loan and insurance customers’ transaction data for a 12-month period. Note that, depending on the ruling data protection policy or regulation, it may not be possible for the provider or the authority to share the data externally. In such a case, the data analysts have to spend time on the provider’s or authority’s premises to analyse the data on their server.

**Analysing transactional data.** Transactional data can come from a range of financial products and from different types of FSPs. Therefore, the variables of interest differ depending on the nature of the dataset. In general, however, transactional data analysis focuses on two elements: usage and drivers.

For building a picture of usage, the RFMD (recency, frequency, monetary value, duration) analysis provides a generic framework that is useful in determining the variables of interest. The usage metric usually depends on the type of financial product under consideration. For instance, in a credit product, financial actions typically involve borrowing a certain amount and subsequent usage is in terms of repayments at given intervals. A transactional account, on the other hand, can be used for both savings and purchases. Usage usually involves accruing balances in that account and the frequency and recency at which one makes purchases or transfers using that account. To account for multiple financial actions in the use of certain products, it is useful to construct a composite “usage intensity” score to integrate the different dimensions of usage. This can then be used to segment or cluster MSMEs into different usage profile groups.

The driver analysis models the relationship between different demographic variables and usage using a number of standard statistical techniques.

**8.1.1.2. Merging demand-side and transactional data**

Given the strengths and limitations of demand-side and transactional data, a combination of demand and transactional data has the scope to render the most granular insights in relation to MSMEs’ financial needs. This is achieved by (1) rolling out a demand-side survey, be it a standalone financial needs questionnaire or one integrated into an existing survey; (2) obtaining transactional data on usage patterns, and (3) administering the financial needs survey to a number of targeted respondents drawn from the FSP sample database in order to create a merged or linked dataset that connects the demand- and supply-side transactional data together.
A merged dataset will show detailed usage patterns for FSP customers, and also provide a window into the broader financial life, use case and devices of those respondents outside of that particular FSP’s products. A merged dataset can provide unique insights into trends in formal financial service usage in the context of the underlying financial need that has an impact on resilience, the usage drivers and the broader device portfolio of formal-sector users that policymakers, regulators and FSPs do not normally have sight of.

**When is it appropriate?** A major limitation of merged data is that it is resource intensive to obtain, because it requires a survey to be rolled out, plus negotiations with one or more FSPs to source their data. One of the biggest challenges encountered by i2i was the roll-out of the demand-side survey to respondents in the transactional supply-side database. This required the FSP to share a contact list of a sample of clients with the research house conducting the demand-side survey (which is subject to confidentiality constraints), and for the research house to successfully recruit respondents from a targeted list of clients residing in different areas. Therefore, the normal random sampling approach could not be applied. It is therefore only a viable data source if there is a willing FSP partner and sufficient resources and time to achieve meaningful results.