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Building MSME Resilience in Southeast Asia

With a country focus on Thailand and Malaysia

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Cenfri is an independent African economic impact agency. They work to boost economic growth and increase sustainable development in emerging markets.

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Abbreviations and acronyms

ACCMSME	ASEAN Coordinating Committee on Micro, Small and Medium Enterprises
ADB	Asian Development Bank
API	Application programming interface
ASEAN	Association of Southeast Asian Nations
BOI	Office of the Board of Investment of Thailand
DOSM	Department of Statistics, Malaysia
E&E	Electrical and electronics
EBRD	European Bank for Reconstruction and Development
EEMM	Electrical and Electronics Marketplace
F&B	Food and beverages
FMCG	Fast-moving consumer goods
FDI	Foreign direct investment
GDP	Gross domestic product
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (German Society for International Cooperation)
KIIs	Key informant interviews
MERS	Middle East respiratory syndrome coronavirus
MIDA	Malaysian Investment Development Authority
MIDF	Malaysian Industrial Development Finance Berhad
MNC	Multinational corporation
MPOCC	Malaysian Palm Oil Certification Council
MSIA	Malaysia Semiconductor Industry Association
MSMEs	Micro-, small and medium-sized enterprises
NESDC	Office of the National Economic and Social Development Council of Thailand
OECD	Organisation for Economic Co-operation and Development
OIC	Office of Insurance Commission of Thailand
OSMEP	Office of Small and Medium Enterprise Promotion of Thailand
PAC	Penang Automation Cluster
PPE	Personal protective equipment
RAOT	Rubber Authority of Thailand
RHB	Rashid Hussain Bank
SAMENTA	Small and Medium Enterprises Association of Malaysia
SMEs	Small and medium-sized enterprise
TAT	Tourism Authority of Thailand
THNSO	Thailand National Statistical Office
TRA	Thai Rubber Association
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change

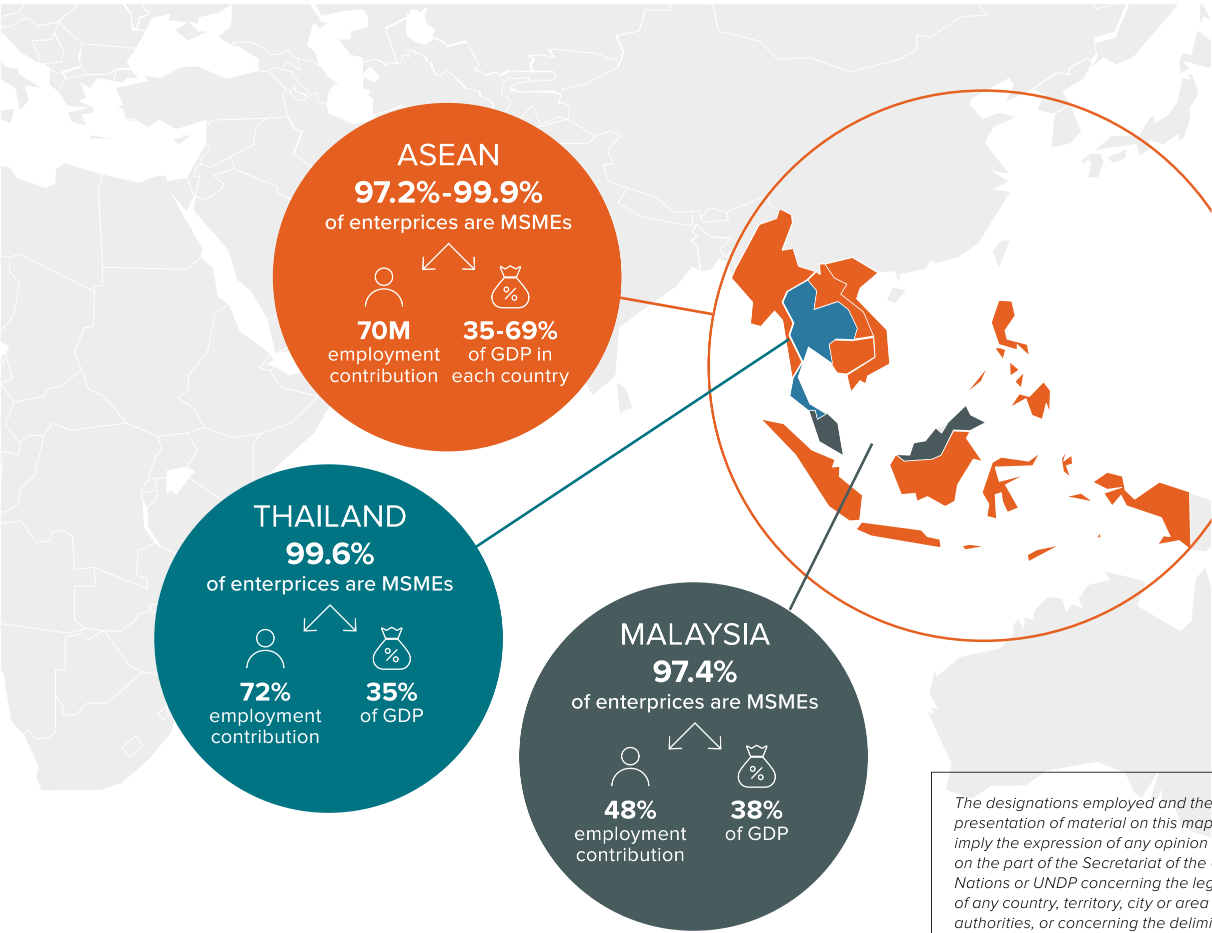
Executive Summary

Contextual overview

Micro-, small and medium-sized enterprises (MSMEs) are the backbone of the global economy and key drivers of development. They create and sustain jobs, provide critical goods and services in global supply chains and drive innovation.

MSMEs are deeply woven into the economic and social fabric of the countries and communities within the Association of Southeast Asian Nations (ASEAN). They account for 97% of all enterprises, 85% of the labour force, 45% of regional GDP and 10-30% of exports. See Figure 1, which highlights MSMEs' contribution to socioeconomic growth in the ASEAN, as well as in Malaysia and Thailand[1] — the two focus countries of this report.

Figure i: MSME contribution to socioeconomic growth in ASEAN, Malaysia and Thailand



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Sources: ASEAN (2023a); OSMEP (2020); SME Corporation Malaysia (2022).

1 ASEAN member states include Brunei Darussalam, Cambodia, Indonesia, the Lao People's Democratic Republic, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Viet Nam, along with Timor-Leste as an observer state.

The growth and survival of Southeast Asia's MSMEs are threatened by a wide range of long-standing challenges. These include access to financing, limited human resources, limited use of technology– but also rapidly rising risks, in particular our changing climate (eg. the direct impact of flooding or cyclones, or the increasing burden of heat stress) and health crises such as the recent pandemic.

During the COVID-19 pandemic, between 40.5% and 70% of MSMEs across ASEAN Member States suspended operations (ACCMSME, 2022).

Faced with these rising risks, MSMEs have a limited understanding of and access to effective coping mechanisms. Most MSME financial solutions focus narrowly on access to credit, and less than 5 percent of MSMEs in the ASEAN region have any form of insurance.

This is both a development challenge and a missed commercial opportunity. MSME failure would drastically undermine their contribution to the region's socio-economic development - as indicated by their elevated contribution to GDP and employment. On the other hand, the MSME market is potentially vast and, as illustrated by their low insurance uptake, highly underserved. For insurers, MSMEs constitute a major potential growth market to develop and offer products that address MSME risk and improve financial resilience.

However, insurers face multiple challenges in developing and distributing products to MSMEs. The vast differences between MSMEs based on size, maturity, sector, etc. makes them harder to navigate, and makes developing tailored products that meet MSME needs more difficult. A high proportion of MSMEs are also unbanked, which makes it harder to reach this target market with products. Limited data on MSMEs is an additional barrier to understanding the nature of their risks and needs.

A new approach to providing accessible MSME risk solutions

This report details a new approach to scaling financial protection for MSMEs through innovative insurance solutions. To seize this commercial opportunity and enhance MSME financial resilience, insurers using traditional business models need to pivot to an approach centred on understanding and addressing the unique needs of different MSMEs based on their specific attributes, challenges and risk. This involves:

- Segmenting MSMEs using a value chain approach[2] to address their specific needs and risk profiles; and evaluate aggregators that can reach MSMEs.[3]
- Building MSME resilience through holistic solutions which use both risk transfer and risk mitigation tools.

The approach is applied to Malaysia and Thailand as focus countries of the report, and where few insurance products exist that speak specifically to MSME needs.

MSME segmentation should be the starting point for developing tailored and customer-centric solutions for specific MSME segments. Figure ii illustrates the proposed approach to identifying MSME segments and developing tailored solutions.

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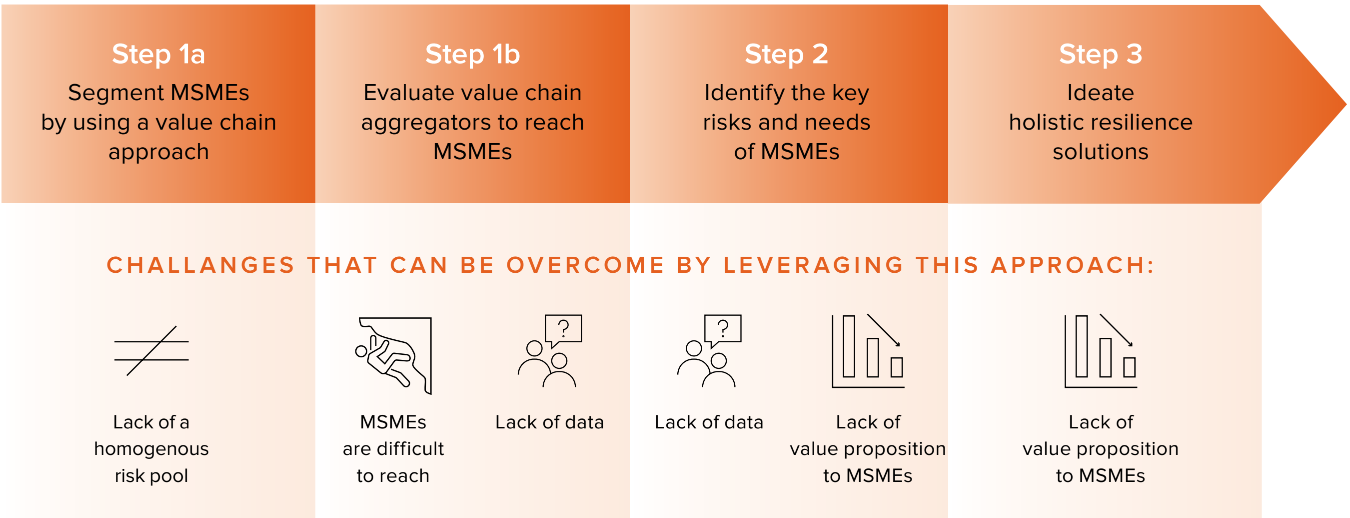
2 A value chain approach seeks to understand the firms that operate within an industry, as well as their specific activities and functions, and then map them from the creation of a product to its end destination.

3 An aggregator refers to an actor/entity which clusters or bands together MSMEs with similar needs, wants, risks and realities on the basis of providing them with similar/the same product or service. Examples include a supplier that distributes products to multiple MSMEs; a digital platform that MSMEs use to sell or source goods; or even an industry association or meeting platform.

Figure ii: Value chain segmentation approach to effectively serving MSMEs



Source: Authors' analysis.

Three value chains were selected and prioritized for both Malaysia and Thailand as target countries. To do so, all economic sectors and their value chains were assessed and their key characteristics were analyzed. In Malaysia, wholesale and retail, food and beverage, and electrical and electronics value chains were prioritized. In Thailand, the focus was on natural rubber, accommodation and food, and retail and trade value chains . Table 1 summarizes the key characteristics of each.

Table 1: Summary of value chains selected in Malaysia and Thailand

MALAYSIA	THAILAND
Wholesale and retail value chain	Natural rubber value chain
• Contributes 16.5% of gross domestic product (GDP) • Hosts 414,019 MSMEs • Retail employs over 1 million people • Some degree of homogeneity • Majority of MSMEs are aspirational • Suitable aggregation points exist.	• Contributes 8.7% of GDP and 4.9% to exports • Hosts 87,000 MSMEs • Employs 6 million people • Not homogenous, but has homogenous actors • Majority of MSMEs are aspirational • Suitable aggregation points exist.

MALAYSIA	THAILAND
Food and beverage value chain • Contributes 2.7% of GDP • Hosts 165,000 MSMEs • Employs 793,8000 people • Some homogeneity • Several MSMEs are aspirational • Suitable aggregation points exist	**Accommodation and food service value chain** • Contributes 18% of GDP • Hosts 259,567 MSMEs • Employs 2.9 million people • Not homogenous, but has homogenous actors • Majority of MSMEs are aspirational • Suitable aggregation points exist.
Electrical and electronics (E&E) value chain • Contributes 38% to exports • Hosts 1,701 MSMEs, 90% of total E&E companies • Employs 590,000 people • Largely homogenous • Majority of MSMEs are aspirational • Suitable aggregation points exist.	**Wholesale and retail trade value chain** • Contributes 6% of GDP • Hosts most MSMEs in Thailand • Employs 2.4 million people • Heterogeneous but with homogenous actors • Suitable aggregation points exist.

Sources: Asian Development Bank (2022); Bank of Thailand (2023a); DOSM (2016a); DOSM (2016b); DOSM (2019a); DOSM (2023a); DOSM (2023c); MSIA (2022); Poapongsakorn et al. (2019); Phoonphongphiphat (2022); THNSO (2012); World Bank (2022a).

Key insights from applying the new approach to Malaysia and Thailand

MSMEs in the selected value chains face several cross-cutting risks. Many risks faced by MSMEs in the selected value chains are country-specific and/or value chain-specific, such as, for example, electrical fires in the electrical and electronics value chain in Malaysia. However, cross-cutting risks also exist, including climate risk - which manifests in all value chains, cash flow and liquidity are a widespread challenge, and health risk/risk of injury for business owners and employees.

Despite these risks, and the attractiveness of these value chains for insurers, MSMEs are not currently using insurance. Traditional insurance products do not meet MSMEs' needs and appropriate and innovative distribution methods have not been used to reach MSMEs. Insurers' primary distribution channels (agents and brokers) are not incentivized to reach MSMEs, and insurers often have insufficient data and information to develop appropriate products. Moreover, in insurers' experience, MSMEs are not interested in or do not fully understand the value of insurance.

Interdependencies between value chains such as agriculture, manufacturing and retail are often overlooked. Risks faced by MSMEs in one value chain can threaten the survival of MSMEs in others: for example, when floods impact the natural rubber value chain, supply chain disruptions can happen in manufacturing. Insurers are not currently taking a holistic view of these interconnections. Doing so could (1) highlight risks that threaten MSME survival across an economic sector; (2) illustrate where new solutions are needed; (3) increase the resilience of multiple MSME value chains; and (4) help identify other MSME clusters where commercial value exists, such as in the logistics value chain.

Digitalization is being used as a tool to make MSMEs more resilient. Public sector and private sector actors are leveraging digitalization to increase MSME productivity, to integrate MSMEs into local and international markets and to cut MSME costs. For example, the Tourism Authority of Thailand has launched a project to improve Thailand's digital footprint and image and has partnered with international payments actors to increase payment reliability and align with tourists' preferences (TAT, 2023). However, digitalization is not a silver bullet, and MSMEs need holistic solutions that allow them to mitigate risk and address it when it manifests.

Digital platforms are also emerging as key aggregators in both Malaysia and Thailand. Current insurance distribution channels (brokers and agents) neither effectively reach MSMEs nor successfully convey the value of products. To reach MSMEs, insurers need to identify alternative distribution partners. Aggregators such as digital platforms are ideal since they already have existing MSME networks and are increasingly used by MSMEs in key value chains. Moreover, many digital platforms already have financial relationships with MSMEs, which could be leveraged to withdraw premiums. Insurers could partner with platforms such as Grab or Uber Eats to provide motor accident insurance, or could leverage inventory data from digital wholesaler platforms to estimate adverse impacts of climate hazards such as floods.

Consumer research and primary data collection are needed to understand and better address MSME risks. Desk research and KIIs have shown the alternative approach has significant value for insurers and other operators, but due to limited publicly available data, private and public institutions will need to test their holistic solutions with MSMEs, through (a) consumer research, to ensure that solutions match MSMEs' risk profiles and needs, and (b) market re search to help articulate market segmentation based on a value/sector approach.

In Malaysia and Thailand, ample opportunities exist for holistic risk solutions. Three types of opportunities arose in each value chain:

- Bundled insurance, combining existing insurance solutions to provide businesses with more customized solutions.
- Combining risk mitigation tools with risk transfer solutions (insurance) to allow businesses both to mitigate and address risk.
- Leveraging alternative distribution partners (aggregators) to reach MSMEs more effectively and serve them more efficiently.

Selected risk solutions for Malysia and Thailand are summarised in Table 2 below.

Table 2: Summary of holistic resilience solutions in Malaysia and Thailand

VALUE CHAIN	RISK	POTENTIAL SOLUTIONS
All value chains	Climate change and seasonal hazard risks (mainly floods)	• Bundling different types of insurance, for example, combining property insurance with weather risk insurance
	Cash flow and liquidity management	• Combining business interruption insurance with business management solutions such as digital cash flow management systems and inventory trackers
	Health risk/injury	• Combining existing life insurance products or business interruption products with risk mitigation tools such as personal protective equipment (PPE) • Non-indemnity health cover • Safe working conditions training

VALUE CHAIN	RISK	POTENTIAL SOLUTIONS
Food and beverages (Malaysia) Accommodation and food services (Thailand)	Limited access to markets/limited consumer trust	• Partnering with booking platforms and other aggregators to enable access to digital markets
	Damage to property and goods in transit	• Combining goods-in-transit insurance with sensor-based cargo tracking devices
	Food spoilage and storage	• Shared cold storage facilities
	Damage to equipment	• Property insurance
Wholesale and retail (Malaysia and Thailand)	Inventory damage, loss, expiration and theft	• Combining anti-theft technology with property insurance • Partnering with e-commerce delivery platforms to insure products during delivery
	Limited access to markets/limited consumer trust	• Partnering with business-to-business (B2B) or business-to-consumer (B2C) platforms and other aggregators to enable access to digital markets for MSMEs • Leveraging e-wallet providers as distribution partners for risk solutions
Electrical and electronics (Malaysia)	Damage to goods	• Coupling early warning systems and fire and flood sensors with property insurance
	Infrastructure & demand volatility, supply chain interruptions	• Business interruption insurance • Access to real-time price and market information
Natural rubber (Thailand)	Crop losses due to floods, fire and pest	• Combining crop insurance with technologies such as early weather warning systems • Combining insurance and saving products with pest/disease identification apps and training

Recommendations for key stakeholders to enhance their approach to building MSME resilience:

- The public sector should create an enabling environment for innovation by adopting a flexibleand accommodating approach to promoting responsible innovation. Policymakers need to provide regulators with a clear mandate and support ecosystem development (infrastructure, skills, etc.), as well managing or mitigating large systemic risks such as natural hazards. Regulators should focus on signalling opportunities for innovation to the market (for example, providing guidance on digitalization and highlighting MSMEs as a focus sector); ensuring clarity around product licensing processes; promoting innovation platforms and tools (such as sandboxes and innovation hubs); and monitoring the risk of new partners and types of actors in the insurance value chain.

- The private sector needs to provide appropriate, affordable and accessible risk solutions to MSMEs. For insurers, this will involve better understanding and segmenting MSMEs, partnering with other key players, developing new solutions, leveraging alternative distribution partners and taking advantage of trends. Aggregators will also need to help reach MSMEs with effective risk solutions by partnering with insurers or developing and launching their own products.

- The development sector should spotlight the need for and value of enhancing MSME resilience, while enabling coordination and collaboration between key actors. This includes conducting research to provide a solid evidence base for private and public sector players, convening actors and promoting key trends and approaches to enhancing MSME resilience. The development sector can help catalyse the development of a common innovation agenda aimed at increasing the resilience of MSMEs.

1 Introduction

Micro-, small and medium-sized enterprises (MSMEs) are key engines of growth in the economies of the Association of Southeast Asian Nations (ASEAN). MSMEs account for 97.2 to 99.9 percent of total establishments in ASEAN Member States (ASEAN, 2023a), including in Malaysia and Thailand, the two focus countries for this report. In Malaysia, MSMEs make up 97.4 percent of total enterprises and contribute 38 percent of GDP, while accounting for 48 percent of employment (SME Corporation Malaysia, 2022). In Thailand, MSMEs are 99.6 percent of all enterprises, contributing 35 percent of GDP and 72 percent of employment (OSMEP, 2022). MSMEs provide primary sources of income and livelihoods for millions. They also play a pivotal role in several value chains by facilitating access to a variety of products and serving local communities.

However, a variety of risks threaten MSMEs' survival and undermine their ability to sustainably contribute to the region's economic growth. MSMEs face interconnected challenges such as limited resources (including knowledge, capital and technology), high competition, limited access to markets, and barriers to accessing finance (such as limited data on their own credit history, etc.). These challenges impede their ability to mitigate and manage risks associated with natural disasters, pandemics, supply chain interruptions, damage to property, and injury and health hazards. As a result, many MSMEs struggle or fail to remain operational. In Thailand, for example, Bloomberg predicted that 80 percent of SMEs were at risk of going bankrupt by the end of 2021 due to the impact of the COVID-19 pandemic (Yuvejwattana, 2021). The risks facing MSMEs, and their limited ability to mitigate these risks, are a significant development challenge in that they have the potential to undermine MSMEs' contribution to economic growth, employment and access to resources in local communities and value chains.

MSMEs are also highly vulnerable to climate change. Climate change was flagged as one of South-east Asia's top three security concerns in the annual State of Southeast Asia Survey 2020 (Tang et al., 2020). The region is among the world's most vulnerable to climate change impacts such as droughts, floods, increased temperatures and sea level rise in highly populated coastal regions (UNFCCC, 2023). For MSMEs, climate change's impacts exacerbate many of the risks listed above, since they can lead to significant damage to property and goods, supply chain disruptions and injury, substantially threatening business continuity. However, the lack of data and information available on the full impact of climate change on MSMEs in ASEAN, and in Malaysia and Thailand specifically, represents a key challenge to understanding and mitigating the risks. According to KPMG (Oy Cheng, 2020), climate change risks faced by MSMEs in Malaysia remain unaddressed because these enterprises do not have sufficient awareness or understanding of the ways in which climate change can affect their businesses. Similar issues are observed in MSMEs across the region; many have neither the capacity nor the technical support to assess the impacts of climate change on their businesses (UNFCCC, 2023).

Insurance can help build MSME risk management and resilience. The high vulnerability and potential failure rate of MSMEs in the ASEAN region, and particularly in the two focus countries, is partly a function of them facing a multitude of risks and having limited mechanisms to prevent and cope with those risks when they occur. Thus, effective, well-designed risk management solutions and insurance products can and should play a significant role in enabling MSMEs to fulfil their potential. Appropriate insurance solutions can help MSMEs to smooth consumption, build assets, absorb shocks and manage risks linked to unpredictable income (Gray et al., 2022), thereby building MSME resilience and contributing to national growth and employment objectives.

However, insurers have not yet reached their potential in serving MSMEs. Despite insurance's promise for building resilience, existing uptake levels among MSMEs are low. Based on limited available data, including FinScope surveys conducted in Cambodia, the Lao People's Democratic Republic, Myanmar and Thailand (FinMark Trust, 2013; FinMark Trust, 2014; FinMark Trust, 2015; FinMark Trust, 2018), it is estimated that less than 5 percent of MSMEs in the ASEAN region have any form of insurance. In Malaysia, approximately 90 percent of micro- and informal enterprises have no insurance coverage and 50 percent of SMEs are completely uninsured (Shafie and Chong, 2021). An untapped commercial opportunity clearly exists for insurers and other financial (and non-financial) service providers in serving MSMEs. However, existing products are often too complex and costly to meet the needs of smaller firms. One reason that insurers and other operators may struggle to develop products that can reach MSMEs is that MSMEs are extremely heterogenous: they vary widely in size and standing, location, types of risks faced, and insurance needs and preferences.

Insurers need to rethink their approach to insurance for MSMEs in order to address risks and improve resilience more effectively. To take advantage of the commercial opportunity and support the objective of building MSME resilience, insurers need to rethink their approach to product development and distribution. They need an alternative approach that targets MSMEs in a way that addresses their specific needs and risk profiles and enables them through holistic solutions that will (a) strengthen their ability to mitigate risks and address them when they manifest; and (b) strengthen the value proposition of insurance for MSME customers.

This report proposes and applies an alternative approach to building resilience for MSMEs in the ASEAN region, specifically in Malaysia and Thailand. The purpose of this report is to demonstrate the value of this approach to enable core stakeholders such as development organizations, insurers and value chain aggregators[4] to (a) build MSME resilience by developing holistic solutions; and (b) unlock and tap into the available commercial opportunity. As such, and with a high-level focus on the ASEAN region and deeper dives into Malaysia and Thailand, this report identifies:

- The specific MSME segments that have the potential to constitute a viable commercial business case and contribute towards national development objectives

- Potential innovative solutions that can meaningfully and effectively address the key risks faced by these segments, drawing on emerging technology and global examples

- Learning needs in specific MSME segments to enable them to be part of inclusive economic growth and build financial resilience.

This report has eight core sections in which these objectives are met (table 3).

4 An aggregator refers to an actor/entity which clusters or bands together MSMEs with similar needs, wants, risks and realities on the basis of providing them with similar/the same product or service. Examples include a supplier that distributes products to multiple MSMEs; a digital platform that MSMEs use to sell or source goods; or even an industry association or meeting platform.

Table 3: Structure of the report

SECTION	DETAILS
The MSME landscape in ASEAN	This section provides an overview of the MSME landscape in the ASEAN region, looking at the types of MSMEs in the region; how MSMEs are segmented; their role in the economy and in society; the key risks and challenges that they face; and their coping mechanisms (including an examination of insurance uptake).
Overview of MSMEs in Malaysia and Thailand	This section provides a more detailed overview of the MSME landscape in the focus countries, Malaysia and Thailand.
An alternative approach to risk solutions for MSMEs	This section outlines the alternative approach for developing holistic solutions for MSMEs. It provides practical guidance for insurers and other operators, such as insurtechs and digital platforms, on how to segment MSMEs by value chain, understand their risks and needs, develop holistic solutions and reach MSMEs with these holistic solutions.
Research methodology: value chain selection in Malaysia and Thailand	This section discusses the project methodology and illustrates how the approach outlined above was applied to Malaysia and Thailand – specifically to segment MSMEs and gather information to understand their risks and needs.
Developing value-driven risk solutions for Malaysia	This section details the findings for Malaysia. It has three subsections, each dedicated to one of the three selected value chains: the wholesale and retail value chain; the food and beverages value chain; and the electrical and electronics value chain. Each subsection discusses the value chain characteristics, risks and coping mechanisms and potential holistic solutions for that value chain.
Developing value-driven risk solutions for Thailand	This section details the findings for Thailand. It has three subsections, each dedicated to one of the three selected value chains: the natural rubber value chain; the accommodation and food services value chain, specifically in the tourism sector; and the wholesale and retail value chain. Each subsection discusses the value chain characteristics, risks and coping mechanisms, and potential holistic solutions for that value chain.
Recommendations to enhance MSME resilience Recommendations to enhance MSME resilience	This section offers key recommendations on how to enhance MSME resilience for each of the key stakeholder groups, based on the insights detailed in the sections on Malaysia and Thailand above.
Conclusion	This section concludes the report by providing a summary of the key insights and recommendations.

2 The MSME landscape in ASEAN

MSMEs are essential to the socioeconomic development of all ASEAN member states. The most recent data from 2020 suggest that there are over 70 million MSMEs in the ASEAN region, representing between 85 and 99 percent of all enterprises. Of these, the majority are micro-enterprises, with a relatively low share of medium-sized enterprises across the region as a whole (ACCMSME, 2022; OECD, 2018). On average, MSMEs contribute approximately 45 percent to each member country's GDP and approximately 10–30 percent of total exports (ACCMSME, 2022). In terms of development, these MSMEs employ approximately 85 percent of the labour force and are responsible for creating many new jobs (ACCMSME, 2022). According to the World Bank (n.d.), 7 out of every 10 jobs globally are created by small and medium-sized enterprises (SMEs). Thus, MSMEs have become a driving force of most countries' long-term inclusive economic growth-related goals.

MSMEs can be categorized according to several criteria. Globally, there is no single definition for MSMEs; in the ASEAN region alone, countries use several definitions for MSMEs. The majority use criteria such as number of employees as well as monetary indicators such as assets, sales turnover and revenue to categorize these businesses (ASEAN, 2024). Table 4 illustrates this diversity by providing a non-exhaustive list of the differing definitions, together with their key criteria, in selected countries from the region.

Table 4: Examples of MSME definitions in the ASEAN region

SECTOR	MICRO		SMALL		MEDIUM	
	N. of employees	Other criteria	N. of employees	Other criteria	N. of employees	Other criteria
MALAYSIA						
Manufacturing	1–4	Sales turnover < MYR 300,000 [$63,600][5]	5–74	Sales turnover MYR 300,000–15 million [$63,600–3.2 million]	75–200	Sales turnover MYR 15–50 million [$3.2 million–10.6 million]
Services and others	1–4	Sales turnover < MYR 300,000 [$63,600]	5–29	Sales turnover MYR 300,000–3 million [$63,600–636,000]	30–75	Sales turnover MYR 3–20 million [$636,000–4,200,000]
SINGAPORE						
Non-specific	≤ 200	Sales turnover ≤ SGD 100 million [$74.3 mil]	≤ 200	Sales turnover ≤ SGD 100 million [$74.3 mil]	≤ 200	Sales turnover ≤ SGD 100 million [$74.3 mil]
THAILAND						
Manufacturing	≤ 5	Annual income ≤ THB 1.8 million [$50,500]	≤ 50	Annual income ≤ THB 100 million [$2.8 mil]	≤ 200	Annual income ≤ THB 500 million [$14 mil]
Service and merchandising	≤ 5	Annual Income ≤ THB 1.8 million [$50,500]	≤ 30	Annual Income ≤ THB 50 million [$1.4 mil]	≤ 100	Annual Income ≤ THB 300 million [$8.4 mil]

Source: ASEAN (2024).

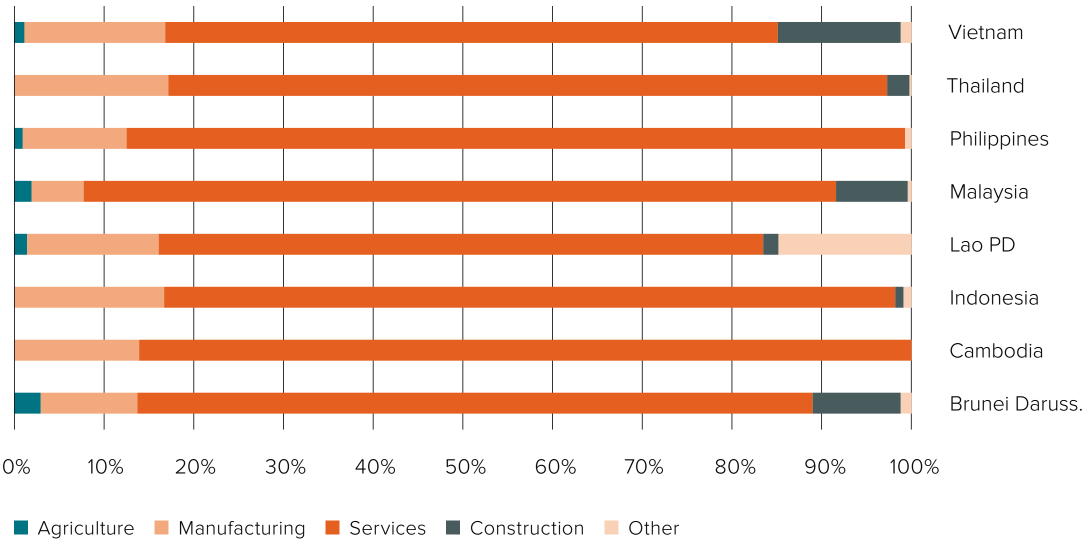
MSMEs may be collectively spearheading the region's economic growth, but they are by no means all the same. Across the ASEAN region, MSMEs operate in most economic sectors, including manufacturing, construction and agriculture. However, the majority are concentrated in the services sector, which accounts for 67–87 percent of all enterprises, as shown in figure iii.[6] Within this sector, a substantial share operates in the retail and wholesale subsector. While agriculture constitutes only a small share of MSMEs in official figures, it is worth noting that this may be underestimated due to lack of data and formalization across smallholder farmers. For example, in Thailand, farmers are only counted as MSMEs if they are registered as an entity (OECD, 2020).

5 Exchange rates from Malaysian ringgit (MYR), Singapore dollars (SGD) and Thai baht (THB) to US dollars ($) were calculated based on the exchange rate on 18 January 2024. Values are rounded.

6 The segmentation differs across the different countries, with some splitting the services sector into subsectors such as retail and transport. For ease of comparison, such sectors have been aggregated into one services sector.

Within each of these sectors, MSMEs hold a variety of positions in the value chain, but tend to predominantly be involved in labour-intensive and lower value added activities (OECD, 2018). For instance, in the palm oil sector, which is a large industry in countries such as Indonesia, Malaysia and Thailand, MSMEs operate primarily as smallholder farmers and are less represented in downstream activities such as refining, processing and trading (UNDP, 2020).

Figure iii: Sectoral distribution of MSMEs in select ASEAN countries in 2021, by country



Source: Authors' calculations based on data from Asian Development Bank (2022).

Despite the contribution they make, MSMEs in ASEAN face significant risks and challenges that threaten their survival and their contribution to growth. For example, across the region the COVID-19 pandemic caused significant damage to MSME income, bringing about severe drops in sales and revenue. Between March and April 2020, the total number of zero-revenue MSMEs increased from 36.0 to 48.8 percent in Indonesia, 35.5 to 62.8 percent in the Lao People's Democratic Republic and 27.2 to 38.9 percent in Thailand (Asian Development Bank, 2021)[7]. When unexpected events like this occur, MSMEs without proper risk management open themselves up to operational delays or disruption, legal challenges, damage to property and/or reputation, financial losses and even closure. This is a significant development challenge, which also threatens to decrease and undermine MSMEs' contribution to economic growth and employment. Some key risks and challenges are explored in more depth below:

7 By 2021, over the same time period (March–April), this had improved: by 5.1% in Indonesia, 2.1% in the Lao People's Democratic Republic and 8.8% in Thailand. However, the trickle-down effects of economic recovery were slower for MSMEs than for larger firms, and 30–56% of MSMEs continued to face more than a 30% drop in revenue as of March to April 2021, particularly in Thailand (Asian Development Bank, 2022).

- Natural hazards, disasters and climate risks. The ASEAN region is highly susceptible to natural hazards, accounting for 1 in every 10 natural disasters in the past 120 years (ACCMSME, 2022). ASEAN countries have been affected by droughts, floods, tropical cyclones, earthquakes, forest fires, tsunamis and epidemics. The region has a highly concentrated population and intense economic activities in coastal and urban areas, as well as a high dependence on agriculture and forestry. As a result, extreme weather events have caused extensive damage to property, assets and human life. In 2020 alone, the region experienced 405 natural hazards, affecting 19.3 million people and resulting in estimated economic losses of around $230 million (ACCMSME, 2022). The ASEAN Risk Monitor and Disaster Review ranks the Philippines, Indonesia and Myanmar as the most exposed ASEAN countries, while Singapore and Brunei Darussalam show lower exposure to natural hazards. Malaysia and Thailand show medium risk relative to the rest of the region, ranking 4th and 5th out of the 10 Member States (AHA Centre, 2022).

- Illness within the household/business. Because of the blurred line between personal and business expenses among MSMEs, many risks for self-employed individuals and small businesses are personal rather than business-driven. Demand-side research across Cambodia, the Lao People's Democratic Republic and Myanmar found "illness within the household" as the most cited risk for self-employed individuals and small businesses (Gray and Dunn, 2020; FinMark Trust, 2014; FinMark Trust, 2015; FinMark Trust, 2018).

- Informal sector. A large share of MSMEs operate in the informal sector. It is estimated that there are 61.15 million informal or semi-formal businesses in the region, as compared to 12.91 million formal businesses (OECD, 2020), and these informal and semi-formal businesses absorb about 78.6 percent of the workforce. Informal businesses and workers often have more irregular and lower earnings than their formal counterparts and may fall through the cracks of social protection systems, which makes them vulnerable to crises and disruption (ASEAN, 2022). In addition, because of their informality, they are often excluded from government programmes and financing, such as those set up for recovery after the COVID-19 pandemic, which can increase their vulnerability to shocks (OECD, 2020). On the other hand, the informal sector also poses a challenge for formal MSMEs. Across ASEAN countries, informal competition was the obstacle most mentioned by MSMEs in the World Bank Enterprise survey (OECD, 2022).

- Political instability. Political instability and sudden changes in government, policies or legislation can be detrimental to small firms (OECD, 2022). ASEAN member states have different political climates; countries such as Brunei Darussalam, Malaysia, Singapore and Thailand have largely avoided political extremes, while countries such as Indonesia, the Philippines and Viet Nam have experienced periods of both war and stability. Cambodia, the Lao People's Democratic Republic and Myanmar have been consistently unstable in a way that has held back growth (Perkins, 2021).

- Limited access to formal credit. Smaller businesses are often unregistered and lack the credit histories or records and verified data needed to acquire formal loans. In the Asian Development Bank's 2021 regional survey, 60 percent of MSMEs said they had difficulties obtaining loans from traditional institutions (Tan, 2022). While many ASEAN countries have specialized banks dedicated to MSMEs, access to formal financial services is still a challenge. Particularly in the lower-income countries of the region, MSMEs tend to experience credit rationing and high-risk premiums (ACCMSME, 2022)

- Limited access to international markets and procurement schemes. Smaller businesses often lack the resources, knowledge and networks to navigate the complexities of international trade. Barriers that MSMEs face in participating in international markets include difficulties in identifying buyers and in complying with quality standards and export procedures (ACCMSME, 2022). As such, SMEs are underrepresented as exporters, with a contribution to total exports estimated at around 10–30 percent (OECD, 2018). Informality, lack of resources and procedural knowledge also create barriers for MSMEs in participating equally in public and private procurement schemes. In many ASEAN states, the government is the largest purchaser of goods and services, making exclusion from procurement processes a significant missed business opportunity (UNDP, 2021; OECD, 2020).

- Low technology adoption. To increase their productivity and resilience, many MSMEs are enhancing their digital capabilities (ASEAN, 2023b). However, the uptake of digital solutions and the digitalization of processes in MSMEs in the ASEAN region remains low. Only 34 percent of MSMEs in ASEAN countries have adopted basic digital tools and processes to aid sales and marketing, and only 10 percent use advanced tools such as analytics and automation (Tan, 2022). Companies are often held back from digitization by restricted access to basic infrastructure such as electricity and internet connectivity; 72–85 percent of MSMEs in the ASEAN region operate in rural areas and have difficulties accessing a reliable internet connection, which disincentives them from digitizing business processes (ACCMSME, 2022). But business operations that are difficult to conduct online, as well as businesses that have not digitized, are particularly vulnerable to shocks such as pandemics. During the COVID-19 pandemic, 70.6 percent of MSMEs surveyed in the Philippines, 61.1 percent in the Lao People's Democratic Republic and 48.6 percent in Indonesia had to suspend operations completely (ACCMSME, 2022).

Of the many mechanisms to address risks and challenges in the ASEAN region, insurance for MSMEs remains undervalued both by insurers and governments. Almost no data or information are available on the prevalence of insurance and the use of innovative insurance solutions to address risks and challenges among MSMEs in the ASEAN region. Currently, there is no publicly available baseline by which to assess insurance uptake among MSMEs across the region. To help fill this knowledge gap, the ASEAN Coordinating Committee on Micro, Small and Medium Enterprises consulted more than 100 government and industry stakeholders across the 10 ASEAN Member States to assess how MSMEs have coped with crises and disasters after the COVID-19 pandemic. This report highlighted the fact that little attention is paid to MSME insurance both in the insurance industry and among governments in the ASEAN region, likely due to low awareness of MSME needs, limited and mismatched offerings and resource constraints (ACCMSME, 2022).

While the risks faced by MSMEs differ based on development stage, location, industry and other factors, insurers face the same challenges in both Malaysia and Thailand. Desk research and KIIs indicate that insurers face challenges in serving MSMEs, including the following:

- MSMEs are perceived neither to understand nor to prioritize insurance for their businesses.

- In Malaysia, many MSMEs prefer risk mitigation as opposed to risk transfer. Because of this, they perceive the ideal solution provider to be local and national governments, as opposed to insurers. For example, they expect local government to strengthen infrastructure to prevent damage associated with floods, rather than themselves taking out insurance cover in case of potential flood damage.

- Reaching MSMEs is difficult. Few MSMEs approach insurance companies, which means that insurers must leverage agents and brokers to reach them.[8] Agents are more comfortable selling personal insurance products than business insurance, and so tend to push products that they can sell in order to receive commission on the premium. Brokers, on the other hand, do not see the value of approaching MSMEs, since they perceive MSMEs as bringing in too little value.

- Insurance companies rarely have reliable and robust consumer data to shed light on MSME needs and risks. As a result, they do not know which needs also represent a business case.

- Insurers particularly struggle to provide business interruption insurance because few MSMEs have the information insurers require to illustrate MSME need, the impact of the risk, and so on.

8 Insurance is generally bought directly through an insurer or through an intermediary (broker or agent). An intermediary can provide access either to the products of one insurer or, if they are an independent intermediary, access to products from several insurers. In terms of roles, agents normally act as an agent of a particular insurer or insurers, whereas brokers normally act as an agent of the insurance buyer (Insurance Information Institute, 2023).

3 Overview of MSMEs in Thailand and Malaysia

This section examines the MSME landscapes of the two target countries, Malaysia and Thailand. It explores the country context and the role of MSMEs in each country. This forms the evidence base needed to segment MSMEs according to value chains and then prioritize value chains that stand to benefit most from holistic solutions while presenting the greatest commercial value for insurers and other operators.

3.1. Malaysia

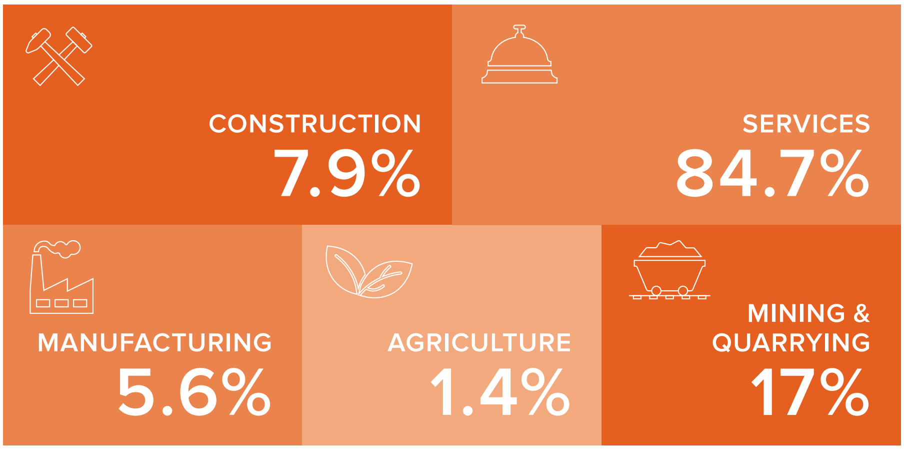
Malaysia is an upper-middle-income economy on the path to becoming a high-income country. Malaysia is one of the ASEAN's richest and most globally integrated economies. Since the 1970s, the Malaysian economy has transitioned from an agricultural and mining-based economy to an economy primarily based on industry and services (OECD, 2018). In 2022, the services sector accounted for 51 percent of GDP, while industry contributed 39 percent and agriculture 9 percent (World Bank, 2022c). Key exports include palm oil, electronics and electronic parts. Malaysia is often described as being caught in a middle-income trap, in part because the country has attracted many multinational corporations (MNCs) and become an exporting economy, but has not succeeded in facilitating the transfer of technology and knowledge from these MNCs to local industries to the same extent as some other countries have. Government initiatives now focus on expanding local businesses to address this gap and increase innovation (SME Magazine Asia, 2021).

MSMEs are a crucial driver of Malaysian national growth. The country has nearly 1.2 million MSMEs, accounting for 97.4 percent of total enterprises in 2022 and contributing 38 percent of GDP, 48 percent of employment and 10.5 percent of exports (SME Corporation Malaysia, 2022). Official statistics from the Department of Statistics Malaysia (DOSM) (2022) note the informal sector in Malaysia is relatively small in comparison to other countries in the region, with informal employment at 8.6 percent (13.3 percent including agriculture). However, insights from KIIs suggest that the informal sector is significant in services such as food and beverage, with many unregistered microbusinesses such as food stalls. According to DOSM, in 2022, MSMEs recorded GDP growth of 12 percent, surpassing overall national GDP growth of 9 percent, indicating that MSMEs are increasingly driving economic expansion (DOSM, 2023b). Increasing MSMEs' contribution to GDP growth has been identified as key in facilitating Malaysia's transition to a high-income country (World Bank, 2016a). To that end, Malaysia's Financial Inclusion Framework (2023–2026) strongly focuses on the need to support MSMEs and identifies access to financial services and products as a key lever for building their resilience (Bank Negara

Malaysia, 2023b). Other strategies for enhancing MSME resilience have included facilitating innovation, entrepreneurship and digitalization to enable MSMEs as a sustainable driver of growth (UNDP, 2023b).

The majority of MSMEs in Malaysia are concentrated in the services sector. As shown in figure iv, MSMEs operate across all subsectors in the economy, including construction, manufacturing, agriculture, and mining and quarrying, but the majority (85 percent) are in the services sector.[9] In fact, the top 10 subsectors in terms of numbers of MSMEs are all in services, as illustrated in figure v, with retail and wholesale trade and food and beverage services accounting for the most MSMEs. The majority of these are micro-enterprises (79 percent) and small enterprises (20 percent), with only 1 percent classified as medium-sized (SME Corporation Malaysia, 2022). MSMEs operate across the whole country, but there is a large concentration of enterprises in the capital, Kuala Lumpur, and the surrounding state of Selangor, accounting for more than one-third of the country's MSMEs (DOSM, 2016b).

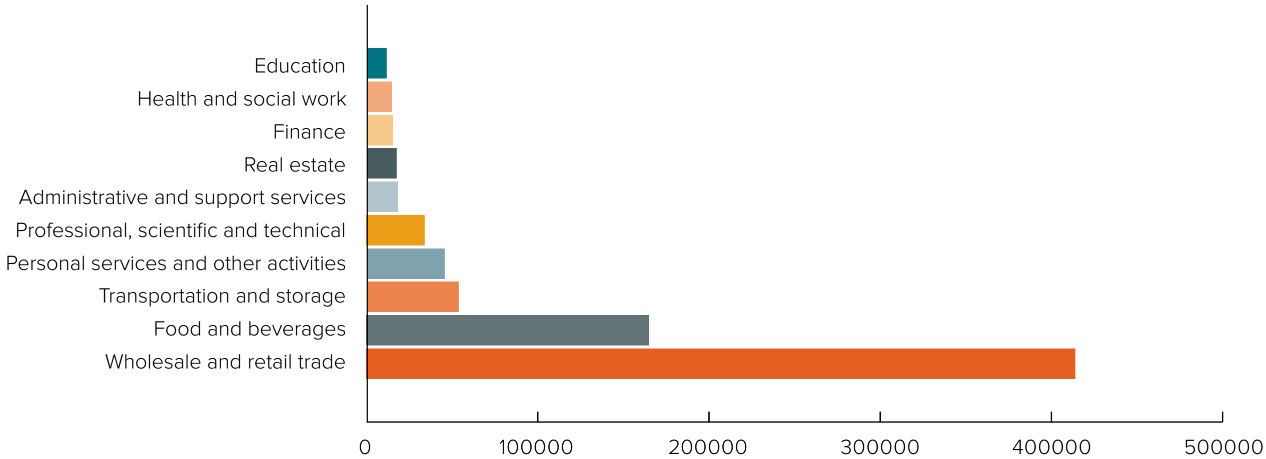
Figure iv: Sectoral distribution of MSMEs in Malaysia



Source: SME Corporation Malaysia (2022).

9 The Malaysian services sector is divided into four main groups of subsectors: (1) wholesale & retail trade, food & beverages, and accommodation; (2) information & communication and transportation & storage; (3) private health, private education, arts, entertainment & recreation, personal services & other activities; and (4) professional, real estate and administrative & support services.

Figure v: Top 10 MSME subsectors (by number of establishments)



Source: DOSM (2016b).

To boost the growth and expansion of MSMEs, the Government has launched several digitalization and innovation programmes. COVID-19 ushered in a rapid shift of economic activities to digital channels and e-commerce, but many MSMEs struggled to keep up. This, together with the impact of lockdowns, caused many MSMEs to fail, which had a negative impact on growth and employment. Subsequently, the Government of Malaysia prioritized digitalization efforts in their policy and strategic objectives, not only to recover from COVID-19, but also to catch up with their international counterparts in digital adoption and to stimulate more sustainable and resilient growth (PayPal, 2022). These initiatives includes the Rashid Hussain Bank (RHB) set of application programming interfaces (APIs) to assist SMEs in automating payments and reconciling accounts, as well as the MSME Digital Grant launched in 2021 (Tech Wire Asia, 2019; HSBC, 2023).

MSMEs in Malaysia face significant risks and challenges that limit their potential contribution to national growth. Despite the programmes aiming to build MSME reliance in Malaysia, the nature of the risks and challenges that MSMEs face continue to threaten their survival. These include, but are not limited to:

- Natural hazards and climate risks. The country is vulnerable to several natural hazards, including forest fires, tsunamis and cyclonic storms, landslides, earthquakes and haze. Most losses, though, are attributable to flooding, which contributes to an average annual economic loss of $39.9 million and on average happens 53 times per year. Moreover, several of Malaysia's major crops, such as rice, rubber, palm oil and cocoa, are very sensitive to rainfall and drought conditions. This especially impacts poorer farmers and communities that are least able to afford local water storage, irrigation infrastructure and other technologies for adoption, and negatively affects the sustainability of workers' living conditions. Climate change not only harms agricultural sectors, but also has an effect in urban areas, where rising temperatures are likely to damage productivity in sectors dependent on manual labour, such as the services sector, because of decreased labour productivity, cost of adaptation (such as air conditioning) and damage due to haze pollution. (World Bank, 2021a).

- Pandemics and epidemics. As Malaysian MSMEs are overrepresented in the contact-intensive services sector, they are particularly sensitive to disruptions such as pandemics and epidemics. This became clear during the COVID-19 pandemic when MSMEs were disproportionately affected (UNDP and Islamic Development Bank, 2023); an estimated 40.5 percent of Malaysian MSMEs had to suspend operations during COVID-19 (ACCMSME, 2022).

- Limited use of digital tools. Despite the initiatives discussed above, most MSMEs still use few and limited digital tools, with those they do use mainly focused on customer-facing functions such as social media presence. Far fewer leverage more complex productivity enhancing tools or end-to-end digital transactions (World Bank, 2022a; World Bank, 2022b).

- Shortage of skilled workers. The technological demand caused by the pandemic made it clear that the country has too few skilled workers. Industries such as electrical, food, chemicals, metal and rubber need skilled workers for automation and technology upgrades, but these workers are often poached by other countries in the region. The country's Small and Medium Enterprises Association (SAMENTA) estimates a deficit of 1 million–1.5 million workers, leading to potential losses of MYR 90 billion–135 billion (Poo, 2022).

Research suggests a low uptake of insurance among MSMEs, particularly among smaller enterprises. Insufficient insurance protection is an issue for all sectors in Malaysia, and to address it, the Government has introduced policies to make insurance more affordable. However, targeted efforts to address the specific insurance needs of different segments of the population are still needed (UNDP, 2023b). Data on insurance penetration among MSMEs are scarce and differ across sources. A study by the Islamic Development Bank and UNDP (2022) notes 90 percent of micro- and informal enterprises lack insurance coverage, while 50 percent of SMEs are uninsured. A survey of 1,529 formal SMEs by Bank Negara Malaysia (Kandasamy et al., 2018) found 54 percent had insurance coverage, while a survey by PWC (2023) found only 15 percent of SMEs have insurance/takaful coverage.[10] An SME Corporation Malaysia survey from 2023 found only 30 percent of MSME respondents have

10 Takaful (also known as Islamic insurance) is a form of insurance based on mutual cooperation and solidarity and is approved under Islamic jurisprudence or Sharia guidelines.

business insurance to protect their firms from natural hazards, which partly implies low-risk management measures[11] (SME Corporation Malaysia, 2024). According to KIIs, insurance uptake is limited as a result of both demand-side and supply-side issues:

- On the demand side, MSMEs are perceived to be less interested in, or unaware of, the value of insurance. Instead, they prefer risk mitigation measures, and thus often perceive local and national government as the ideal solution provider.

- On the supply side, on the other hand, key challenges include unfit products and services as well as limited distribution channels, with a heavy reliance on brokers, agents and banks, which are not always incentivized for or interested in approaching the MSME market.

3.2. Thailand

Thailand is the second-largest economy in ASEAN and has successfully graduated from a low-income economy to an upper-middle-income economy. Much of Thailand's economic success is rooted in strong growth and impressive poverty reduction efforts, driven by an export-oriented industrialization strategy supported by Foreign Direct Investment (FDI) (OECD, 2018). Services make up the largest contribution to GDP at 56 percent, followed by industry and agriculture, which contribute 35 percent and 9 percent respectively (World Bank, 2022). Thailand also boasts a vibrant tourism sector, hosting some of the biggest ports and airports in the ASEAN region, and is a leading producer and exporter of vehicles and vehicle parts. Despite this, like Malaysia, Thailand has struggled with a middle-income trap, due to competition with countries in the region that can offer lower labour costs. A key government strategy is thus to transition to higher value added activities, such as more advanced manufacturing (OECD, 2018).

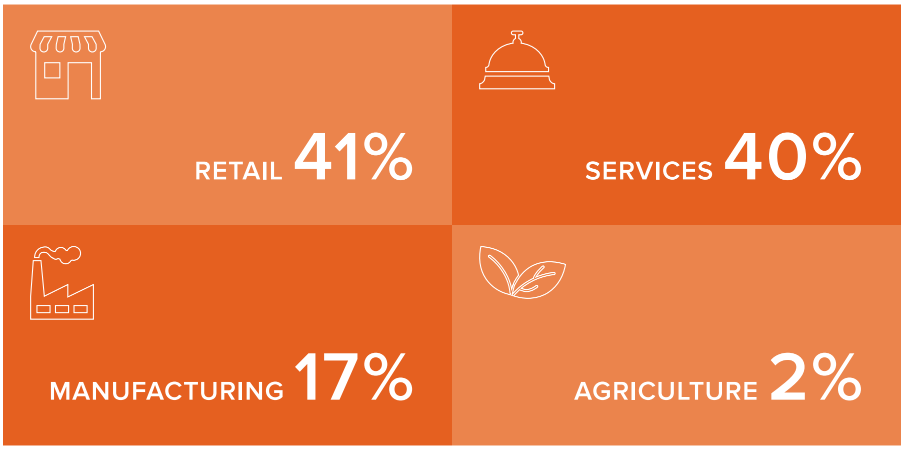
MSMEs have played a key role in ensuring that Thailand's growth is both sustainable and inclusive. In 2019, there were nearly 3.2 million MSMEs in Thailand, accounting for 99.6 percent of all enterprises and contributing 35 percent of GDP and 12 percent of exports. MSMEs also provided 72 percent of employment, making them integral to national development (OSMEP, 2022).

11 Breaking it down to state level, it is important to note that the lowest rates of insurance purchase across the country were found among MSMEs in states in the East Coast region, namely Kelantan and Terengganu, which are prone to flooding (SME Corporation Malaysia, 2024).

MSMEs play a pivotal role in economic inclusion and female empowerment. According to the Bangkok Post (Pathak, 2019), approximately 40 percent of MSMEs in Thailand are female-owned, which is especially significant since women-owned MSMEs are more likely to employ, retain, develop and promote female workers than those owned by their male peers, and are also more likely to have gender-inclusive policies (e.g., maternity leave) and to promote equal pay (UN Women, 2023). To reach national development goals, Thailand has made supporting MSMEs' efficiency and capacity a national priority in its fourth MSME promotion plan (2017–2022) (Charoenrat and Harvie, 2021).

Most MSMEs in Thailand operate in the services and retail sectors. The majority (85 percent) of MSMEs are micro-enterprises, while 13 percent are small enterprises and only 2 percent are medium-sized. They operate across all sectors in the economy, but as shown in figure vi, the majority are concentrated in retail (41 percent) and services (40 percent).[12] In terms of location, MSMEs are spread evenly throughout the country, with about one-third concentrated around the capital city of Bangkok.

Figure vi: Sectoral distribution of MSMEs in Thailand, 2022



Source: OSMEP (2022).

MSMEs in Thailand face significant barriers to growth and business expansion. The majority are informal and have limited capabilities in raising and managing capital (Charoenrat and Harvie, 2021). This hinders their ability to mitigate risks and to expand their businesses. Key risks facing MSMEs in Thailand include:

12 The services sector in Thailand is heterogenous in nature and has several subsectors: (1) wholesale and retail; repair of motor vehicles and motorcycles (the MSME sectoral distribution keeps retail separately); (2) information and communication; (3) transportation and storage; (4) financial and insurance activities; (5) real estate activities; (6) professional, scientific and technical activities; (7) administrative and support service activities; (8) accommodation and food service activities; and (9) arts, entertainment and recreation (NESDC, 2023).

- Climate risks and natural hazards. Thailand is vulnerable to natural hazards such as floods, tsunamis, storms, droughts, landslides, forest fires and earthquakes, many of which are becoming considerably more severe due to climate change. The most significant (and expensive) risk is flooding. Thailand is among the 10 most flood-affected countries in the world; on average, the country experiences 78 floods per year and the average annual loss associated with flooding in Thailand is approximately $2.6 billion (World Bank, 2021b). The macroeconomic costs of flood are expected to grow: a 1-in-50 year flood in 2030 would likely cost more than 10 percent of GDP in lost production (World Bank, 2023).

- Pandemics and epidemics. Thailand's economy is highly reliant on the tourism sector, which accounts for one-fifth of GDP and 20 percent of employment. This means the economy is highly vulnerable to shocks such as COVID-19. During the pandemic, a key problem for MSMEs, especially in the tourism sector, was their inability to shift business online; the Bank of Thailand calculated that 63 percent of jobs in Thailand could not be performed remotely, particularly those in informal MSMEs (GSM Association, 2022). As such, 41 percent of MSMEs were forced to suspend operations during the pandemic, while many experienced significant revenue losses (ACCMSME, 2022).

- Health risks and an aging society. Thailand faces health risks such as vector-borne diseases (such as MERS and Zika), communicable diseases (such as tuberculosis) and malaria. Moreover, the country has an ageing population: one in five individuals are aged 60 or older. Health care inflation rates are at 5–8 percent annually, and the expectation of rising healthcare expenses is a specific concern for MSMEs, given the often-blurred line between household and business expenses (UNDP, 2023a).

- High competition. The Thai manufacturing sector has a relatively low level of sophistication and Thai firms tend to specialize in low-level final assembly, with little production of intermediate parts. As a result, they struggle to compete in the region against countries such as China and Viet Nam with high price/wage competitiveness and countries with high value added and innovation such as Japan and South Korea.

Despite MSMEs' contribution to growth and their need for risk mitigation products, the insurance market for MSMEs in Thailand is relatively undeveloped. Thailand's insurance industry is composed of life insurance, which represents approximately 70 percent of the market, and non-life insurance, which is dominated by motor insurance (UNDP, 2023a). Compared to regional and global averages, penetration and density are relatively low. KIIs indicate that this is especially true for MSMEs, largely because of mismatched products that do not match MSME needs or risks and because of limited awareness of insurance products.

- Mismatched insurance products. Many low-income individuals in Thailand are small business owners or informal workers who are not eligible to benefit from social security or employers' insurance, leaving them vulnerable to shocks. Access to protection and risk mitigation via microinsurance is thus crucial (UNDP, 2022). However, the market for inclusive insurance, including microinsurance, is nascent.[13] Insurers have not yet significantly broken into the microinsurance market, so few insurance products are directed towards MSMEs (UNDP, 2023a). Farmers are another group that bear high income risk due to natural hazards and climate change. Crop insurance is relatively well established; in 2020, 72 percent of rice cultivation and 28 percent of maize cultivation were insured. But although government-subsidized insurance is available for rice and maize farmers, this option is not extended for crops such as cassava, sugar cane and rubber trees (UNDP, 2023a).

- Limited awareness of insurance and risk mitigation products. KIIs indicated that low levels of insurance literacy and lack of awareness of insurance are two primary challenges holding back demand for insurance. Even when they are aware that products exist, low-income groups may place low priority on financial planning and risk management. Cultivating a risk management culture among individuals and businesses is a key strategy for Thailand's insurance regulator, the Office of Insurance Commission (UNDP, 2023a).

Lack of distribution channels worsens the problem of inadequate insurance products. The insurance industry in Thailand relies heavily on distribution via agents, brokers and bancassurance.[14] But agents must seek out the client to make a sale directly, and according to KIIs, agents in the Thai market have limited awareness of what business insurance products entail and how they can benefit businesses, which means that agents struggle to make a sale when reaching out to MSMEs. In addition, agents are not well incentivized to reach out to MSMEs: since their work is commission-based, they are often more inclined to target larger institutions and prioritize easier products to sell. To address the problem, some microinsurance products have been made available at convenience stores and Government Savings Banks and in post offices (UNDP, 2023a). However, other, alternative aggregators remain underutilized to reach MSMEs.

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13 Inclusive insurance covers excluded and underserved groups (International Association of Insurance Supervisors, 2015).

14 "Bancassurance is the process of using a bank's customer relationships to sell life and non-life insurance products" (World Bank, 2012).

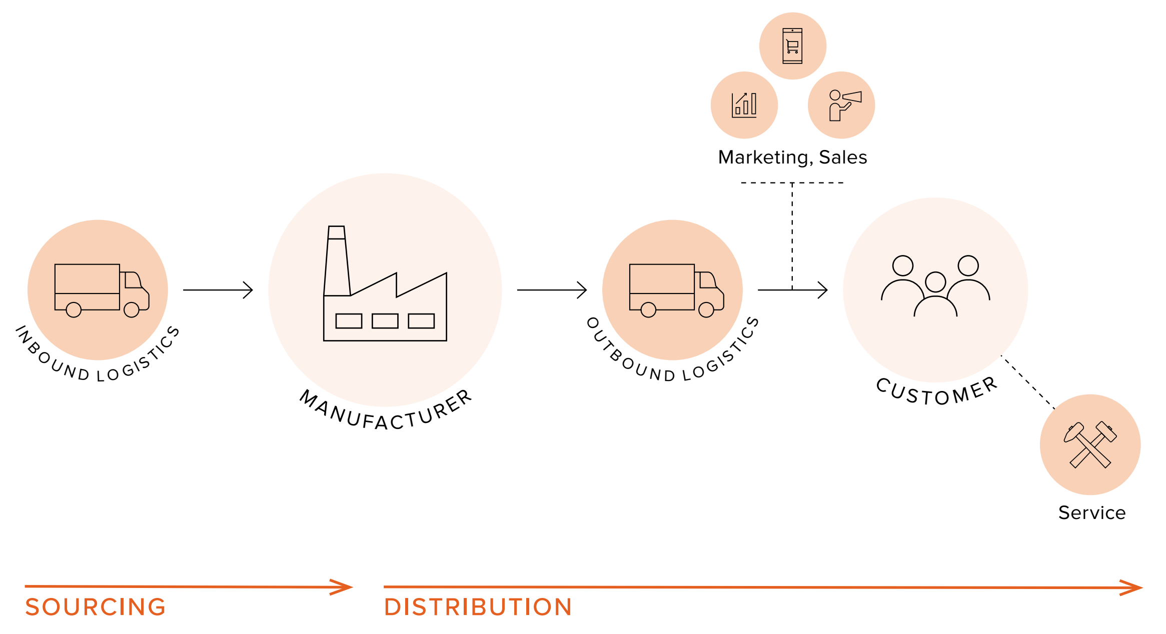
4 An alternative approach to risk solutions for MSMEs

©UNDP Indonesia

Reaching MSMEs in the ASEAN region with risk solutions requires a new approach. As discussed in chapter 3, uptake of insurance among MSMEs in the ASEAN region is low, including in the two target countries. This is in part due to the ineffective approach taken by insurers to develop risk transfer products that meet MSME needs, as well as the inefficient mechanisms used for reaching MSMEs. According to KIIs, insurance companies in Malaysia and Thailand tend to offer limited and untargeted solutions, predominantly life insurance and business interruption cover. The majority do not actively segment MSMEs, and they primarily use agents and brokers to reach MSMEs. This approach results in mismatched policies and in neglecting a large portion of the MSME market. An alternative approach is needed: specifically, an approach that leverages the use of value chains.

Figure vii: A value chain approach

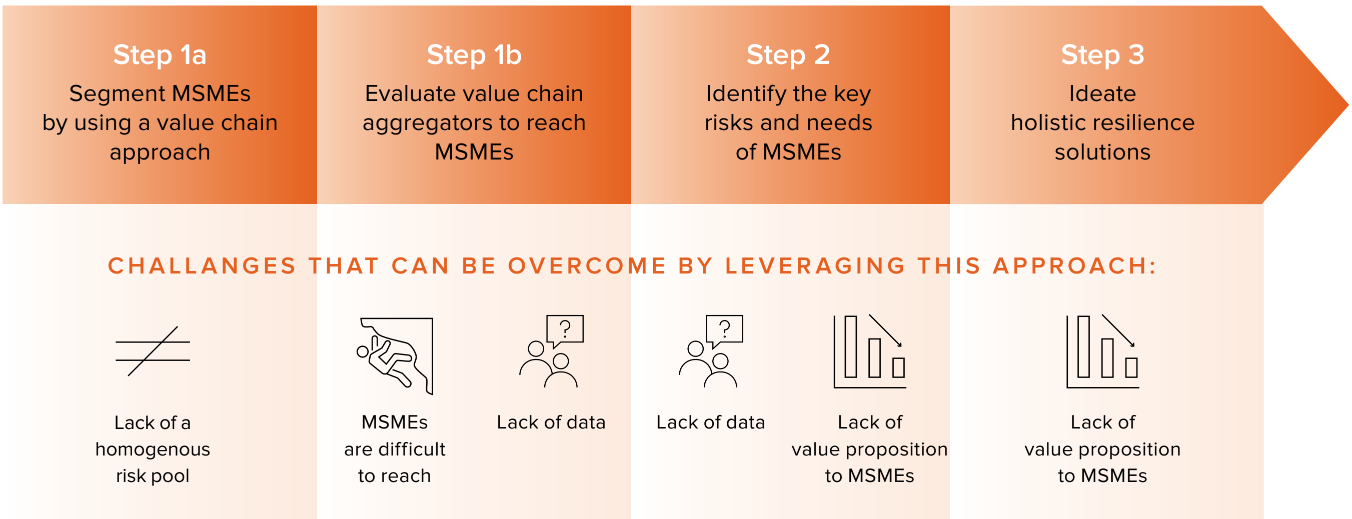
A value chain approach: A value chain approach seeks to understand the firms that operate within an industry, as well as their specific activities and functions, and then map them from the creation of a product to its end destination (starting from conception, through production, and to end market buyers). A typical manufacturing value chain, for example, looks as follows:



Source: Adapted from Jenkins (2022).

This section details an alternative approach to enhancing MSME access to growth and resilience opportunities in the ASEAN region. Step-by-step guidance is offered to enable insurers and other players to identify opportunities to enhance the perceived and actual value of risk solutions to MSMEs. This approach is visualized in figure viii, which is followed by a description of each step.

Figure viii: Value chain segmentation approach to effectively serve MSMEs.



Source: Authors' analysis.

Step 1a: Segmenting MSMEs by using a value chain approach. MSMEs vary significantly in terms of operations, size, type, income, needs, etc. This heterogeneity makes them difficult to evaluate as one holistic group. Hence, it is essential to define and segment them in order to develop an intervention that adds value to the business, society and the economy. Insurers should start by looking at the most useful parameters by which to segment MSMEs: survivalist vs. aspirational and economic activity/value chain (table 5). Together, these two parameters will help to highlight key value chains.

Table 5: An approach to segmenting MSMEs

Survivalist vs. aspirational MSMEs	Economic activity/value chain
The first parameter by which to segment MSMEs is purpose: specifically, whether the MSMEs are driven to sustain livelihoods or to grow. Survivalist MSMEs are primarily focused on earning an income to support and maintain their own livelihoods. Aspirational MSMEs, on the other hand, are usually slightly larger and see their business as more than just a means of survival – that is, as having the ability to grow. These MSMEs are also more likely to distinguish between personal and business expenses and risks and, unlike survivalists, could have a need for enterprise-specific insurance solutions as well as for personal risk cover. For an insurer, aspirational MSMEs are therefore more likely to see the value in holistic risk solutions and are more likely contribute to growth and employment. Determining where to find aspirational MSMEs can be done by researching which economic sectors contribute most to GDP and then looking at how many, and which, MSMEs are present. In applying this parameter, economic sectors that contribute significantly to growth will emerge.	The second parameter by which to segment or cluster MSMEs is by determining their primary economic activity, specifically their value chain. This will further disaggregate the MSMEs. Mapping economic sectors/value chains will allow for the identification of subgroups of MSMEs that have similar business needs and that often face similar challenges and risks. This approach also allows an insurer to assess which sectors contribute to the economic development and welfare of individuals/MSMEs and could produce the greatest economic dividends from improved MSME resilience. This clustering can enable insurance providers to develop tailored products that address the specific needs of each value chain, or enterprise segment within a specific value chain, while also getting an indication of the business case for approaching this cluster of MSMEs. This approach is further detailed in table 6. In applying this parameter, the value chains within the economic sectors, identified under parameter 1, will emerge.

Sources: Authors' analysis and Gray et al. (2022).

Once several value chains have been highlighted and listed based on the parameters in table 5, it is possible to assess which of these value chains offer a strong business case (that is, allow for tailored product design and for the identification and leveraging of suitable distribution partners). The criteria listed in table 6 should be considered when assessing the business case for each value chain.[15]

15 The criteria listed in table 6 are not exhaustive; these are the most complementary to the approach proposed here. Additional criteria could include segmenting MSMEs by geography, since some may rely on products, industries and infrastructure directly available within their vicinity.

Table 6: Criteria for value chain selection and prioritization

INDICATOR	VALUE OF THE INDICATOR
Number of MSMEs in the value chain	This criterion indicates the potential market size. Therefore, this serves as an indicator of whether there is a business case for these MSMEs.
Presence of aspirational MSMEs	Of the number of MSMEs identified in the criterion above, are the majority aspirational or survivalist? Aspirational MSMEs have business insurance needs and are able and motivated to grow. Therefore, the presence of aspirational MSMEs can help determine whether there is a business case to develop/amend products to serve them and/or increase efforts to reach them (in terms of product distribution). This criterion is essentially applied twice: once on a macro level as indicated in table 5, and then again within the value chains identified.
Contribution to GDP	This criterion is an additional proxy for potential market size.
Contribution to exports	This criterion is a proxy indicator for understanding the profitability of MSMEs in the value chain. It also indicates how organized MSMEs in this value chain are. More organized MSMEs are more likely to be aspirational and are more aware of their needs, risks and challenges.
The homogeneity of MSMEs	This criterion is answered by assessing the high-level value chain structure, identifying its components, and then looking at the number of MSMEs per component. If the majority of the MSMEs in the value chain, or the majority of the MSMEs in a subgroup within the value chain, are homogenous, then they are likely to face the same challenges and risks, and so often require the same product. This calculation will indicate the market size and business case, while also highlighting unique characteristics and potential challenges in reaching these MSMEs.
Tip: When carrying out this step, it is useful to plot these criteria in a table, with the criteria on the x-axis and the value chains on the y-axis. This allows for easy comparison and assessment. Chapter 5 offers an example of how this was applied under this project.	

Source: Authors' analysis.

Step 1b: Evaluate aggregators that can reach MSMEs. As well as assessing value chains using the criteria in step 1a, a parallel step to prioritizing MSME value chains is to identify suitable actors that can aggregate segmented MSMEs for the purpose of product/service distribution. These could include associations, digital marketplaces, payment platforms, lead companies and chain-based stores. Aggregators are key potential alternative distribution partners that can bridge the gap between insurers and MSMEs, to better reach MSMEs and overcome the distribution challenges related to this segment. These aggregators are essential not only to selecting the most coordinated value chain, but also to determining the most commercially viable market with existing structures to sell products.

Aggregators typically have an existing and trusted relationship with a network of MSMEs, offering points of aggregation through which insurance policies can be distributed and marketed to a relatively homogenous group. Moreover, aggregators often have the added advantage of having gathered data and information on a particular cluster of businesses which can be leveraged to develop holistic and appropriate solutions. Therefore, the ideal type of aggregator is one that has an existing payment or financial relationship with MSMEs, since this will allow for an easy channel through which premiums can be withdrawn. Two examples of partnerships between insurance companies and value chain aggregators are outlined in Box 1. The assessment of the presence of suitable aggregators is thus an important step for finalizing value chain selection, in addition to the assessment done under step 1a. Exploratory discussions with different value chain stakeholders to further assess their suitability as distribution partners should form part of the value chain selection process.

Box 1: Case studies on leveraging alternative distributors.

CASE STUDIES: Leveraging alternative distributors

Britam and Kenya Tea Development Agency

Britam (an insurance and investment holding company) partnered with Kenya Tea Development Agency (KTDA) in 2007 to launch a hospital and funeral microinsurance policy for small-scale tea farmers. KTDA is a private company owned by about 600,000 smallholder tea farmers managing 68 tea factories. About 120,000 of these farmers opted into the product. In this partnership, Britam pays the claims and carries the risk, while KTDA collects premiums and distributes the products through its tea factories via its fully-owned subsidiary, Majani Broker. The premiums are deducted from KTDA members' tea income on a monthly or annual basis.

Britam and Twiga

Britam and Kenyan B2B e-commerce platform, Twiga Food, partnered in 2020 to develop a business interruption insurance cover targeted at small businesses. The insurance product aims to protect retailers against unforeseen risks and losses in income which may arise due to key personnel hospitalization, fires and riots. Small retailers who have joined Twiga's marketplace are able to access the insurance product via its mobile app.

Source: Microinsurance Network (2022); Koven et al. (2014); Igadwah (2020).

CHECK POINT

After implementing step 1a and 1b, insurers and other players should have a robust evidence base from which to select and prioritize the MSME segments that constitute a promising business case. Insurers and others can then explore the potential to design tailored solutions or alternative distribution methods to reach these MSME segments.

Step 2: Identify the key risks and needs. Often, products offered to the MSME segment are standard off-the-shelf products and/or are based on broad assumptions regarding the needs of the MSME sector. This results in the design of ill-suited products. Once specific MSME value chains have been selected, it is possible and necessary to investigate the characteristics, needs, challenges and risks of each value chain, which is critical to ensuring that the product offering aligns with the actual resilience needs of MSMEs and the aspects for which MSMEs have a genuine appetite. Where possible, this can be done through desk research, such as by tapping into national data sets on MSMEs. However, granular data are rarely available, so the most effective method is through conducting demand-side/qualitative research to engage these groups or subsets. Additionally, discussions with key value chain actors, such as aggregators, regulators and tech-enabled ecosystem enablers (including insurers), will provide useful insight into the risks, realities, challenges and needs of the target market. This will allow insurance companies and others to model their risks more accurately.

Step 3: Consider more holistic resilience solutions. MSMEs often have negative perceptions towards insurance based on their experience or perception of lack of realized value from insurance. This often stems from common perceptions in the market, based on poor experiences in past claims, or simply on the lack of tangible benefits to make an insurance policy worth its monthly premium (Gray et al., 2022). Using the information gathered in steps 1 and 2, insurers are now able to identify groups of MSMEs with similar needs, understand their specific risks, and consider solutions and distribution methods suited to these specific MSME segments. In developing/amending products, a holistic approach towards strengthening MSME resilience is key. Three types of solutions can be useful:

- The first type of opportunity is bundled insurance. This solution combines relevant and complementary existing insurance solutions to provide businesses with more customized solutions for their risk profiles.

- The second type of solution is combining risk mitigation tools, specifically technological solutions, with risk transfer solutions (insurance) in order to allow businesses to mitigate a risk, but also to address that risk if it should manifest. As part of a quantifiable, holistic resilience solution, traditional risk transfer solutions can be combined with new technologies, such as sensor-based cargo tracking devices that record the location of cargo as well as the temperature, light and humidity to which the cargo is exposed (offered by companies such as Parsyl).

- The third type of solution entails leveraging alternative distribution partners, specifically aggregators, to reach MSMEs more effectively and to serve them more efficiently by leveraging existing payment structures.

Box 2 provides case studies on how insurers can combine insurance with technology to manage risk. Integrating low-tech or non-technological better practices and solutions, such as training and information-sharing, adoption of security measures, or improved inventory storage, are also important to consider in enhancing MSMEs' risk management. In this way, insurers can transition from being providers of insurance to being risk management partners by offering value-driven and tangible product offerings to MSMEs while also lowering their risks of losses.

Box 2: Case studies: Bundling insurance with technology to manage risk

CASE STUDIES: Bundling insurance with technology to manage risk

Parsyl provides goods-in-transit insurance for perishable cargo such as vaccines. Its insurance product is bundled with quality-monitoring technology. The sensors monitor the cargo's temperature, humidity, location and exposure to light. This provides significant and immediate customer value by reducing spoilage.

Lumkani is a social enterprise in South Africa which seeks to address the challenge of fires in urban informal settlements and townships. It provides early-warning heat detector sensors to mitigate the risk of fire, bundled with fire insurance underwritten by Hollard. The sensors alert customers to fire outbreaks. If after 20 seconds the sensor still senses a fire, it automatically contacts the fire department, as well as signalling to all devices within a 60-metre radius, thereby encouraging a community response.

Source: Gray and Hougaard (2021); Parsyl (2023); Lumkani (2023).

This approach is beneficial for both insurers and MSMEs. The approach proposed above offers insurers an opportunity to better identify, segment and understand MSMEs and their unique realities, enabling insurers to tap into this market and serve MSMEs with appropriate products through effective distribution methods. In this way, it offers insurers a way of expanding their business and better serving their clientele. By doing so, the approach also has the potential to benefit MSMEs by better speaking to their needs and enhancing their resilience, thus ultimately contributing to developmental objectives. The following section outlines the application of this approach to Malaysia and Thailand.

5 Value chain selection in Malaysia and Thailand

This section demonstrates how the approach delineated in chapter 4, visualized in figure ix, was applied to Malaysia and Thailand.

Figure ix: Summarized value chain segmentation approach to effectively serve MSMEs

Source: Authors' analysis.

Step 1 (including step 1a and 1b). Value chains in Malaysia and Thailand were identified, selected and prioritized by (a) determining which sectors likely present the strongest business case for a MSME resilience product, examining criteria such as presence of MSMEs in the sector and their contribution to GDP and exports; and (b) isolating the MSME segments per promising economic sector that show the most potential for holistic resilience solutions. Key process-based learnings stemming from step 1 include:

- Additional criteria, beyond those listed in chapter 4, proved valuable when selecting value chains. Beyond the business case criteria, factors such as a value chain's contribution to economic development, its role in employing women and its contribution to the welfare of individuals/MSMEs were also considered. However, the primary focus remained on the business case, since a compelling business case is critical for creating a MSME resilience solution that is sustainable and marketable.

- Research and data on MSMEs remains limited. Despite MSMEs' importance to employment and national development, very little data are available on MSMEs in general. This is in part because of inadequate national data collection strategies and approaches, and in part because MSMEs rarely collect data on their own systems (due to limited data readiness) (World Economic Forum, 2023). This has an impact on the ability of insurers and other operators to accurately assess the value chains identified. Data scarcity has also had an impact on this report. The figures captured in table 7 are from varying sources; some figures are outdated and others are contradicted by alternative sources. To mitigate this, figures from reputable sources were captured, with the sources shared below the table, and the findings were cross-checked in KIIs.

- KIIs provide valuable information to complement desk research. To add qualitative contextual nuances, KIIs were conducted with key stakeholders, including insurers, aggregators, insurtechs and government institutions.

These interviews focused on gaining additional insights into the key risks and challenges faced by selected MSME segments, the challenges faced by insurers, and on understanding the predominant risk transfer and mitigation solutions available in the two focus countries.

Based on this approach, three value chains were selected per country. In Malaysia, these are: (1) retail; (2) food and beverages; and (3) transport and logistics. In Thailand, the selected value chains are: (1) natural rubber; (2) wholesale and retail trade; and (3) accommodation and food services. Table 7 provides an overview of all the value chains considered and how they measured up against the key selection criteria covered in the previous chapter, with the selected value chains in blue. The specific value chain characteristics, risks and potential holistic solutions per value chain are discussed in chapter 6 (Malaysia) and chapter 7 (Thailand).

Table 7: Value chains assessed for Malaysia and Thailand

SECTOR	VALUE CHAIN	NUMBER OF MSMEs	CONTRIBUTION TO GDP	CONTRIBUTION TO EXPORTS	HOMOGENEITY OF MSMEs	SUITABLE AGGREGATION POINTS EXIST	SUFFICIENT ASPIRATIONAL ENTERPRISES	NUMBER OF PEOPLE EMPLOYED
MALAYSIA								
Manufacturing	Electrical & electronics	1,701 [2015]	5.9% [2022]	38.26% [2022]	Yes	Yes	Yes	650,400 [2023]
Service sector	Wholesale & retail trade	414,019 [2015]	16.6% [2022]	None	Partial	Yes	Partial	1,668,700 [2023]
	Transportation and logistics	53,705 [2015]	3.5% [2022]	None	Partial	Partial	Partial	411,000 [2023]
	Food & beverage services	165,059 [2015]	2.5% [2022]	None	Partial	Yes	Partial	793,800 [2023]
Agriculture	Palm oil	300,000 small-holders [2022]	4.9% [2022]	9.4% [2022]	Yes	Yes	Partial	391,000 [2022]
	Cocoa	5,200 small-holders [2021]	Unavailable	0.5% [2022]	Partial	Partial	No	31,000 [2014]
Construction	Construction	39,158 [2015]	3.4% [2022]	None	Partial	No	Partial	1,250,800 [2023]
Manufacturing	Rubber products	2,446 [2015]	0.8% [2022]	0.98% [2022]	Partial	Yes	Yes	456,900 [2022]

SECTOR	VALUE CHAIN	NUMBER OF MSMEs	CONTRIBUTION TO GDP	CONTRIBUTION TO EXPORTS	HOMOGENEITY OF MSMEs	SUITABLE AGGREGATION POINTS EXIST	SUFFICIENT ASPIRATIONAL ENTERPRISES	NUMBER OF PEOPLE EMPLOYED
THAILAND								
Agriculture, manufacturing & service	Natural rubber	87,000 [2022]	8.70% [2023]	4.86% [2021]	No	Yes	Yes	6,000,000 [2022]
Service sector	Accommodation and food service	259,567 [2023]	11.5% [2019]	None	No	Partially	Yes	2,900,000 [2022]
	Wholesale and retail trade	388,000 [2022]	5.98% [2022, data calculated]	0.025 [2021]	No	No	Yes	2,400,000 [2022]
Agriculture	Farmers (food – fruit & vegetables)	60,500 [2022]	9% [2022, data calculated]	8.63% [2021]	No	No	No	12,000,000 [2023]
Agriculture, manufacturing & service	Palm oil	61,000 (varying accounts) [2022]	0.93% [2022, data calculated]	0.39%[2021]	Yes	Yes	Yes	Unavailable
	Food (poultry)	Unavailable	3.54% [2022, data calculated]	1.48% [2021]	Yes	Yes	Yes	110,000 [2019]
Manufacturing	Automotive	21,000 [2022]	15,39% [2022]	7.83% [2021]	No	Partially	Yes	500,000 [2023]
	Electrical & electronics	26,000 [2023]	11.76% [2022]	9.87% [2021]	Partial	Partially	Yes	750,000 [2022]
Construction	Construction	65,000 [2022]	3% [2022]	Unavailable	Yes	No	No	1,700,000 [2022]
Service sector	Transport and logistics	20 000 [2022]	12.20% [2022]	Unavailable	No	Yes	Yes	1,400,000 [2022]

Sources: Asian Development Bank (2022); Baskett (2021); Bank of Thailand (2023a); Biswas (2023); Charoenrat and Harvie (2021); DOSM (2016a, 2023a, 2023c, 2023d); Ghulam Kadir (2022); Hameed and Arshad (2014); Lumkam (2022); MPOCC (2022); OSMEP (2021); Poapongsakorn et al. (2019); Sowcharoensuk (2022); THNSO (2012); UN Comtrade (2021); World Bank (2022a).

6 Developing value-driven risk solutions for Malaysia

This section describes the key value chain characteristics (step 1), risks and available risk solutions (step 2), and the opportunities for holistic resilience solutions (step 3) for each selected value chain in Malaysia.

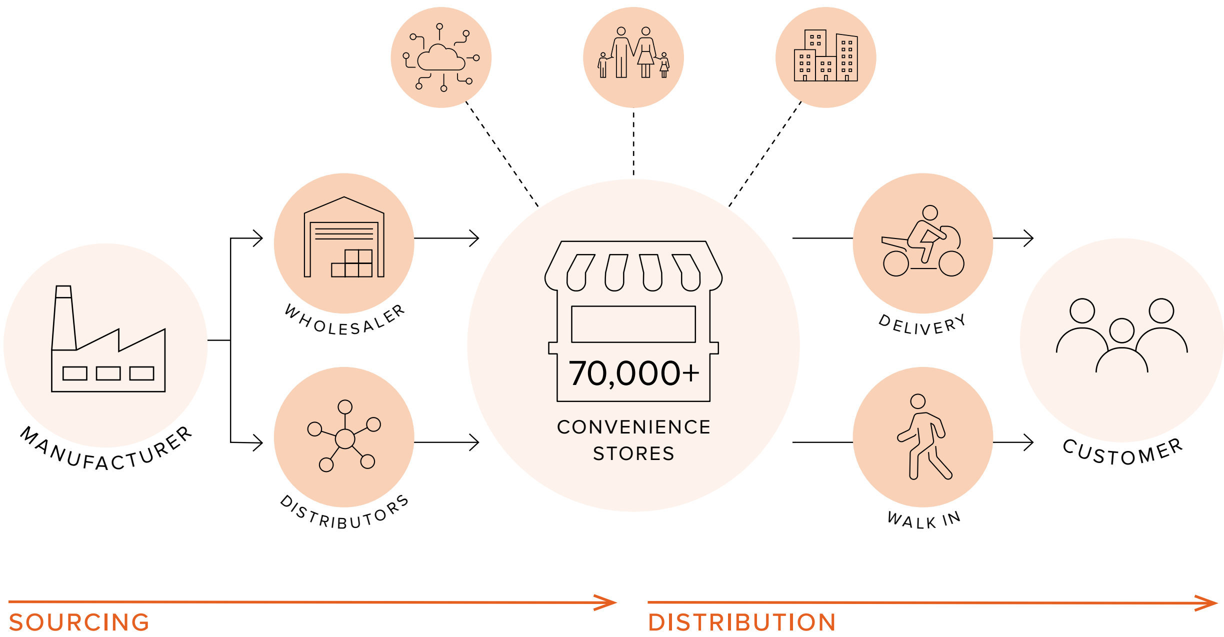
6.1. Value chain 1: **Wholesale and retail**

6.1.1. **Step 1:** Key value chain characteristics

The retail value chain in Malaysia hosts the most MSMEs in the economy, with most being micro-, family-run enterprises. The wholesale and retail value chain is a key part of the services sector in Malaysia, contributing 16.6 percent to GDP in 2022 (DOSM, 2023a). In 2022, the services sector grew by 10.9 percent, primarily led by wholesale and retail trade. This value chain recorded growth of 13.5 percent in 2022 due to a strong increase in household spending, attributed to improvement in the labour market (Ministry of Finance, 2023). In the retail trade, 99 percent (323,414) of all retailers are MSMEs, and together they employ over 1 million workers. Of these workers, one-third are unpaid family workers or working proprietors, of which there is an even gender split between men and women workers (DOSM, 2019a). While retailers tend to sell directly to end consumers, wholesalers supply retailers with the goods to be sold. There are 79,428 wholesaler establishments in Malaysia, of which 96 percent are MSMEs (DOSM, 2019a).

The wholesale and retail value chain is relatively heterogeneous in terms of actors. The value chain has a range of large supermarkets/hypermarkets, specialty retailers, stall operators, department stores and small traditional provision stores – so-called mom-and-pop stores. This means that there is also a variety of different risk profiles and needs across the chain. Most retailers operate in non-specialized retail with fast-moving consumer goods (FMCG) or in more specialized food and beverage retail. Unspecialized provision shops, convenience stores and mini marts together form a cluster of, officially, around 70,000+ establishments (DOSM, 2019b), although the actual number may be higher. The wholesale and retail value chain is visualized in figure x:

Figure x: The wholesale and retail value chain in Malaysia



- Wholesalers tend to be specialized in specific goods (DOSM, 2019a). This suggests that retailers that sell a variety of products may need to manage orders from several different wholesalers.

- The retail trade segment is dominated by small family-run businesses and target price-sensitive customers and those who seek convenience for a small number of items and daily essentials. They tend to carry local traditional and Asian products, and some branded products, along with a few imported ones (Standard Bank, 2023). However, traditional channels to source goods are rarely adapted for small retailers. Big FMCG brands normally appoint distributors in every region who primarily focus on bigger sales with major supermarkets and wholesalers, which require fewer drop-off points. Small retailers thus tend to source their goods from wholesalers who can handle smaller orders and more drop-off points, but because they cannot buy in bulk like a larger store can, high costs are an issue (Jacob, 2023).

- Small retail traders, specifically small mom-and-pop retailers, are an important element in the everyday lives of Malaysians, but tend to be overlooked in the value chain. Provision shops are found in all cities, towns and villages. Malaysia has predominantly open-fronted grocery stores.

While the majority of transactions and operations in the value chain are still offline, businesses that have adopted digital are less likely to shut down and are growing at a much faster rate than their peers. Distribution and sourcing for small retailers is still largely traditional, offline and primarily through walk-in customers (Chua, 2022). Based on KIIs, 80–85 percent of wholesale is still offline and face-to-face. In general, most business owners do not see adopting digital tools as urgent or a priority, since many are largely in business as survivalists. However, COVID-19 set off new trends and different demands from consumers. For example, studies have shown that Malaysian shoppers have become more inclined to shop online – in fact, 81% of internet users in Malaysia have made at least one purchase online (Google, Temasek and Bain, 2021). In addition, the Adyen Malaysia Retail Report 2022 found that Malaysian companies who carry out digital transformation outperform and out-earn their peers (Adyen, 2022). KIIs also confirmed similar trends: most of the MSMEs that shut down in recent years were run by owners who were at least 50 years old and refused to embrace digital trends. These business closures have given rise to a new generation of younger retailers who embrace tech and automation, thereby managing to avoid the trial and error of traditional retailers, and are thriving and growing exponentially.

B2B and B2C digital platforms are growing in popularity due to their potential to achieve increased sales and efficiency. To foster further digitalization to build resilience, several recent initiatives have aimed at helping retailers digitalize. For example, the Government is promoting digitalization and e-commerce under the Malaysian Digital Economy Blueprint, and B2B platforms and B2C platforms such as Shopee and Lapasar are also running digitalization programmes (Jacob, 2023; Shahila Aman, 2021). In part facilitated by these initiatives, more than 700,000 MSMEs across different sectors have adopted e-commerce (Ministry of Communications and Digital, 2023). As a result, a definite rise is apparent in the use of digital B2C platforms that facilitate delivery of food, groceries and other goods. This opens a new channel of distribution to customers. B2C platforms such as Grab and Shopee aggregate many MSMEs and often include other types of services such as financing. Retail MSMEs are also increasingly leveraging digital B2B wholesaler platforms, such as Borong and Lapasar, through which retailers can source products from several suppliers in one platform. The increased usage of B2B and B2C platforms offers attractive distribution opportunities for insurance companies. Core platforms that could play a distribution role are listed in table 8, alongside other potential aggregators to consider.

Table 8: Aggregators in the wholesale and retail value chain in Malaysia

AGGREGATOR	DESCRIPTION	Potential MSMEs in reach	Ability to collect premiums
Grab	Grab is a major digital platform for food and retail delivery as well as e-hailing. It offers integrated payments systems and financing and is expanding to digital banking, which means it would likely be able to collect premiums. While country-level numbers are not available, Grab is the primary platform in South-east Asia, aggregating over 600,000 merchants and 5 million drivers (Campbell, 2023; Adyen, 2019).	600,000 merchants and 5 million drivers in South-east Asia[16]	Likely
Borong	Borong is a digital wholesale platform enabling wholesalers and retailers to manage their orders in one platform. It covers more than 200,000 retailers and 30,000 suppliers. As a platform for sourcing goods, it is likely to be able to collect premiums, and also to have valuable data from both retailers and wholesalers (Borong, 2023).	200,000+ retailers, 30,000 suppliers	Likely
Shopee	Shopee is an e-commerce platform. According to the company, it has over 2 million local sellers in Malaysia. The company's digitalization programmes have helped onboard over 100,000 MSMEs. As an e-commerce platform, it is likely to be able to collect premiums (Yee, 2022).	100,000+ MSMEs, up to 2 million individual sellers	Likely
Lapasar	Lapasar is a B2B wholesale platform aimed to supply mom-and-pop stores with FMCGs. It currently serves 11,000 retailers and aims to onboard 25,000 by 2025. As a platform to source goods, it is likely to be able to collect premiums (Jacob, 2023).	11,000+ retailers	Likely
KirimMan	KirimMan is a logistics aggregator in the retail value chain, which has partnered with insurers in the past. There is scope to explore other logistics aggregators for similar initiatives.		Likely

16 Regional figures used where national figures not available.

AGGREGATOR	DESCRIPTION	Potential MSMEs in reach	Ability to collect premiums
Funding Societies	Funding Societies is South-east Asia's largest SME Digital Financing Platform and is registered with Securities Commission Malaysia. It offers, for example, microfinancing for restaurants, convenience stores and delivery services (Funding Societies, 2023b).	No data	Likely
Touch 'n Go eWallet	Touch 'n Go is a major e-wallet provider in Malaysia, which operates with the foodpanda food delivery platform, among others. It has 1.2 million merchant touch points in Malaysia, many of which belong to small retailers or F&B businesses (BusinessWire, 2023).	1.2 million merchants	Likely

6.1.2. **Step 2:** Key risks faced and availability of risk solutions

According to SME Corporation Malaysia (2021), cash flow is the biggest challenge for MSMEs in the retail and wholesale space. This challenge manifests in two ways for MSMEs in the wholesale and retail space. The first is in terms of accessing finance: many businesses struggle to access capital to support their operations and invest in growth and expansion. The second is with regard to difficulties in cash flow management, a problem exacerbated by the fact that many businesses have uneven revenue streams. Difficulties in cash flow management affect more than 32.8 percent of small business owners (Funding Societies, 2023a). This often impacts their ability to address other risks and challenges, some of which are captured in table 9.

Table 9: Risks faced by MSMEs in the retail and wholesale value chain in Malaysia

RISKS	
Cash flow risks	Insufficient cash flow is a key challenge among MSMEs; in fact, SME Corporation Malaysia found that 67.4% of MSMEs cite cash flow as their top concern. This is particularly relevant in the retail sector, which is reliant on consumer demand (SME Corporation Malaysia, 2021).
Natural hazards and climate change	Flooding is a significant challenge, especially for MSMEs in the retail space. The floods in December 2021, for example, resulted in economic loss of over MYR 6.1 billion, with about MYR 2.6 billion incurred by the retail sector. Only 36% of these losses were insured/covered (Bank Negara Malaysia, 2022).
Damage to goods in the transport process	Stock may be damaged in transport. For business owners who hold perishable and temperature-sensitive goods such as food & beverage retailers, a well-functioning cold chain is essential. However, the cold chain industry in Malaysia is highly fragmented, and not many players offer cold chain services (MIDA, 2023).
Theft risks	Internal and external theft represent a common issue for retailers in Malaysia (Marappen, n.d.).
Health risks	Small retailers tend to be run by a working proprietor with a limited number of employees, limited liquidity and cash flow. This means that for business owners, even a few days of loss of income due to sickness or injuries can be significantly damaging.
Payment fraud	Digital payments open an avenue for potential fraud. More than one-third of Malaysian retailers have suffered significant losses from payment fraud and chargebacks during 2023, and consider this a major threat to their business (Adyen, 2023).
Accident risks	A greater number of couriers on the roads delivering goods has brought with it an increased risk of traffic-related injuries for gig workers in the value chain. Statistics suggest almost one courier dies every week in Malaysia due to traffic-related injuries, while a much higher number sustain serious or moderate injuries (Daniels, 2023).

Risk mitigation tools, and tools specifically to address cash flow risks, are increasingly being attached to digital platforms. The increased use of digital platforms has inspired the rise of some risk mitigation tools, such as offering financing solutions for MSMEs based on the nature of their business. Merchants connected to Grab, for example, can access business loans with repayments adjusted to daily sales to help them better manage cash flow (Grab, 2023).

Some platforms offer opportunities to delay payments or partner with financial providers for financing. Fintech Du-it offers instalment solutions to address supply chain financing gaps for businesses using the Buy Now, Pay Later business model (Du-it, 2023). Some platforms, like digital wholesale platform Borong, offer back-end digitalization, for example through retail automation to automatically keep track of stock and replenish products (Borong, 2023).

Targeted insurance products are not readily available for the wholesale and retail value chain. To address the risks that wholesale and retail MSMEs face, insurers offer traditional and generic products. KIIs revealed that many of these products are not rooted in consumer research; instead, they were introduced as general products that may also apply to MSMEs. A few exceptions have emerged, such as the introduction of targeted insurance products related to transporting goods. Insurer Tokio Marine, for example, has partnered with logistics aggregator KirimMan to offer gig workers goods-in-transit insurance and protection against road accidents (Araullo, 2023b).

In the absence of formal insurance options, retailers largely manage risk through their networks with suppliers in their area. According to KIIs, retailers and supplier MSMEs often leverage relationships based on trust and loyalty to mitigate risks. For example, suppliers may offer informal insurance, funding, or support for other costs such as children's education fees, in exchange for retailers choosing them as a supplier for the next year. In addition to suppliers, MSME proprietors may rely on informal lenders, which often charge high rates.

6.1.3. **Step 3:** Opportunities for holistic resilience solutions

This subsection explores some potential holistic risk solutions for the retail and wholesale value chain in Malaysia. Several potential risk transfer and risk management solutions were identified, which could be introduced and bundled together, as shown in table 10.

Table 10: Overview of potential risk transfer and risk mitigation solutions for the retail and wholesale value chain in Malaysia

RISKS	POTENTIAL RISK SOLUTIONS	
	Risk transfer solution Insurance cover	Risk management solution
Natural hazards and climate change	• Natural hazards and climate change • Business interruption insurance • Property insurance • Weather event insurance	• Stock management software and digital B2B platforms • Fire and flooding sensors • Early warning systems
Cash flow risks	• Business interruption insurance • Business owner life insurance • Business owner income protection cover	• Business management solutions like digital cash flow management systems and inventory management systems • Credit solutions that leverage (digital) records to which an aggregator has access • Invoice financing and supply chain financing • Lease/finance solutions through insurance policy with straightforward approval process • Savings solutions with early redemption mechanism
Health risks	• Hospitalization cover • Employee health insurance • Life insurance	• PPE • Health-related savings solutions
Theft risks	• Theft insurance	• Anti-theft technology

Coupling insurance products with risk mitigation mechanisms represents a potential opportunity. For example, flood warning systems with flood sensors could be combined with business interruption insurance, which would not only help MSMEs prevent flood damage, but also measure the impact if the damage occurred, while also providing immediate relief and support. The development of such a holistic product should involve customizing product features and premiums to fit the needs and resources available to MSMEs. Based on desk research, it is clear that digital technology is already presented as a key tool for resilience-building – from increasing operator visibility to accessing finance and saving on cost of operations through digital back-end systems. However, other risk mitigation tools, covering a wider variety of risks, have yet to be introduced into this market to build resilience. These include anti-theft technology, sensor-based cargo tracking devices, flood and fire sensors, early warning systems, and even health and safety training. This is a significant gap in the market. Insurers can play a pivotal role in bringing such tools into the market to support and enhance resilience among MSMEs and to improve their own products.

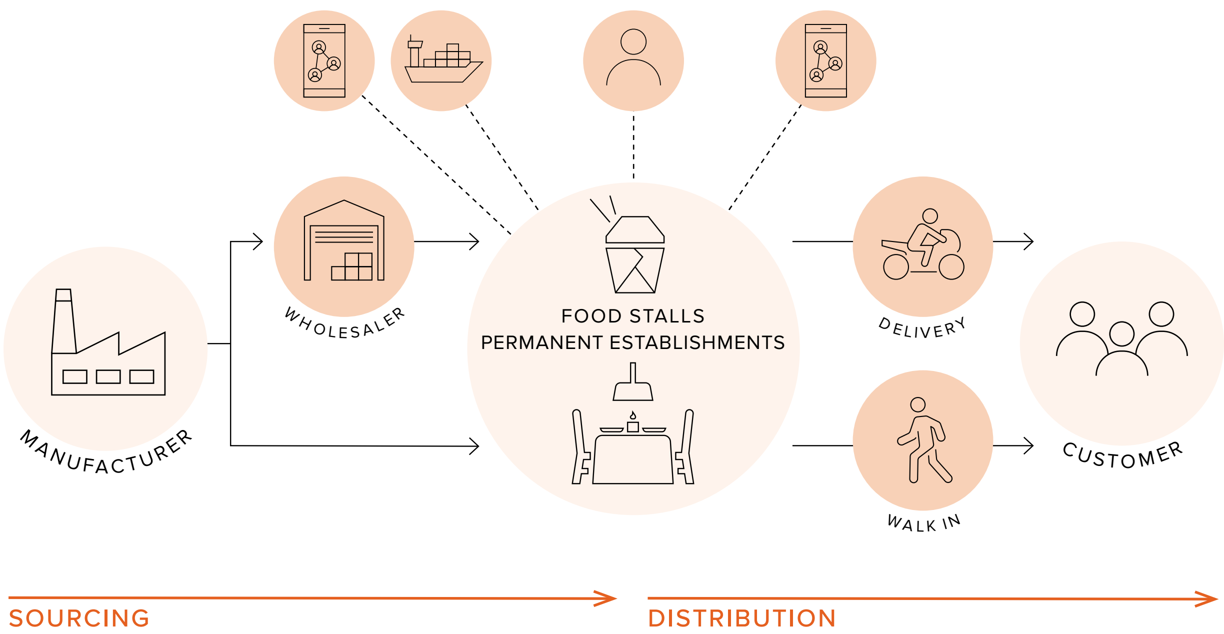
An opportunity exists to leverage digitalization and couple risk transfer mechanisms with initiatives already in place. As discussed above, digital platforms are increasingly stepping into the resilience space and offering MSMEs access to finance to grow their businesses. These existing products could be enhanced by adding either an insurance and/or savings product that would allow MSMEs to mitigate risks. For example, insurers could partner with B2B or B2C platforms that offer financing support and work with them to add business interruption cover or a stock-related insurance product. This would allow MSMEs to leverage the financing to grow, while also having the insurance to ensure that large external shocks or damage/loss of stock do not undermine their growth. These kinds of bundled solutions would have the added benefit of bringing insurance to the doorstep of MSMEs and would allow MSMEs to engage with insurance through means that are geared towards stimulating growth, thereby building trust between MSMEs and insurance providers. For example, Igloo, an insurtech in South-east Asia, offers MSME protection for business owners which, among other features, pays out benefits equivalent to daily sales average if the owner is hospitalized and cannot run the business. These benefits are distributed through e-wallet providers. This is a simple and targeted product which speaks directly to the cash-flow needs of small retailers. Expanding this concept could involve incorporating employee health cover, which could address not just acute hospitalization needs but also general and day-to-day needs and health expenses, potentially mitigating the risk of being hospitalized for a longer period. As in the case of Igloo, distribution through e-wallets or e-commerce platforms that have access to daily sales may be suitable for such products.

6.2. Value chain 2: **Food & beverage**

6.2.1. **Step 1:** Key value chain characteristics

Food and beverage services (F&B) is a key sector for MSMEs and the broader Malaysian economy. Of the total number of food and beverage establishments (167,490), 98.5 percent are MSMEs (DOSM, 2016a, 2016b). With around 165,000 establishments, then, it is the second-largest value chain in Malaysia in terms of number of MSMEs. Together, these institutions contribute significantly to national growth and employment, contributing 2.7 percent to GDP in 2023 and employing 793,800 people in 2022 (DOSM, 2023a, 2023c). The value chain structure is visualized in figure xi.

Figure xi: The food and beverage value chain in Malaysia



- The value chain for F&B services is similar to the retail value chain, but due to high reliance on imported foods, sourcing is particularly crucial. Because of a relatively complicated import process, imported foods tend to be bought from third-party wholesalers or distributors, whereas restaurants tend to source local foods from the manufacturer directly (Flanders Investment & Trade, 2020).

- In terms of operations, food and beverage establishments come in many forms. The majority are food stalls, with the next largest group being restaurants; the remaining institutions are a mix of coffee shops, cafeterias, bars and fast-food restaurants (DOSM, 2016a).

- Malaysia has a strong restaurant and cafe culture. In terms of distribution, traditional walk-in customers still dominate (Flanders Investment & Trade, 2020). In 2019, only 12 percent of food establishments used e-platforms (DOSM, 2020); however, since the COVID-19 pandemic intensified the need for alternative distribution channels, food delivery platforms have become increasingly common. The food delivery sector in Malaysia is thus rapidly growing and is expected to be worth $2 billion in 2025 (Yee Mun, 2021).

Digital platforms are key aggregators in the food and beverage value chain in Malaysia. Digital platforms engage with MSMEs throughout the value chain, which gives them the potential to serve as important aggregators. For example, B2B wholesaler platforms FoodMarketHub and Supplybunny also offer financing through Funding Societies, South-east Asia's largest financing platform for SMEs (Funding Societies, 2023b). B2C platforms such as foodpanda and payment solutions like Touch 'n Go already have integrated delivery platforms that could be used to aggregate MSMEs (BusinessWire, 2023; The Malaysian Reserve, 2020). Some of these aggregators are captured in table 11:

Table 11: Aggregators in the food and beverage value chain in Malaysia

AGGREGATOR	DESCRIPTION	Potential MSMEs in reach	Ability to collect premiums
GrabFood	Grab is a major digital platform for food and retail delivery as well as e-hailing. It offers integrated payments systems and financing and is expanding to digital banking, which means it would likely be able to collect premiums. While country-level numbers are not available, Grab is the primary platform in South-east Asia, aggregating over 600,000 merchants and 5 million drivers (Campbell, 2023; Adyen, 2019).	600,000 merchants and 5 million drivers in South-east Asia[17]	Likely
foodpanda	foodpanda is a food delivery platform with more than 25,000 partner restaurants and 30,000 riders across Malaysia. As it already has an integrated payments system, it is likely to be able to collect premiums (foodpanda, 2023).	25,000 partner restaurants and 30,000 riders	Likely
FoodMarketHub	FoodMarketHub is a wholesale platform for inventory management designed for F&B businesses to centralize back-end systems. As of 2023, it had 3,000 F&B operators (New Straits Times, 2023).	3,000 restaurants	Likely
Supplybunny	Supplybunny is a supplies ordering platform for restaurants, cafes and bakeries. As of 2023, about 800 suppliers were on the app (New Straits Times, 2023).	800 suppliers	Likely
Funding societies	Funding Societies is South-east Asia's largest SME Digital Financing Platform and is registered with Securities Commission Malaysia. It offers, for example, microfinancing for restaurants, convenience stores and delivery services (Funding Societies, 2023b).	No data	Likely
Touch 'n Go eWallet	Touch 'n Go is a major e-wallet provider in Malaysia, which operates with foodpanda among others. It has 1.2 million merchant touch points in Malaysia, many of which belong to small retail or F&B businesses (BusinessWire, 2023).	1.2 million merchants	Likely

17 Regional figures used where national figures were unavailable

6.2.2. **Step 2:** Key risks faced and availability of risk solutions

As in the wholesale and retail sector, research and KIIs suggest that the biggest challenge for MSMEs in the food and beverage value chain is cash flow. This manifests in the same two ways: (1) accessing funds; and (2) managing cash flow where income is unstable and even seasonal. This is often exacerbated by more value chain-specific risks, such as food security and reliance on imports. Some of the key risks for this value chain are explored in table 12.

Table 12: Risks faced by MSMEs in the food and beverage value chain in Malaysia

RISKS	
Cash flow risks	Insufficient cash flow is a key challenge among MSMEs; 67.4% of MSMEs note cash flow as their top concern (SME Corporation Malaysia, 2021). As in the retail sector, this is a particular issue for F&B establishments.
Food security and reliance on imports	The sector is heavily reliant on imports, which makes high costs and inflation a particular issue. Import dependence is due to issues in Malaysia's agriculture sector, which struggles with labour shortages and low levels of automation and technology adoption. High costs impact the whole value chain all the way to customer-facing F&B services. Because of these high costs, F&B establishments face the trade-off of raising prices at the cost of losing customers or absorbing costs but losing revenue (Ramendran, 2023; Hassan, 2023).
Transport and storage of perishables	Stock may be damaged in transport. For F&B owners who hold perishable and temperature-sensitive goods, a well-functioning cold chain is needed, but Malaysia's cold chain industry is highly fragmented and not many players offer cold chain services (MIDA, 2023). Storage is often an even more pressing issue among hawkers, who do not have permanent locations.
Damage to equipment	Restaurants work with electrical equipment such as dishwashers, freezers and stoves. Malfunctions and damage due to electrical faults and hazards can be costly and cause business interruption (Tune Protect, 2023).
Injuries and health risks	Kitchens present many opportunities for workplace injuries, including cuts and burns, as well as other hazards such as fire (ILO, 2011), and stall operators are not excluded from this risk. There have been reports of lethal injuries among stall operators working with large amounts of frying oil (Sarkar, 2023). Injuries are also common in the transport section of the value chain, with couriers exposed to traffic risks and potential injuries and lethal accidents (Daniels, 2023).
Natural hazards and climate change	Climate change, natural hazards and disease outbreaks can have major adverse impacts on food production. In 2021 and 2022, floods caused some MYR 138.6 million in losses for the agricultural, fisheries and livestock sectors, affecting nearly 8,000 agrofood players (Gimino et al., 2023), and flooding is also a major hazard for F&B services establishments (Durai, 2021).

Many of the challenges in the food and beverage value chain are a result of challenges in the agricultural value chain. This means that to enhance resilience in this value chain, there is a direct need to strengthen agricultural food production value chains. The root of the issue is that the Malaysian F&B sector is strongly reliant on imports and local production is limited. As such, food security is a priority. The Malaysian Government has launched several initiatives on smart farming to boost local farmers and promote adoption of technology, such as, for example, the use of sensors, drones and robots to monitor, water and fertilize crops (Hassan, 2023). One interesting example of insurance and technology use in the sector is weather-indexed insurance for farmers using satellite data, implemented by the insurtech Igloo (2023b).

Solutions for the F&B sector directly are mainly found among digital platforms. As in the retail value chain, several solutions for MSMEs have been developed and introduced by digital platforms that aggregate many businesses. For example, Igloo launched an insurance product called PandaCare, which provides Takaful motorcycle cover and CyclePac life and injury cover to food delivery personnel working for foodpanda (Igloo, 2023a). An innovative non-insurance solution in the F&B value chain is the 'cloud kitchen' model. This growing business model is used by companies such as Grab, among others; under it, food and beverage vendors share facilities and appliances in a central location to reduce fixed costs and facilitate delivery services. Customers can then order from several brands with one delivery (World Bank, 2022a; Yee Hoong, 2022).

6.2.3. **Step 3:** Opportunities for holistic resilience solutions

This subsection explores some potential holistic risk solutions for the food and beverage value chain in Malaysia. Several potential risk transfer and risk management solutions could be introduced and combined, as shown in table 13.

Table 13: Overview of potential risk transfer and risk mitigation solutions for the food and beverage value chain in Malaysia

RISKS	POTENTIAL RISK SOLUTIONS	
	Risk transfer solution Insurance cover	Risk management solution
Cash flow risks	• Business interruption insurance • Life insurance for the business owner • Income protection cover for the business owner	• Business management solutions like digital cash flow management systems and inventory management systems • Credit solutions that leverage (digital) records to which an aggregator has access • Lease/finance solutions through insurance policy with straightforward approval process • Savings solutions with early redemption mechanism
Food security and reliance on imports; transport and storage of perishables	• Goods-in-transit insurance • Weather-index/crop insurance	• Sensor-based cargo tracking devices • Diversification of suppliers through leveraging digital platforms • Cold storage solutions
Damage to equipment	• Property insurance	• Solutions for sharing facilities such as cloud kitchens
Injuries and health risks	• Non-indemnity cover • Life insurance • Health and accident cover for delivery employees	• Health savings products • Safe working conditions training • PPE
Natural hazards and climate change	• Weather event insurance • Business interruption insurance • Life insurance	• Early warning systems for climate events • Increased availability of climate data to better assess impacts and risks • Heat and flooding sensors

Opportunities for holistic solutions in the food and beverage value chain include:

- Aggregator platforms could produce their own insurance products for the market. Digital platforms that serve MSMEs in a particular value chain often have a deeper understanding of MSME business models and risk profiles.

Thus, there is ample opportunity for digital platforms such as Grab to design and deliver resilience products to their range of clients, from food deliverers to taxi drivers. Examples could include health insurance and/or property damage in case of accident for drivers, as well as business interruption cover. This could be further enhanced by offering risk mitigation tools, such as advanced driving training for drivers or equipping drivers with helmets.

- Insurers could build on existing innovative risk mitigation tools like cloud kitchens. Most food and beverage service establishments in Malaysia are hawkers and street vendors. The marketplaces where they operate often lack cooling facilities or shade for produce, and high temperatures mean that open markets and street vending are prone to high rates of product deterioration and food spoilage (GIZ, 2016). A potential solution, especially for food stalls and hawkers aggregated in a common physical market space, is introducing shared cold storage facilities. Insurers could partner with aggregators such as cloud kitchens to offer and distribute tailored insurance products to their customer base, in combination with the risk management solutions already offered by those partners.

- Providing non-indemnity health cover for food and beverage workers alongside workplace safety training could reduce the risk of injury. Food and beverage establishments, including hawkers and couriers, are exposed to various workplace hazards, leading to injuries. Non-indemnity health coverage providing access to several clinic visits per person for F&B workers could support medical care for injuries. Workplace safety training focused on kitchen safety practices and proper use of equipment could reduce the occurrence of injuries.

Addressing risks in the agricultural value chain is essential for mitigating risk in the food and beverage value chain. As discussed above, the food and beverage value chain is reliant on agricultural value chains. Challenges in the former often result in higher reliance on international value chains and imported produce for the latter (which also undermines local food production). Thus, these two value chains should be viewed together and holistic solutions should be considered to allow food and beverage value chains to mitigate and address risks rooted in supply chain disruptions caused in the agricultural value chains. Key risk mitigation tools include increased knowledge, for example through a digital platform that provides updates on crops, offers early warning systems, and allows for diversifying suppliers.

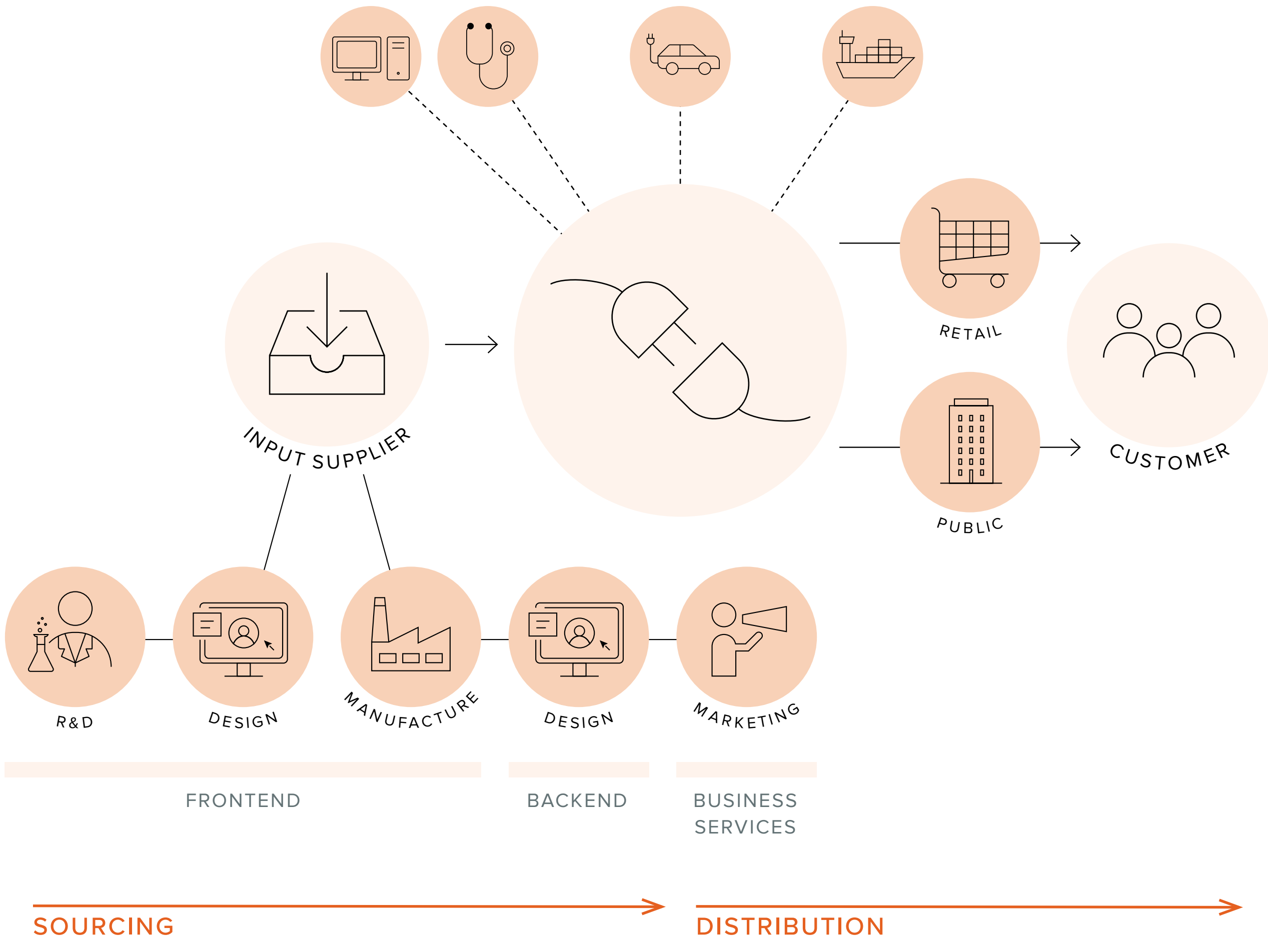
6.3. Value chain 3: **Electrical and electronics**

6.3.1. **Step 1:** Key value chain characteristics

Electrical and electronics products (E&E) are Malaysia's largest export, and the value chain plays an important role in the national economy. In 2022, E&E contributed 38 percent to exports and employed about 590,000 individuals (MSIA, 2022). There are approximately 1,701 MSMEs in E&E manufacturing, according to the MSME census in 2015, which account for up to 90 percent of total E&E companies (DOSM, 2016b). MSMEs in this value chain are largely small and medium-sized, as opposed to micro-, and despite their numbers, they contribute only about 10 percent to value add in this sector. This indicates a big discrepancy in productivity between large companies and MSMEs (Economic Planning Unit, 2020). One main reason for this is that local MSMEs tend to be less technologically advanced. To address this issue, several government strategies have been launched focusing on improving productivity and modernizing MSMEs (MIDA, 2022). E&E is seen as a strategic industry for MSMEs to enter, in order to supply and service larger local companies and MNCs, which means this value chain has strategic national importance.

The value chain for E&E includes several actors and activities. As shown in figure xii, the E&E value chain broadly consists of five stages: research and development (R&D); design; manufacturing, including the manufacture of individual components and the assembly of components into final products; and distribution. Malaysian firms operate in several segments of the E&E value chain. Many are engaged in components manufacturing, while others are focused on assembly, packaging and testing. Some companies are also involved in design and R&D. Most of the high value added activities, such as R&D, branding, product development and marketing, are driven by large MNCs who are often based in the European Union, Japan or the United States (Eltgen et al., 2021). These companies then tend to outsource their production to contract manufacturers and components manufacturers, which are often local firms.

Figure xii: The E&E value chain in Malaysia



MSMEs lag in digital adoption and automation, which impedes growth and development in the sector. As discussed above, while MNCs tend to have upgraded their facilities into modernized and integrated manufacturing, most local companies – particularly MSMEs – tend to have much lower levels of technological advancement (MIDA, 2022). Over 90 percent of MSMEs in manufacturing use basic ICT tools such as computers and the internet, but more advanced digital tools are less widely used (World Bank, 2022a). One survey found that only 11 percent of Malaysian manufacturing firms had transformed most of their business processes, such as by using smart manufacturing and automation (TM One, 2022).

Several potential aggregators exist in the value chain, including large market players, digital platforms, industry clusters and associations. As MSMEs tend to be contracted by larger leading firms, one way to access and distribute risk solutions or products might be by reaching MSMEs through large companies such as Globetronics, Inari or Intel. Some larger companies have already formed clusters around smaller local companies in order to contribute to SME development. For example, the Penang Automation Cluster was started by larger local companies Vitrox, Pentamaster and Walta Engineering. Other examples of aggregation points are the Electrical and Electronics Marketplace (EEMM), which is a platform that matches E&E suppliers with global buyers, or Averest, a wholesale platform with particular focus on electrical products supplied by SMEs. Table 14 highlights some potential aggregators in the E&E value chain.

Table 14: Aggregators in the E&E value chain in Malaysia

AGGREGATOR	DESCRIPTION	Potential MSMEs in reach	Ability to collect premiums
SAMENTA	SAMENTA is an association for SMEs with a focus on the industrial/E&E sector. As a voice for MSMEs, the association is likely a good entry point for better understanding the sector and its needs, but may be less suitable for distributing products (SAMENTA, 2023).	3,000 members, of which about 75% are in E&E related or adjacent sectors	No
Electrical and Electronics Marketplace (EEMM)	EEMM is a digital platform that matches E&E suppliers with global buyers. It is part of an initiative to increase market access for local companies (EEMM, 2023).	100+ suppliers on site	Likely
Averest	Averest is a wholesale platform for local suppliers and manufacturers focused specifically on electrical/industrial supply. It has a particular focus on SMEs, but the number of suppliers is unclear. As a platform for sales, it is likely to be able to collect premiums (Averest, 2023).	Unclear	Likely
Penang Automation Cluster (PAC)	PAC is the first small and medium enterprise precision metal fabrication or automation cluster in Malaysia, and serves as a one-stop metal component supply chain hub. Its number of businesses and ability to collect premiums is unclear, but it could be a good entry point for reaching SMEs (Penang Automation Cluster, 2023).	Unclear	Likely
Large companies such as Globetronics, Inari, Intel, Texas Instruments	Large local firms or MNCs may be a way to reach SMEs, as many SMEs are subcontracted under a leading firm. As there is likely already some transfer of money between the actors, there may be ability to collect premiums (Eltgen et al., 2021).	Unclear	No

6.3.2. **Step 2:** Key risks faced and availability of risk solutions

E&E MSMEs in Malaysia face several risks and challenges that obstruct their ability to grow and contribute to strategic national objectives. The E&E value chain holds great potential for holistic solutions, which could be prioritized by both public and private sector operators to drive resilience and enable the value chain to grow and reach national strategic goals. Some key risks in this value chain are discussed in table 15.

Table 15: Risks faced by MSMEs in the E&E value chain in Malaysia

RISKS	
Lack of skilled workers	Malaysian MSMEs in E&E face a significant shortage of skilled workers, which is seen as one of the main challenges in the sector. Migration of high-skilled workers to countries with higher wages, such as Australia, Singapore and the United States, is a serious problem that hampers development in the sector (Eltgen et al., 2021).
Workplace injuries	Workplace hazards are a significant problem in the sector. According to the Malaysian Department of Occupational Safety and Health (2023), about 61% of occupational accidents in Malaysia occurred in the manufacturing sector.
Natural hazards and climate change	Flooding and other natural hazards can cause delays in transport and damage to property, assets and products. Floods in December 2021/January 2022 caused MYR 900 million losses in manufacturing (Reuters, 2022).
Damaged goods	Electrical products are considered fragile and hazardous as they often contain batteries or power sources. This means they are risky to transport (DHL, 2023).
Demand volatility, supply chain interruptions	A common challenge in E&E manufacturing globally is market unpredictability and fluctuations in price of raw materials, which can have major impacts on the cost of components and cause interruptions in supply chains (Sharp, 2019; MIDA, 2022).
Late payments	Late payments from debtors are a problem for 39% of MSMEs, particularly in manufacturing (SME Corporation Malaysia, 2021). This often results in difficulties in cash flow management and liquidity.
Infrastructure	E&E companies in certain areas have reported inconsistent electricity supply and frequent blackouts, as well as slow broadband speeds (Economic Planning Unit, 2020).

Addressing risk in the E&E sector is a key public and private sector priority in Malaysia. Raising productivity levels in the E&E sector and increasing value added from local E&E companies is the focus of several projects and programmes, undertaken by both government and private sector. Many initiatives aim to reduce gaps between talent produced and industry requirements, including upskilling and reskilling programmes to help the workforce adapt to new technologies, as well as building the competency and presence of local players in the ecosystem. Key initiatives include:

- A financing facility from the Malaysian Investment Development Authority (MIDA) and Malaysian Industrial Development Finance Berhad (MIDF) offers loans or grants for SMEs in the E&E value chain to move towards automation and digital processes in manufacturing (World Bank, 2022a). Adopting automation and Industry 4.0 (IR4.0) technology is key to reducing operating costs, limiting reliance on low-skilled foreign labour and eliminating human error (MIDA, 2022).

- Efforts to facilitate access to global markets for E&E companies include the virtual marketplace EEMM, which aggregates several local E&E platforms (EEMM, 2023).

6.3.3. **Step 3:** Opportunities for holistic resilience solutions

This subsection explores potential holistic risk solutions for the E&E value chain in Malaysia. Table 16 shows potential risk transfer and risk management solutions that could be introduced and combined in this value chain.

Table 16: Overview of potential risk transfer and risk mitigation solutions for the E&E value chain in Malaysia

RISKS	POTENTIAL RISK SOLUTIONS	
	Risk transfer solution Insurance cover	Risk management solution
Damaged goods	• Goods-in-transit insurance	• Training and capacity-building on appropriate storage and transfer procedures • Sensor-based cargo tracking devices
Natural hazards and climate change	• Weather event insurance • Business interruption insurance	• Flooding and fire sensors • Early warning systems
Workplace injuries	• Health and personal accident cover • Savings products for a set number of clinic visits for employees	• Training and capacity-building • PPE
Late payments (cash flow and liquidity risk)	• Trade credit insurance	• Credit solutions that leverage (digital) records to which an aggregator has access • Lease/finance solutions through insurance policy with straightforward approval process • Savings solutions with early redemption mechanism
Infrastructure; demand volatility, supply chain interruptions	• Business interruption insurance	• Access to real-time price and market information

Several opportunities exist to create holistic solutions in the E&E value chain. Many of the risks faced in this value chain could be addressed by combining risk mitigation and risk transfer solutions. A few examples are listed below:

- Sensor-based tracking devices located with cargo coupled with goods-in-transit insurance. Sensor-based cargo tracking devices can provide real-time insight into the location and condition of cargo while it is in transit. In doing so, these devices can also provide notifications of disturbances, damages and delays, enabling logistics service providers to better understand and manage those risks. Combining this with goods-in-transit insurance would allow insurers to easily assess level of damage and provide MSMEs with immediate payouts.

- Early warning systems and fire and flood sensors coupled with property insurance. Fires are a significant risk in the E&E value chain, while floods are a climate-related risk for Malaysia; previous torrential rainfall events have resulted in substantial revenue losses and costs to manufacturers. To address this, offering early warning systems, such as smoke alarms and weather apps, alongside fire and flood sensors would allow MSMEs to take practical measures to reduce the impact in case of fire or flood, and would allow insurers to (a) easily measure the impact of the fire/flood; and (b) provide fast payouts based on the damage.

- Training and PPE coupled with health and personal accident insurance specifically for workers in manufacturing. Manufacturing in the E&E value chain comes with high risks, especially in businesses with low automation. This risk can manifest in human error that causes damage to a product and/or in injury to workers. Both can be addressed by providing regular training aligned with international best practice on how to operate in a safe working space. In addition, PPE should be provided to workers to protect them from workplace harm. These two risk mitigation measures could then be coupled with personal accident insurance or savings products for a set number of clinic visits for employees.

Holistic solutions could be enhanced by leveraging new and alternative distribution channels. Insurers could partner with risk mitigation solution providers, such as Cargo Signal's Smart Cargo, to distribute holistic solutions. In addition to risk mitigation partnerships, clear opportunities exist for insurers to partner with alternative distributors as outlined in table 16, such as with lead companies in the value chain who already have established relationships with MSMEs in the sector.

6.4. Summary of findings

Climate risks and natural hazards are a significant risk to all value chains in Malaysia. Flooding and other natural hazards are major challenges, impacting production of goods, stock and properties. Even so, SME Corporation Malaysia has highlighted that business insurance uptake is particularly low in more flood-prone regions (SME Corporation Malaysia, 2024). Further exploration is needed into ways that climate-related hazards could be managed through innovative solutions such as weather-indexed insurance or technology such as flood sensors, as well as through mitigatory measures such as maintenance and clearing of gutters and storm drains. Ignoring climate risk as a challenge could potentially undermine national development objectives; for example, unmitigated and unaddressed climate risks in agricultural value chains can limit supply to food and beverage value chains, resulting in an increased reliance on imported goods and undermining demand for local supply.

Cash-flow and liquidity challenges are prevalent among MSMEs, particularly in the food and beverage and retail sectors. MSMEs in these sectors tend to be family-run, with few employees, and are reliant on daily sales and a steady flow of customers. For such businesses, better systems to manage supply and sales through digital B2B or B2C platforms could be a crucial first step towards efficiency and cost savings. Struggles with cash flow are already being addressed through private and public players in the E&E value chain, and some of these solutions could also be valuable in retail and wholesale and in food and beverages, specifically where digital platforms, such as Grab, step in to offer their own resilience products.

Designing and distributing products for MSMEs in Malaysia, across value chains, requires a more targeted approach. Traditional distribution of products through agents and brokers is not cost-efficient to reach small enterprises, and insurers note that it is hard to keep costs low. Targeting aggregators such as digital platforms and e-wallets is a promising way to reach MSMEs in larger numbers and keep costs down, and some insurtechs are already using such strategies. As well as facilitating distribution, aggregators could serve as a source of data, for instance on stock levels, sales averages and payment history, which could be leveraged to enhance products. Product design would benefit from being more targeted, involving consumer research and understanding value chains to ensure products are aligned with the needs of MSMEs. Consumer research could also be employed to better understand willingness to bundle insurance products with other mitigation strategies and technologies.

7 Developing value-driven risk solutions for Thailand

This section describes the key value chain characteristics (step 1), risks and available risk solutions (step 2), and the opportunities for holistic resilience solutions (step 3) for selected value chains in Thailand.

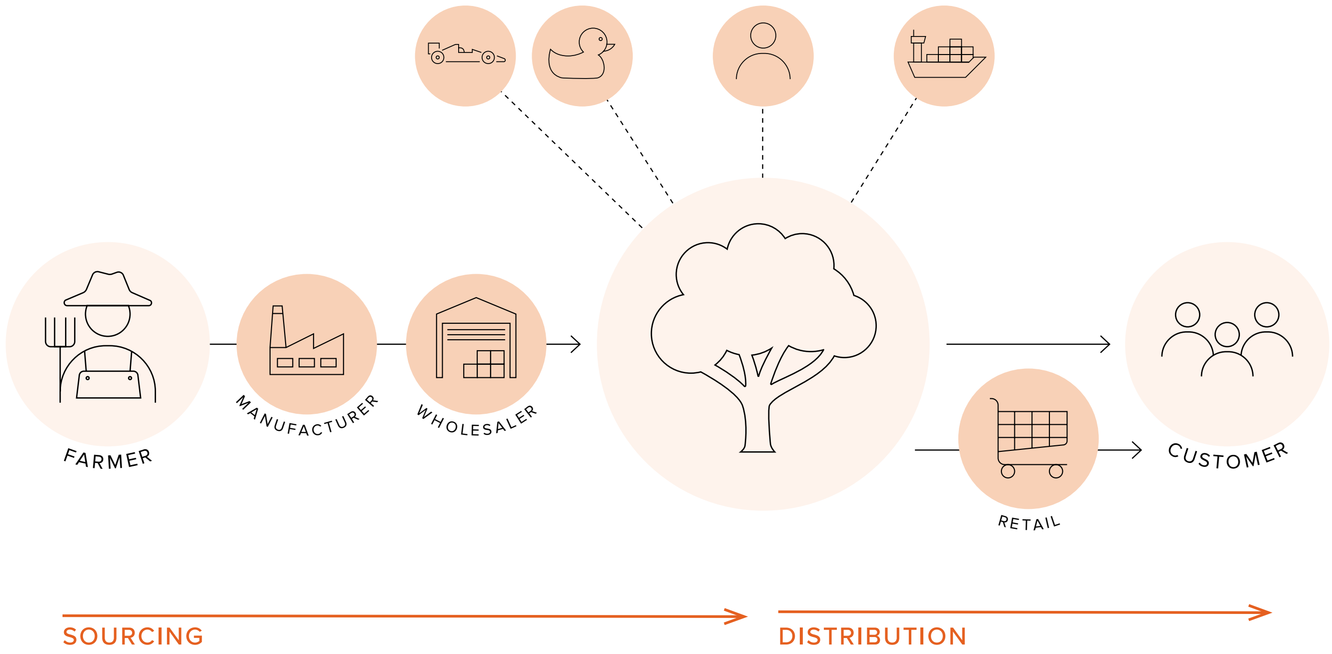
7.1. Value chain 1: **Natural rubber**

7.1.1. **Step 1:** Key value chain characteristics

Thailand is the world's leading producer and exporter of natural rubber, making the sector critical to the country's economy (BOI, 2016). The rubber value chain contributes 8.7 percent to GDP and 4.9 percent to exports and employs approximately 6 million people (Bank of Thailand, 2023a; UN Comtrade, 2021; Sowcharoensuk, 2022). Rubber products can be divided into three main types: upstream, midstream and downstream products. Upstream products are raw or semi-processed rubber, including dry rubber and cup lump (obtained when fresh latex is extracted by making a long cut in a rubber tree). Midstream products are processed and include technically specified rubber and concentrated latex, while downstream products are final products such as tyres, rubber bands and rubber gloves (ARC Group, 2022). In Thailand, tyres account for approximately half of the production of final products, while the rest is other products such as elastics and gloves (Sowcharoensuk, 2022). Upstream and midstream products are the main exports, with much of production exported to the Chinese and US markets (ARC Group, 2022).

The natural rubber value chain has many MSMEs involved in its key activities. About 87,000 MSMEs are active in the rubber value chain in Thailand (Asian Development Bank, 2022; Charoenrat and Harvie, 2021; Bank of Thailand, 2023a). The majority are small – under Thailand's definition, between 30 and 50 employees and making between THB 50 million and THB 100 million in annual income, depending on the sector (see table 4 for details). The value chain is clustered around four different activities, all of which have MSME presence: farming, manufacturing, trading and logistics/transport. These are visualized in figure xiii.

Figure xiii: The natural rubber value chain in Thailand



- Farming: There are approximately 1.6 million rubber farmers in Thailand, and among them, individual enterprises are prevalent. About 90 percent of rubber is produced in smallholder farms, with the rest produced in large plantations. Many migrant workers are employed in this activity (Sowcharoensuk, 2022).

- Manufacturing: Of 1,729 rubber manufacturing companies in the country, 1,680 are MSMEs, producing products such as tyres, latex gloves and rubber toys. On average, these MSMEs are micro-enterprises, with about 6–10 employees, and together they employed approximately 62,000 workers in 2012 (THNSO, 2012).

- Wholesale/trading: In rubber wholesale, 8,882 of 8,889 companies are MSMEs, employing around 28,980 workers. As in other activities in the sector, the majority of these MSMEs are micro-enterprises, employing 3–5 employees each (THNSO, 2012).

- Logistics and transport: All types of rubber products are easy to transport, non-perishable, and do not require special forms of transportation. Consequently, those involved in transporting rubber often fall into the general logistics chain and transport rubber alongside a myriad of other products. Therefore, it is not possible to state what percentage of MSME logistics providers focus solely on transporting rubber.

Digitalization and innovation in the rubber value chain is limited. The most advanced segment in terms of digitalization is retail. However, even here, digitalization is limited: in 2012, only 2.4 percent of rubber manufacturing companies sold online (41 out of 1,729 rubber manufacturing companies). In terms of wholesalers and traders, this dropped to 0.2 percent, as only 17 out of the 8,889 wholesalers sold online (THNSO, 2012). Improving digitalization could help to increase resilience within the value chain by increasing sustainability and traceability, both key needs for MSMEs in this value chain. For example, HeveaConnect in Singapore introduced a custom build platform to streamline the order-to-fulfilment workflow in the sector in order to enhance decision-making and risk management by digitalizing the entire value chain (through farmer, producer, customer and facilitator) (Agridence Rubber, 2021).

Aggregators in Thailand could play a key role in distributing risk solutions to MSMEs. Aggregators engaged with MSMEs in the production end of the value chain include government programmes, agencies and associations; in processing, large scale processors and manufacturers; and in logistics and retail, local branches of global manufacturers, traders, digital platforms and exporters. As regards increasing MSMEs' capacity to transfer and mitigate risks, these aggregators are well positioned to partner with insurers and other operators to sell products and risk mitigation technologies, or to introduce their own insurance or risk mitigation technology. Aggregators that are already offering risk mitigation technologies could be particularly well suited to the role, since they could act as both an aggregator and a risk management partner. For instance, the Rubber Authority of Thailand (RAOT) has a digital platform that uses satellite imagery to improve traceability and coordination in the rubber value chain. Data collected through the platform could be used for insurance as well as other purposes, such as soil suitability, fertilizer use, crop forecast and analysis of transportation data (AgroSpectrum Asia, 2023).

Table 17 provides a high-level overview of some of the potential aggregators in the rubber value chain.

Table 17: Aggregators in the rubber value chain in Thailand

AGGREGATOR	DESCRIPTION	Potential MSMEs in reach	Ability to collect premiums
The Thai Rubber Association (TRA)	TRA began as a trader-focused organization but expanded to processors and traders with strong ties to producers. It could likely establish commercial ties/collect premiums from members in some capacity, and has 40 permanent members among the major actors in the value chain and their suppliers.	40+	Likely
Bridgestone Thailand	This local branch of the global manufacturer produces 38% of tyres made in the country (a production that absorbs 50% of natural rubber production). It has commercial ties with a large number of actors in the value chain and would as such be able to function as a premium aggregator.	15,000–17,000	Likely
Rubber Authority of Thailand	RAOT is the public authority for the natural rubber sector and targets all 87,000 MSMEs in the value chain. However, RAOT does not have commercial ties with enterprises and has a particular focus on farmers and smallholders, especially through its price support policies.	87,000	No
Thai Rubber Latex Group (Thaitex)	Thaitex is the country's largest concentrated latex producer and supplier. It has a position more upstream in the value chain than other key actors and maintains commercial ties with a supply chai n of a pprox. 10,000 enterprises, most of which are MSMEs.	10,000	Likely
Agriac	This rubber processor and trader has a focus on providing sustainably sourced Forest Stewardship Council certified rubber, leaning on a network of 2,989 farmers.	2,989	Likely

Sources: Thai Rubber Association (2023); Bridgestone Thailand (2023); RAOT (2023); Thaitex (2023); Agriac (2023).

7.1.2. **Step 2:** Key risks faced and availability of risk solutions

In the rubber value chain, the nature of the challenges faced by MSMEs are specific to the type of activity in which the MSMEs are engaged. Based on KIIs and desk research, a range of core risks faced by MSMEs in this value chain were identified and are described in table 18.

Table 18: Risks faced by MSMEs in the rubber value chain in Thailand

RISKS	
Natural hazards and climate change	Since the value chain is reliant on rubber trees, climate change is a key risk that impacts the whole value chain from smallholder farmers to retailers, although smallholders bear the brunt of the risk. The southern parts of Thailand, where farming is concentrated, is subject to both floods and droughts that reduce yield (Sdoodee and Rongsawat, 2012). In addition to unpredictable weather events, another risk exacerbated by climate change is the outbreak of diseases such as leaf fall disease, which has been correlated with rising temperatures (Sowcharoensuk, 2022; Azizan et al., 2023). Climate risks can have a ripple effect across the value chain: if natural rubber farmers lose their crops, wholesalers and manufacturers can lose their supply and experience supply chain disruptions.
Pests and plant related disease	Pestalotiopsis leaf fall disease and other fungal diseases have significantly impacted the quality and supply of rubber in the last five years. For example, in 2019, more than 330,000 rai (52,800 hectares) of rubber were ravaged by Pestalotiopsis leaf fall disease, resulting in a 50% drop in production in four provinces with the loss of 40,000 tonnes of rubber (Bangkok Post, 2019). The impact of disease could result in natural rubber farmers losing their crops as well as putting future crops at risk, which would also mean wholesalers and manufacturers losing their supply.
Health risks	Rubber tapping (the process by which latex is collected from a rubber tree) and processing are demanding jobs. Health risks are significant both among farmers and manufacturers, due to tough physical working conditions and exposure to chemicals, fumes, dust and work-related accidents (Saksorngmuang et al., 2019; Powers and Lampel, 2015; EBRD, 2014). This risk is particularly threatening given the small sizes of MSMEs, since the loss of an MSME owner due to illness or injury can often result in the closure of the business, regardless of the MSME's activity type.

RISKS	
Shortening supply chain	Changes in the value chain have made rubber traders' incomes increasingly uncertain; the current trend is for local and international processors to buy directly from growers, thus cutting out the middlemen (Sowcharoensuk, 2022). For retail MSMEs, this could result in being completely outcompeted by processors, if they do not find a way to increase their competitive advantage.
Disintermediation and price control policies	The price of rubber products is kept high, both by artificially limiting supply and by government policies (Sowcharoensuk, 2022; Rubber World, 2023). For trading and retail MSMEs, this limits their ability to introduce competitive pricing, and at the same time forces manufacturing MSMEs to endure higher material costs.
Socioeconomic factors	The sector is not exempt from issues affecting Thailand overall, such as competition with other ASEAN members with lower labour costs, labour shortages, an ageing population and lack of investment in R&D, innovation and human resources development (Weerathamrongsak, 2013). All MSME activities are impacted by these issues to varying degrees. Therefore, they need risk transfer and mitigation solutions to free up capital in the event of unforeseen socioeconomic shocks.

Given the importance of the rubber sector, several risk mitigation and transfer solutions have already entered the Thai market. However, solutions specifically aimed at the rubber value chain tend to concentrate on the agricultural cluster. For example, in terms of risk transfer, Thailand's insurance regulator, the Office of Insurance Commission (OIC), recently launched a programme to develop tailored insurance for rubber farmers, primarily in the southern provinces, to address risks posed by natural hazards such as fire, floods and storms (Milliman, 2023). In risk management, some private sector initiatives aim to provide education to farmers in the value chain to address R&D and knowledge challenges (Yokohama, 2023). Other programmes to help farmers manage risks include government programmes aimed at reducing price fluctuation for farmers through price guarantees (Rubber World, 2023). While the agricultural sector has seen notable advancements in insurance solutions, there is a clear gap in the market for insurers and other stakeholders to tailor offerings specifically for non-agricultural MSMEs, although so far operators have faced challenges both in the development of suitable solutions and in effectively reaching this segment.

7.1.3. **Step 3:** Opportunities for holistic resilience solutions

This subsection explores potential risk solutions to better serve MSMEs in the rubber value chain in Thailand. Potential risk transfer and risk management solutions that could be introduced and combined are listed in table 19.

Table 19: Overview of potential risk transfer and risk mitigation solutions for the rubber value chain in Thailand

RISKS	POTENTIAL RISK SOLUTIONS	
	Risk transfer solution Insurance cover	Risk management solution
Natural hazards and climate change	• Parametric/index insurance directly linking climate events to coverage through sensors/data collection • Health coverage for climate impact on entrepreneurs and/or employees • Life insurance product	• Early warning systems for climate events and weather information apps/ broadcasts • An agriculture app and wireless sensor networks to address information asymmetries throughout the agricultural cycle • Increased availability of climate data analysed together with agricultural and development data to better assess impacts and risks • Heat and flooding sensors • A savings wallet • Climate-resilient farming
Pests and plant-related disease	• Parametric/index insurance or other types of crop insurance	• Pest identification apps • Improved information coupled with capacity-building on ways to mitigate, curtail and stop the spread of fungal and pest-related diseases • Improved tracking and management of business (digital forecasting models)
Disintermediation and price control policies		• Increased transparency and price information through app/portal

<table>
<tr><th rowspan="2">RISKS</th><th colspan="2">POTENTIAL RISK SOLUTIONS</th></tr>
<tr><th>Risk transfer solution
Insurance cover</th><th>Risk management solution</th></tr>
<tr><td>Health risks</td><td>• Health insurance for entrepreneurs and employees
• Property and casualty insurance solutions to cover damage risks typical of rubber manufacturing, such as employee accidents, exposure to chemicals and fumes and environmental damage</td><td>• Establishment of operational health standards and practices in rubber manufacturing
• Provision of protection equipment (either PPE or environmental protection)
• Support for use of lower impact processes and chemicals
• Provision of guidance broadly for mitigating health risks associated with rubber manufacturing
• Provision of guidance on lessened impact practices
• A savings product for a set number of clinic visits per employee</td></tr>
</table>

Opportunities for holistic solutions in the natural rubber value chain include:

- Combining insurance products with early warning systems and sensors. Climate-related risks, especially flooding, are becoming increasingly significant and could disrupt the rubber value chain. Therefore, farmers, as the starting point of the value chain, need particular support to transfer and mitigate risks associated with providing rubber supply. In effect, this will also reduce risks for manufacturers and wholesalers. One option for addressing climate risk is combining crop insurance with technologies such as early weather warning systems and heat and flood sensors. A climate/weather monitoring solution could provide accurate weather predictions and recommendations for farmers to make informed decisions on when to sow and when to reap crops. Heat and flood sensors would allow farmers to accurately assess the nature of the damage caused by climate hazards and trigger a timely payout to mitigate the risk of further damages and disruptions. For insurance companies, improved risk management would reduce the impact of extreme weather events on their loss ratios.

- To reduce the risk for wholesalers, traders and retail operators, price information and transparency could be improved. Intermediaries between the production and manufacturing stage and later in the distribution stage are particularly exposed to price fluctuations, both due to price-influencing policies and lack of information about prices and different supplier alternatives. MSMEs in this position are limited in their resilience to price shocks and depend on the efficiency with which they can connect with other actors in the value chain. Consequently, any solution that provides them with more price transparency and the ability to expand their supply and distribution networks allows them to better resist shocks in supply and demand. Digital solutions could leverage Thailand's high mobile phone penetration in and synergize with other initiatives in this space, such as the RAOT programme mentioned above (AgroSpectrum Asia, 2023).

- To successfully offer and distribute these products, insurers could partner with lead companies and risk management solution providers to reach MSMEs. For any solution to have maximum impact, it must make its way to MSMEs, and the selection of distribution partners should be done in line with identified risk profiles and risk solutions. For example, insurers could partner with aggregators, such as PPE providers, especially those that already provide goods directly to MSMEs, to act as distribution partners. This would remove the need for stand-alone agents to approach MSMEs directly and allow MSMEs to access insurance through channels with which they are already comfortable. Other alternatives for distribution partnerships are lead manufacturers and producers.

Combining risk transfer and risk management solutions for value chain actors holds great potential in addressing a myriad of risks. The approach taken with climate-related hazards and risks presented above can be replicated for other risks. For example, insurance and savings products could be combined with pest/disease identification apps and training to allow farmers to identify problems accurately and assess alternative solutions before tapping into savings and insurance. Another example is the combination of existing life insurance products or business disruption products with risk mitigation tools such as PPE; information on international best practice and standards for a safe workspace, specifically on rubber farms and in manufacturing; and industry-specific knowledge on less hazardous and even potential cost-cutting chemical alternatives to incentivize the use of safer products. In this way, rubber farmers and/or manufacturers could access a tailored solution that speaks to their immediate preventative-based and risk mitigation needs.

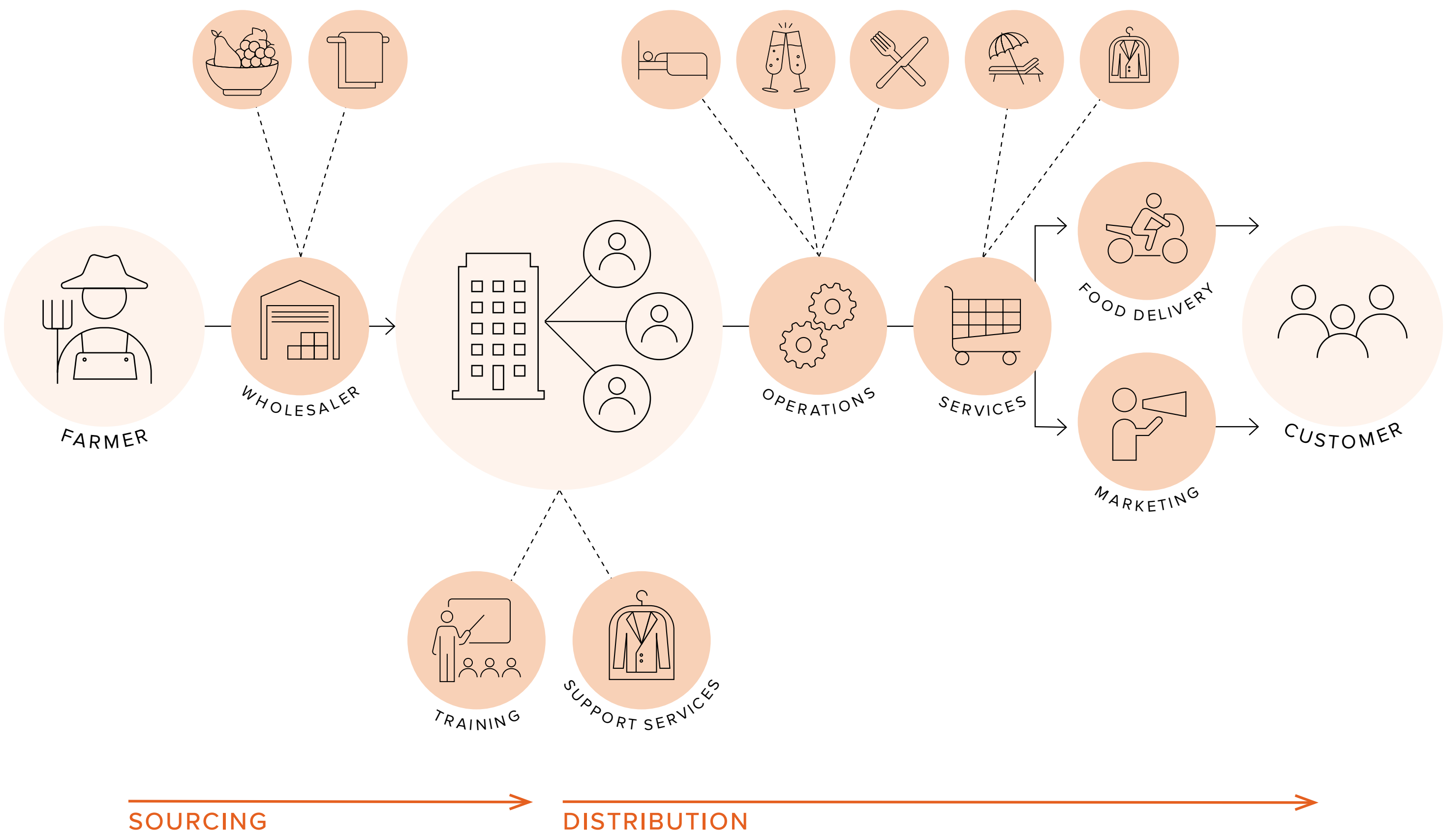
7.2. Value chain 2: **Accommodation and food services**

7.2.1. **Step 1:** Key value chain characteristics

Thailand has a booming tourism sector and is currently the ninth most visited country in the world. The COVID-19 pandemic had a severe impact on Thailand's economy and businesses; approximately one in four tourism MSMEs were forced to shut down (Parks, 2020). However, the return of visitors has enabled MSMEs in the sector to play a key role in Thailand's economic recovery (NESDC, 2023). The tourism sector currently contributes 18 percent of Thailand's GDP and employs approximately 2.9 million people, mainly in the accommodation and food services subsectors (Bank of Thailand, 2023a; Biswas, 2022; Lumkam, 2022; Phoonphongphiphat, 2022). These two subsectors host 260,000 enterprises, of which 99 percent are MSMEs (Bank of Thailand, 2023a; THNSO, 2012). Despite their number, the majority of these MSMEs are small in size, employing approximately five people on average (THNSO, 2012).

MSMEs in the accommodation and food services subsectors play several different roles in the value chain. In terms of geography, MSMEs in these subsectors have traditionally been concentrated in a few areas: Bangkok, Phuket and Chiang Mai. However, in recent years, they have spread to other locations as tourists have diversified their interests (Lumkam, 2022; Wongtada and Krairit, 2017). In terms of activities, MSMEs in the accommodation and food services subsectors play a variety of roles across the tourism value chain; for this report, however, the focus is on the value chains of these subsectors themselves. Figure xiv visualizes a high-level value chain for both accommodation and food services in the tourism sector.

Figure xiv: The accommodation and food services value chain in Thailand



- MSMEs can play several roles in sourcing for accommodation and food service providers in the tourism sector. Key activities include farmers, wholesalers, downstream support services providers (such as cleaners, laundromats, maintenance etc.) and even temporary staff providers (from dedicated skills such as cooking to general skills such as waiting tables).

- Several operators, both accommodation and food providers, are MSMEs themselves. These include guesthouses and short-term rentals in the accommodation subsector and food stalls and restaurants in the food services subsector.

- Finally, the distribution chain includes several activities, such as marketing and sales, delivery (from food providers) and even aggregators such as Uber Eats.

Digitalization is increasingly playing a role in facilitating recovery and sustainable growth in the tourism sector. COVID-19 highlighted the need for businesses to be more resilient, especially in the face of unpredictable shocks related to pandemics and even climate change. In light of this need, the

Government has been encouraging operators to use digital platforms to reach more customers (Santhika, 2023). Operators are using technology to increase and restore traveller confidence, to increase their digital presence, to attract more tourists and to simplify their booking and payment systems to enhance the tourist experience. Digital sales of services have increased significantly; in 2012, only 1 percent of enterprises in the sector used digital channels (THNSO, 2012), whereas in 2022, 20 percent of sales were conducted online and half of tourism enterprises reported internet use, though only 13.3 percent have their own web presence (GSM Association, 2022). By 2023, approximately 100,000 enterprises in the sector (40 percent of the total) had made use of the tourism app ThailandConnex (Ajanapanya, 2023).

In Thailand's tourism sector, several aggregators engage with significant portions of the accommodation and food services value chain. MSMEs in the tourism sector rely on both collaboration and competition to grow their businesses. For example, a tour operator may collaborate with a hotel to provide an attractive package to tourists, but it will still need to compete with other tour guides for that partnership. Key aggregators that reach the majority of the MSMEs in these value chains include associations and digital platforms. Some potential aggregators in both subsectors are listed in table 20.

Table 20: Aggregators in the accommodation and food services value chain in Thailand

AGGREGATOR	DESCRIPTION	Potential MSMEs in reach	Ability to collect premiums
The Tourism Authority of Thailand (TAT)	This government agency has a big impact on the whole value chain, but only from a regulatory and promotion standpoint.	260,000	No
ThailandCONNEX	ThailandCONNEX is a government-supported digital platform aimed at promoting and revitalizing the Thai tourism industry after the COVID-19 pandemic. It supports partners and tourism operators to transform themselves by using digital technology to enhance competitiveness.	100,000+	Yes
ATA Services Thailand	ATA Services is a wide spectrum service solutions company providing adapted solutions for enterprises in Thailand, with tailor-made solutions for MSMEs and large enterprises.	2,000+	Yes

AGGREGATOR	DESCRIPTION	Potential MSMEs in reach	Ability to collect premiums
Thai Tourism Directory	The Thai Tourism Directory is a digital platform created by the Ministry of Tourism and Sports, aggregating all available tourism offers of partner enterprises, showcasing over 6,300 partners and tourist attractions.	5,000+	Likely

7.2.2. **Step 2:** Key risks faced and availability of risk solutions

The risks that the accommodation and food services value chain faces also affect most of the other value chains in the tourism sector. This means some of the solutions explored here could be tested, refined and extrapolated to MSMEs in other activity areas. It is important to note that the impact of these risks depends on the exact type of MSME in the accommodation and food services value chain; for example, heavy rainfall may have a more severe impact on a food stall than on a restaurant. Qualitative consumer research would be critical to further unpack these nuances. Some key risks to this value chain are explored in table 21.

Table 21: Risks faced by MSMEs in the accommodation and food services value chain in Thailand

RISKS	
Natural hazards and climate change	Climate change and natural hazards represent a key risk affecting the whole country to different degrees. Islands and coastal areas popular with tourists are at particular risk from rising sea levels, tropical storms, beach erosion, coral bleaching and water shortages. Central and northern regions are more sensitive to extreme precipitation and flooding. Heatwaves affect the whole country, but particularly urban areas (GIZ, 2019). For accommodation and food services providers, this could result in a wide range of additional risks that could cause business interruption, such as limited access to key value chains for the supply of food and other goods as well as damage to property.
Pandemics or similar adverse events	The sector is very reliant on international travellers, and as such is vulnerable to geopolitical risks and health emergencies, all of which have limited predictability.

RISKS	
Informality	Accommodation and food service MSMEs in Thailand suffer from strong competition in the informal sector and by other actors occupying the same space but not subject to the same regulation, such as AirBnB (NESDC, 2023).
Food spoilage	Food spoilage due to improper transport, storage and/or use is a sector risk that is exacerbated by extreme heat and climate change.
Property damage and injury to customers on company property	Accommodation providers and food providing services, regardless of the type of establishment, are susceptible to damage to property and liability for injury of visitors on company property.
Access to markets	An oversupply of accommodation and high dependency on international travel puts MSMEs at risk of losing business due to an inability to compete for visitors and customers (Lumkam, 2022).

Targeted insurance for operators in the tourism sector is notably absent in Thailand. Several programmes exist to build the resilience of accommodation and food services providers in the tourism sector, mostly focused on digitalization, to strengthen operators' ability to attract visitors, and on diversifying the tourism sector, in terms of types of visitors and activities available for tourists. The Tourism Authority of Thailand, for example, has launched the Amazing Thailand Brand, which aims to increase Thailand's digital footprint and image as a preferred holiday destination. To enhance its efforts, it has partnered with international payment providers such as AliPay and WeChat to align with tourist needs and preferences (TAT, 2023). In addition, the Government has approved a programme to foster domestic tourism by subsidizing Thai citizens' travel expenses (Thai PBS World, 2023). However, insurance solutions for the tourism sector are absent, presenting a clear future opportunity to combine existing efforts with risk transfer solutions.

Thailand's approach to building resilience is also climate conscious. Climate change is being integrated into government programmes such as the National Tourism Development Plan. Part of the strategy includes reducing the load in tourism hotspots, for example, by diversifying and distributing to other areas. Development partner GIZ is supporting the development of the risk-based National Adaption Plan, which has included facilitation of knowledge exchange among tourism stakeholders to manage climate risks (GIZ, 2019).

7.2.3. **Step 3:** Opportunities for holistic resilience solutions

This subsection explores potential holistic risk solutions for the accommodation and food services value chain, specifically in the tourism sector in Thailand. Potential risk transfer and risk management solutions that could be introduced and bundled together are listed in table 22:

Table 22: Overview of potential risk transfer and risk mitigation solutions for the accommodation and food service value chain in Thailand

RISKS	POTENTIAL RISK SOLUTIONS	
	Risk transfer solution Insurance cover	Risk management solution
Natural hazards and climate change	• Weather event insurance • Property insurance • Business interruption insurance	• Increased information on weather events • More accurate early warning systems for climate events • Heat and flooding sensors
Pandemics or similar adverse events	• Business interruption insurance	• Diversification of activities less reliant on international travellers, such as domestic travel
Access to markets	• Travel insurance covering accommodation failures, low quality or unexpected issues through smart assessment technologies, improving trust	• Digitalization and virtual presence training to enable MSMEs to attract and retain visitors • Partnerships with booking platforms and other aggregators to enable access to digital markets for MSMEs
Food spoilage	• Goods-in-transit insurance	• Sensor-based cargo tracking devices
Property damage and injury to customers on company property	• Property insurance	• Fire sensors • Security cameras • Heat and flooding sensors

Bundled insurance offers insurers an opportunity to address several risks in this value chain simultaneously. Since some risks in this value chain are systemic and insurance uptake is generally low, relevant types of insurance could be combined to cater better to needs in this value chain. For example, property insurance could be combined with weather event coverage, effectively enhancing resilience against a range of risks associated with climate change.

Given the drive towards digitalization, one easy solution would be to partner with digital platforms. MSMEs in the accommodation and food services space compete not only with local operators but also with international operators. Thus, they need to increase their digital visibility on platforms that are trusted and used by tourists. This includes partnering with or joining platforms like Booking.com and Uber Eats as well as providing digital skills training. Insurers could leverage this drive towards digitalization to partner with booking platforms to offer and distribute property damage insurance, business interruption insurance or even weather event insurance to better reach MSMEs with targeted products. These platforms could then also be used to collect premiums.

Forward-looking insurers could explore piloting a holistic risk solution that integrates insurance with the booking process to generate visitor trust. According to Condor Ferries (2023), travellers visit approximately 38 different websites before deciding what to do and where to stay, and 82 percent of travellers book travel or tourist activities through a website or mobile app. This means that travellers build their first perceptions of and trust in a place through what they see online. If accommodation providers and food service providers can guarantee their existence (i.e., have a reputable source verify that they are legitimate) and guarantee the quality of their service (i.e., have the same reputable source verify that the quality of the experience is what it claims to be), they could add a significant competitive advantage in competing for visitor attention. Booking sites such as Booking.com already offer this to service providers, and the value could be enhanced by adding insurance to the visitor experience to give tourists confidence in the provider. To action this, insurers could partner with booking platforms to offer visitors insurance on the provider they select. Insurers would also need to leverage smart technology to verify visitor experience. If the experience is bad, visitors would recover their funds, which would allow them to rebook at a new place last minute. In addition, booking platforms could offer a range of insurance and risk management solutions to the MSMEs themselves.

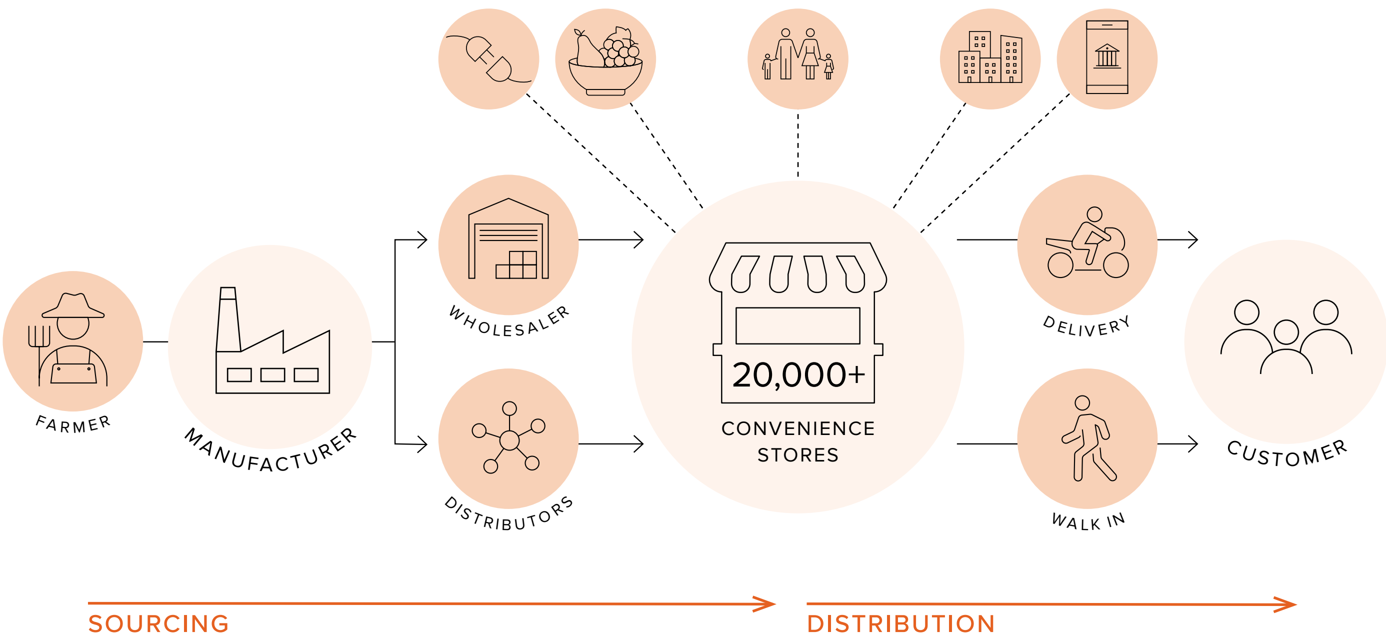
7.3. Value chain 3: **Wholesale and retail value chain**

7.3.1. **Step 1:** Key value chain characteristics

Across all economic sectors, the wholesale and retail value chain hosts the most MSMEs and employees in Thailand. Approximately 20 percent of all Thai MSMEs are active in this sector, and of all enterprises in this sector (388,000), 99 percent are MSMEs (Asian Development Bank, 2022; THNSO, 2012). The sector contributes about 6 percent to GDP and employs approximately 2.4 million people (Poapongsakorn et al., 2019; World Bank, 2022a). The sector struggled during COVID-19, but is recovering well. Growth is primarily driven by sales of agricultural products such as fruit and vegetables and retail electronics (NESDC, 2023).

The sector is heterogeneous both and within across different stages of the value chain. MSMEs are present in all stages of the value chain, including farming, trading, manufacturing, transport and retailing. This value chain is depicted in figure xv.

Figure xv: The wholesale and retail value chain in Thailand



- Farmers/manufacturers: Retail goods are typically sourced directly from farmers and/or manufacturers and then transported to retailers.

- Retailer and wholesalers: In the retail segment of the value chain, several clusters can be identified, including discount stores, hypermarkets, supermarkets and convenience stores. Convenience stores is the subsector most heavily populated with MSMEs, with a cluster of approximately 20,300 convenience stores across Thailand (Frost & Sullivan, 2016).

- Distributor channel: Distribution in retail can take a few forms, including walk-in customers (the direct selling route) and delivery systems, whereby goods are delivered to the customer through retailer employees or delivered via a contracted delivery company. E-commerce platforms are also increasingly popular as a distribution channel.

Retail and wholesale are highly digitalized in Thailand. Research shows that the majority of retailers (over 90 percent) use digital tools to sell products online or to facilitate delivery, and of these, 65 percent have a permanent online presence (Asian Development Bank, 2022; Frost & Sullivan, 2016; THNSO, 2012; Tunpaiboon, 2021).

The sector is also rich with aggregators that engage with MSMEs. Table 23 provides a high-level overview of some of the aggregators in the wholesale and retail value chain in Thailand.

Table 23: Aggregators in the wholesale and retail value chain in Thailand

AGGREGATOR	DESCRIPTION	Potential MSMEs in reach	Ability to collect premiums
Thai Retailers Association	The Thai Retailers Association was first established in 1979 with the cooperation of the retail business. Its 50 members comprise the main actors in the sector, able to reach a large part of the value chain through their partners.	100,000+	No
CP All Plc.	This large retailer is a major player in the retail space in Thailand, thanks to their exclusive ownership of the 7-Eleven brand in the country.	50,000+	Yes
Thaitrade.com	Thaitrade.com is an official B2B electronic mall established by the Ministry of Commerce's International Trade Promotion Department. The main purpose of Thaitrade.com is to boost trade opportunities for Thai exporters, particularly small and medium-sized enterprises.	70,000+	Likely
Tradewheel	Tradewheel is one of the main global actors in the B2B platform landscape, with a strong growth dynamic. It has 7.5 million users in 190 countries.	100,000+	Likely
Eworldtrade	This global B2B platform is a current leader in the sector, with 1 million+ traders across 195 countries.	100,000+	Likely

7.3.2. Step 2: Key risks faced and availability of risk solutions

MSMEs in the retail and wholesale sector face a range of different risks, from business interruption and business owner risks to stock-related risks. The key types of risks faced in this value chain are summarized in table 24.

Table 24: Risks faced by MSMEs in the retail and wholesale value chain in Thailand

RISKS	
Forced closures	Climate risks, natural hazards and pandemics can cause unplanned closures. A key risk for retailers, in particular small ones, is business interruption and demand shocks due to health emergencies, natural catastrophes and climate change events or critical changes in business environment (Frost & Sullivan, 2016; Poapongsakorn et al., 2019; Tunpaiboon, 2021; World Bank, 2022a).
Health risks	Small MSMEs, especially convenience stores, are often family-run, with few employees. Health risks are thus particularly threatening; the loss of an MSME owner due to illness can often result in the death of the business regardless of the MSME activity type (Charoenrat and Harvie, 2021).
Liquidity risks	Retailers face significant liquidity risk because of difficulty in accessing financing (one of MSMEs' main reported business obstacles) and fluctuations in demand, which can be due to shocks in consumers' disposable income (World Bank, 2016).
Inventory damage, loss, expiration and theft	In a warehouse, while in transport, or in stores, retail inventory is constantly at risk of being damaged and stolen. Factors such as weather, poor storage conditions and mishandling can all lead to damage, while inventory can also go missing due to theft, errors in shipping and receiving, and natural hazards (APS Fulfilment, 2022; Tunpaiboon, 2021). This risk is amplified by the fact that it translates into a loss in opportunity to sell.

Public programmes have been put in place to help MSMEs in the retail and wholesale value chain mitigate some risks, but more innovative private sector solutions are needed. During the COVID-19 pandemic, a government initiative was launched to sustain demand in the retail sector by providing stimulus packages for individuals buying from local retailers (Thai PBS World, 2021), and the programme remained active in 2023. Some private sector initiatives have also been established to address liquidity risks and financing challenges. For example, e-commerce platform Lazada partnered with Siam Bank to offer SMEs on the platform digital loans to aid in expansion (Siam Commercial Bank, 2018). Other initiatives target climate risks in agriculture that impact perishable goods; these include insurance products compensating crop losses through innovative sensors and weather data (Araullo, 2023a). However, a gap exists in relation to retail-specific risk transfer and management mechanisms.

7.3.3. **Step 3:** Opportunities for holistic resilience solutions

This subsection explores some potential holistic risk solutions for the retail and wholesale value chain in Thailand. Potential risk transfer and risk management solutions that could be introduced and bundled together are listed in table 25.

Table 25: Overview of potential risk transfer and risk mitigation solutions for the retail and wholesale value chain in Thailand

RISKS	POTENTIAL RISK SOLUTIONS	
	Risk transfer solution Insurance cover	Risk management solution
Business interruption and forced closures	• Weather event insurance • Business interruption insurance	• Facilitation of digital solutions adoption to diversify distribution channels for retailers • Increased information on weather events • Early warning systems for climate events • Heat and flooding sensors
Liquidity risks	• Business interruption insurance • Business owner life insurance and/or health insurance	• Business management solutions such as digital cash-flow management systems and inventory trackers • Credit solutions that leverage (digital) records to which an aggregator has access • Invoice financing and supply chain financing • Savings solutions with early redemption mechanisms • Lease/finance solutions through insurance policy with straightforward approval process
Health risks	• Income protection cover • Health insurance for business owners • Life insurance, especially for small and/ or family-run MSMEs	• Health-related savings products for the business owner
Inventory damage, loss, expiration and theft	• Theft insurance • Fire insurance	• Anti-theft technology • Early warning fire sensors • Inventory management system

Traditional insurance products coupled with improved distribution channels could meet the needs of MSMEs in this value chain. Research suggests that traditional insurance has not effectively penetrated MSMEs in the retail and wholesale value chain. However, the key types of risks, specifically business disruption and damage to inventory and loss in stock, could easily be addressed using available insurance products. To better cater to the MSME market, insurers need to consider investigating the extent of these challenges and the resources available to MSMEs and then amending their available products to speak to these needs. This could be enhanced by providing easy and accessible access to products, for example, by partnering with e-commerce platforms that offer delivery to insure goods in transit.

Combining risk management solutions with insurance products could help insurers to better cater to the MSME market. Putting together risk transfer and risk management solutions would allow MSMEs to better mitigate risks and give them protection if risks materialize. For example, increasing the use of digital inventory management systems would allow smaller businesses to forecast cash flow and better manage their liquidity, while business interruption insurance would still be important to help in cases where businesses have not succeeded in mitigating risk. Similarly, businesses could use cameras and anti-theft technology to mitigate the risk of theft, while having insurance in the event of theft. Existing digital platforms that are already used by retail and wholesale MSMEs could be leveraged to distribute these and similar types of holistic resilience solutions.

7.4. Summary of findings

Climate risk manifests in all value chains to varying degrees and with varying impacts. Climate risk is increasingly significant for actors across all value chains. In the three selected for this report, climate risk manifested in a variety of ways: in rubber, it has an impact on crop survival; in accommodation and food services, it has an impact on produce and tourist supply as well as properties; and in retail and wholesale, it, along with natural hazards, can manifest in supply chain shortages and business interruption. Products and offerings that provide risk transfer and risk mitigation solutions will increasingly be required to respond to climate-related risks.

Traditional insurance is needed in all three value chains, but its rigidity and limited distribution undermines its uptake. Traditional insurance uptake remains limited across the three value chains despite the risks they face, highlighting the need for insurers to analyse different MSME segments more actively to better understand their risks and to develop products that respond to those risks, such as retail and restaurant insurance. An alternative to developing new products is to explore flexible insurance bundles that allow MSMEs to combine various types of insurance that speak to their business needs, such as business interruption and weather insurance.

Alternative and more innovative distribution channels for traditional insurance need to be explored to effectively reach MSMEs. Low insurance uptake is in part also due to limited and ineffective distribution channels. KIIs and research suggest that brokers and agents in Thailand are neither well equipped nor well incentivized to approach MSMEs. KIIs also revealed that MSMEs may not be placing a high priority on insurance. To overcome this, insurers should explore linking their products with alternative distribution partners and platforms that already provide a service or product to MSMEs. For example, health insurance could be offered with PPE and retail insurance could be combined with a product delivery service.

Coupling risk management solutions with insurance has the potential to appeal to more MSMEs by speaking to their needs. MSMEs are already using coping mechanisms to address many of their challenges. This logic could be leveraged to develop more holistic solutions to speak to MSME needs. For example, MSMEs in retail may already be using cameras to prevent theft, MSMEs in rubber farming may already be using weather apps and early warning systems, and MSMEs in accommodation and food services may already be using digital advertising and booking platforms to attract and secure visitors. These existing mechanisms could be coupled with insurance products to allow MSMEs to mitigate the risk, and then address the risk if it materializes. For example, anti-theft technology could be coupled with retail insurance, early warning systems could be combined with parametric insurance, or digital marketing and booking systems could be coupled with travel insurance.

More consumer research and primary data collection is urgently needed to understand and better address MSME risks. Once MSMEs have been appropriately segmented and clustered, and their overarching risks are understood, these risks and potential solutions need to be tested with MSMEs to ensure they are relevant and in line with MSMEs' risk profiles and needs. To do this, insurers could collect direct consumer feedback or leverage national data sources to gain insights into MSME realities to better design and distribute holistic risk solutions.

8 Recommendations to enhance MSME resilience

Enhancing resilience among MSMEs is a shared responsibility. As this report has shown, actors across Malaysia and Thailand are proactively working towards building MSME resilience. The main emphasis of this report is on how insurers can (and should) adapt how they approach MSMEs as a customer target market. However, MSMEs' resilience is affected by a broad range of ecosystem and environmental factors, some of which may be so significant as to preclude private sector engagement. Therefore, to make MSMEs more resilient, the public sector (policymakers and regulators) has a part to play as well as the private sector (insurers, aggregators, etc.). The development sector (development consultants, donors, etc) can play a key enabling and facilitative role towards supporting the achievement of these objectives. This section brings together key recommendations for public sector, the private sector and development actors to enhance their efforts and to contribute to building MSME resilience more meaningfully and more holistically in the target countries and in the region as a whole.

8.1.1. Recommendations for the public sector

Facilitating and encouraging the development of innovative holistic resilience solutions starts at the policy level. Policymakers are responsible for laying the groundwork by ensuring that policies and strategic objectives clearly promote MSME resilience as a vehicle for achieving national objectives related to growth and development. The key recommendation for policymakers is thus to support the development of a conducive enabling environment for public and private sector stakeholders. Specifically, governments need to provide a clear mandate to regulators and support the development of key ecosystem enablers for MSMEs, such as essential skills and infrastructure, as well as encouraging investment and access to finance.

Public–private partnership (PPP) collaboration can help with large macro-level risks, such as natural hazards. For large risks affecting a large number of MSMEs, the public sector may also play a direct role in managing and/or mitigating risk, particularly when the size or regularity of risks are considered uninsurable. Natural hazards, such as urban flooding, require critical infrastructure, like storm drains, not only to be in place but also to be well maintained by local government to proactively manage risk.

Regulators in the insurance sector should create an enabling environment in which innovation can flourish. Few countries have MSME product-specific regulatory challenges; barriers to the development of holistic resilience solutions are typically rooted in limited innovation within a market. Therefore, regulators should focus on creating an enabling environment for innovation by adopting a flexible and accommodating approach to promote responsible innovation and respond to innovative developments (Gray et al., 2022).[18] Emphasis should be placed on encouraging all types of innovation, while signalling to the market that MSMEs are a priority target market. To achieve this, recommendations for regulators are to:

- Ensure that product approval and licensing is appropriate. Unclear and excessive regulations can limit expansion, innovation and entrepreneurship. Therefore, regulators should ensure that the product and licensing approval process is consistent, transparent and easy to follow. In addition, regulators should stay abreast of new regulatory best practices and update licensing requirements as appropriate (i.e., to support and enable innovation while maintaining market stability and consumer protection objectives) (Gray et al., 2022).

- Signal opportunities to the market. Regulators are in an ideal position to signal opportunities for MSME-targeted innovation to the market through (1) offering guidance on how they will approach new and emerging trends relevant to MSMEs, such as alternative distribution; (2) providing clarity on areas with which private sector players are struggling, for example, by providing qualifying criteria for institutions with which they can partner to offer and distribute holistic resilience solutions; (3) regularly attending platforms for collaboration and cooperation; and (4) promoting innovation platforms and tools such sandboxes and techsprints.

- Monitor the risk of new partners and types of actors in the insurance value chain. The regulator needs to understand, monitor and encourage new types of business models and partnerships in the insurance market. In doing so, the regulator should use guidance notes, Q&A sessions and online notices to flag riskier partners and types of actors in the insurance value chain and advocate for a risk-based approach when considering all partners (i.e., increasing risk mitigation measures and due diligence for partners and business relationships that pose a higher risk).

- Clarify ownership and fair use principles of data collected. Specifically, regulators should provide clear guidance on (1) who owns any data collected, (2) how data should be protected and shared, (3) what appropriate use of data looks like and when consent is required, and (4) how to ensure that enhanced data collection does not contribute towards exclusion.

18 For more information, see the "Regulating for Innovation Toolkit" (Cenfri, 2021).

8.1.2. Recommendations for the private sector

Insurers should play a central role in enabling MSMEs to manage their risks. Given the value of MSMEs in the ASEAN region, both in terms of their collective size in the market and their contribution to growth and livelihoods, the role that insurers could play is disproportionately significant. However, insurance uptake remains dismally low. To better serve and reach MSMEs, and by so doing to contribute to their resilience, insurers should:

- Segment MSMEs by value chain to identify those with the strongest business case. The risks faced by MSMEs in each of the six value chains show that insurance products are much needed. However, traditional insurance uptake remains limited across all value chains. This highlights a clear gap in the market and exposes a semi-untapped target group. But, as discussed, insurers face supply-side and demand-side challenges to serving MSMEs (including limited information to enable them to understand MSME risks, low incentives to serve MSMEs, and a perception that MSMEs are not interested/aware of insurance). Segmenting MSMEs by value chain overcomes several of these challenges by grouping MSMEs based on criteria that allow insurers to understand the risks and needs of a group of MSMEs as well as the aspirational level of the group, and subsequently to identify value chains with an attractive business case with the information needed to develop appropriate products.

- Enhance risk products by better understanding the target market. Segmenting MSMEs by value chain is just the start. This process can be enhanced by leveraging direct consumer feedback, existing research and/or national data sources to gain insights into MSME realities and to better design and distribute holistic risk solutions. Consumer research will also shed greater light on the nature of challenges faced by MSMEs.

- Expand the catalogue of risk solutions. As explored in chapters 6 and 7, traditional risk solutions are not landing well with MSMEs. Once the value chains with the strongest business case(s) have been identified, it will be essential to develop a variety of holistic risk solutions that effectively address MSME needs and consider their relevant realities. Two key types of risk solutions, with examples from Malaysia and Thailand, are summarized in table 26.

Table 26: Expanding insurers' risk solution catalogue

Type of risk solution	Examples from Malaysia and Thailand
Bundled insurance, that is, combining different types of insurance, can help to address more than one risk, or to more effectively address one type of risk.	Bundling property insurance with weather event coverage can effectively enhance resilience against a range of risks associated with climate change (such as floods).
Combining risk mitigation tools with risk transfer tools can help better prevent and address a risk as and if it manifests.	To address the risk of injury or illness, insurers can couple health insurance with PPE and training on international standards and best practices for a safe working environment.

- Leverage alternative distribution partners (specifically aggregators). The current distribution channels (brokers and agents) are neither effectively reaching MSMEs nor successfully conveying the value of insurance products. To address this deficit, insurers need to tap into alternative distribution partners. Partnering with aggregators specifically has several benefits for insurers. This includes increased access to information and data (insight into how MSMEs in a particular value chain function and operate), to established engagement channels, and to trusted and verifiable partners. Partnerships like this can enhance both existing and new risk solution products. For example, insurers could partner with major suppliers in the retail and wholesale value chain to provide goods-in-transit insurance to secure products as they are transported to smaller convenience and mom-and-pop stores.

- Leverage digitalization to enhance products and better reach MSMEs. Digital tools and digitalization programmes are increasingly being used to build MSME resilience in Malaysia, Thailand and the broader region. Insurers should leverage this digital drive to better serve MSMEs. Ways to achieve this include (1) combining insurance, such as business interruption insurance, with low- and high-tech solutions such as flood sensors and back-end accounting systems; and (2) partnering with digital platforms to better reach MSMEs: for example, partnering with Grab or Uber Eats to provide motor accident insurance.

Aggregators should help to close the gap between insurers and MSMEs. Aggregators within a specific value chain have unique insight into the purchasing behaviours, risks and operations of MSMEs within that value chain and have existing and established relationships with these MSMEs. This makes them very valuable partners for insurers. However, aggregators can also see benefits from partnering with insurers: they can (1) increase/enhance their own product offering(s); (2) diversify their income streams through commission; (3) increase the resilience of their MSME customer base, thereby strengthening their purchasing power, improving their sustainability and potentially increasing customer loyalty; and (4) strengthen their own sustainability and growth by partnering with an established and trusted insurer. Therefore:

- Insurers should develop a business case to attract, incentivize and onboard suitable aggregators that can help them reach and better serve MSME value chains that present a significant business case.

- Aggregators should consider how new/existing products could be improved with risk solutions. To enjoy the benefits listed above, aggregators could approach insurers with a proposal/business case for partnership. This is, however, not the only route; some aggregators are in a strong position to develop and launch their own risk solutions. Aggregators such as Grab and foodpanda have already begun to offer their own resilience products, such as personal accident coverage for drivers.

8.1.3. Recommendations for the development sector

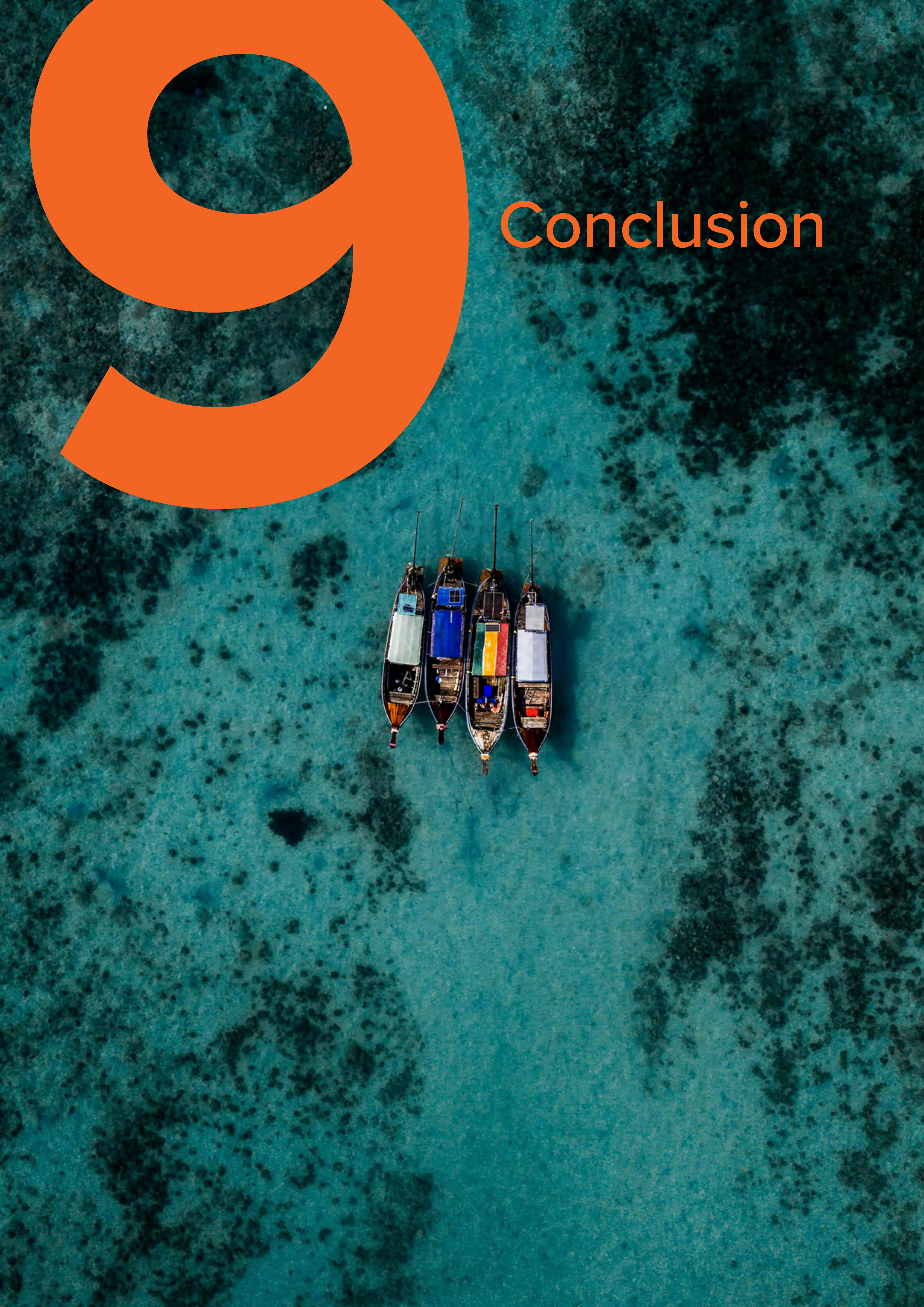
The development sector should play a key role in facilitating the development and distribution of innovative holistic resilience solutions. The development sector, including donors, development partners and development consultants, can support the creation of an enabling environment for the private and public sectors. Specifically, it can provide actors with a solid evidence base on which to draw, support collaboration within and between public and private sectors, and help drive and build commitment to a common innovation agenda directed at increasing the resilience of MSMEs. To do this, the development sector should:

- Conduct consumer research and primary data collection to spotlight MSME risks and needs. While the private sector is capable of appropriately segmenting and clustering MSMEs to identify those with a viable business case, companies often lack the resources and institutional mandate to conduct market-wide research. In addition, they are unlikely to publish their research widely to benefit the insurance market. The development sector is in an ideal position to conduct the consumer and market research necessary to (a) gather valuable insights on MSME risks and needs; (b) publish this data for all stakeholders to leverage; and (c) ensure that publications contribute to growing the evidence base on MSMEs.

- Contribute to de-risking investment in, and promote the re-thinking of, holistic resilience solutions. Through consumer and market research as well as through co-funding, donors and development partners can encourage and incentivize traditionally hesitant industry players to take the step towards developing more innovative and holistic resilience solutions that cater to MSMEs. To do this, they can (1) collect and analyse data to build a strong evidence base on MSMEs for industry players to use; and (2) create transparency around the needs, risks and realities that MSMEs face.

- Coordinate innovation ecosystems and efforts. To build a fruitful environment for innovative resilience solutions, key industry players need to be convened and coordinated on a regular basis through a variety of relevant platforms (workshops, techsprints, conferences and networking events). Development partners and donors can play a key role in hosting and facilitating these platforms, while acting as intermediaries between stakeholders. An essential component of this is taking ownership of channelling and shaping the development and growth of a common innovation agenda directed at increasing the resilience of MSMEs (Gray et al., 2022).

9 Conclusion



Building MSME resilience in the ASEAN region requires an alternative approach. As the report shows, MSMEs are key to socioeconomic development in the ASEAN region as a whole and in the two focus countries of Malaysia and Thailand. Despite facing risks that threaten not only their contribution to development but even their survival, MSMEs remain dismally underserved by insurers. This is primarily due to the unsuitable and complex nature of existing insurance products and to ineffective distribution channels. The situation represents a development challenge, but also a commercial market opportunity. Addressing this challenge, and enabling insurers to tap into this market opportunity, calls for an alternative approach to developing risk solutions for MSMEs that (1) segments and targets MSMEs in a way that addresses their specific needs and risk profiles; and (2) builds MSME resilience through holistic solutions (incorporating both risk transfer and risk mitigation tools), which, in turn, build interest and trust between MSMEs and insurers.

Leveraging a value chain approach to segment and understand MSMEs is essential. Due to the degree of heterogeneity among MSMEs, effectively segmenting and prioritizing clusters of MSMEs is a crucial first step. The value chain approach, as visualized in figure xvi, allows insurers and other operators to (1) segment or cluster MSMEs effectively; (2) identify which value chains present a business case for risk solutions; and (3) assess the risk profiles, needs and realities of each chain, thereby enabling them to develop and distribute appropriate solutions.

Figure xvi: Summarized value chain segmentation approach to effectively serve MSMEs

Step 1a	Step 1b	Step 2	Step 3
Segment MSMEs by using a value chain approach	Evaluate value chain aggregators to reach MSMEs	Identify the key risks and needs of MSMEs	Ideate holistic resilience solutions

Segmenting MSMEs by value chain in Malaysia and Thailand successfully identified opportunities for holistic resilience solutions. By applying the approach visualized in figure xvi, three value chains were selected per country based on their contribution to economic development and welfare as well as their commercial viability for holistic resilience solutions. In Thailand, the value chains chosen are natural rubber, accommodation and food services, and wholesale and retail, while in Malaysia, they are wholesale and retail, food and beverage, and electrical and electronics. The MSMEs in each value chain have unique risk profile(s), needs and realities (a summary of the risks faced in each value chain is provided in Appendix A). By assessing each value chain, insurers can develop and distribute appropriate solutions. Key insights from this process include:

- Climate risk manifests in all value chains to varying degrees. Climate change often has an indirect impact on MSMEs, and its impact varies in terms of type and intensity. For example, for rubber, climate change affects crop survival; for accommodation and food services, it has an impact on produce and tourist supply as well as properties; and for retail and wholesale, climate change along with natural disasters can manifest in supply chain shortages and business disruption. Risk transfer and risk mitigation solutions will increasingly need to respond to climate risks in their products and offerings. However, for the time being, they will likely not require fundamentally new and climate change-specific solutions (which may also be more difficult to sell); instead, existing solutions will need to be improved (such as weather event insurance and business interruption insurance coupled with digital solutions like flood sensors and early warning systems).

- Recognizing value chain interdependencies is essential for effective risk mitigation. Interdependencies between value chains such as agriculture, manufacturing and retail are often overlooked. Many value chains are interlinked in the economy, and therefore the risks faced by MSMEs in one value chain can threaten the survival of MSMEs in others. For example, when floods impact the natural rubber value chain, this can lead to supply chain disruptions in manufacturing, which could negatively impact those MSMEs as well as those involved in the rubber value chain. Insurers are not currently taking a holistic view of these value chains and how they are connected. Taking a holistic approach has the potential to (1) highlight the most pressing risks that threaten MSME survival across an economic sector; (2) illustrate where there is a need for new solutions (for example, bundling certain insurance products to mitigate risks stemming from other value chains); (3) increase the resilience of multiple MSME value chains; and even (4) shed light on other MSME clusters where commercial value exists, such as the logistics value chain that ties many of these sectors together.

- Digitalization programmes have been prioritized to build MSME resilience. Public sector and private sector actors (such as digital platforms and insurtechs) have focused predominantly on leveraging digitalization to increase MSME productivity, to integrate MSMEs into their local and international markets, and to support MSMEs with cost-cutting solutions. For example, the Tourism Authority of Thailand has launched the Amazing Thailand Brand, which aims to increase Thailand's digital footprint and image as a preferred holiday destination. It has also partnered with international actors, particularly in payments, such as Alipay and WeChat, to align with tourists' preferences and to enable easier communication and more reliable payments between enterprises and tourists (TAT, 2023). While this solution will increase MSME visibility and enhance operations, it cannot mitigate the risk of a decline in tourism in the event of a pandemic, for example. Therefore, digitalization is not a silver bullet, and MSMEs need holistic solutions that allow them to mitigate risk and then address it if it manifests.

- Three types of opportunities for innovative risk solutions emerged. As discussed above, there is a clear gap in the MSME market that insurance providers in Malaysia and Thailand can fill. To do so, they must develop products that resonate with MSMEs by addressing their risks, meeting their needs and leveraging effective distribution methods. Three key avenues for innovations stood out, which are summarized in table 27.

Table 27: Opportunities for risk solutions in Malaysia and Thailand

Type of risk solution	Examples from Malaysia and Thailand
OPPORTUNITY 1: **Bundling insurance**	Traditional insurance is currently not meeting MSME needs. To better cater to MSME needs, different types of insurance could be bundled to address more than one risk, or to more effectively address one type of risk. This could also increase the potential value of insurance for MSMEs which may perceive it as having limited value. For example, bundling property insurance with weather event coverage could effectively enhance resilience against a range of risks associated with climate change (such as floods).
OPPORTUNITY 2: **Combining risk mitigation tools with risk transfer tools**	As discussed, MSMEs may prioritize risk mitigation over risk transfer. To enhance the value of risk transfer, the two could be combined to better meet MSME needs – that is, to better prevent and address a risk as and if it manifests. Examples include coupling early weather warning systems and flood sensors with business crop loss insurance; coupling anti-theft technology and retail insurance; and coupling sensor-based cargo tracking devices with goods-in-transit insurance.
OPPORTUNITY 3: **Leveraging alternative distribution partners**	Current distribution channels (brokers and agents) are not effectively reaching MSMEs. To better reach MSMEs and to approach them through channels to which they might be more receptive, insurers should consider partnering with relevant aggregators within a value chain. This could enhance existing and new risk solution products. For example, insurers could partner with major suppliers in the retail and wholesale value chain to provide goods-in-transit insurance to secure products as they are transported to smaller convenience and mom-and-pop stores.

- Digital platforms are emerging as ideal distribution partners. Many digital platforms already have existing MSME networks into which they can tap in many of the value chains in Malaysia and Thailand, and are increasingly being adopted by MSMEs in key value chains, especially in retail, accommodation and food services as well as in food and beverages. An added benefit is that many of these platforms have a financial relationship with MSMEs, which could be leveraged to withdraw premiums. A key opportunity is supporting the trend towards digitalization and partnering with digital platforms to distribute solutions. For example, insurers could partner with Grab or Uber Eats to provide motor accident insurance.

- Digital platforms are in a good position to develop and distribute their own insurance products. While insurers typically have more experience and industry know-how, digital platforms that serve MSMEs in a particular value chain often have a deeper understanding of MSME business models and risk profiles. This puts them in an ideal position to develop, pilot and even launch their own risk mitigation and transfer products while leveraging their existing network for distribution. Many have already introduced risk mitigation services. For example, the e-commerce platform Lazada partnered with Siam Bank in Thailand to offer digital loans for expansion to SMEs on the platform (Siam Commercial Bank, 2018). These efforts could easily be built on and enhanced to also offer risk transfer solutions. For example, there is ample opportunity for digital platforms like Grab to design and deliver resilience products to their range of clients – from food deliverers and taxi drivers to shop and restaurant owners.[19] Platforms could consider health insurance and/or property damage insurance to cover driver accidents and business interruption cover. They could improve this offering by providing risk mitigation tools, such as advanced driving training or PPE for drivers.

To gain deeper and more targeted insight for product development and distribution, consumer research and primary data collection is urgently needed. Desk research and KIIs have demonstrated that the alternative approach proposed above has significant value for insurers and other operators, by (1) confirming the commercial and developmental business case to develop and serve MSMEs; (2) enabling operators to assess, prioritize and select clusters of MSMEs for/to which to develop/distribute products; and (3) highlighting key broad areas of opportunity on which to act. However, due to limited publicly available data, private and public institutions will need to test their holistic solutions with MSMEs, through (a) consumer research, to ensure they are relevant and in line with MSMEs' risk profiles and needs; and (b) market research to help articulate market segmentation based on a value/sector approach.

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19 Some insurance products are already distributed through digital platforms such as Grab and foodpanda, although currently these are primarily personal accident coverage products for drivers as opposed to insurance for other business owners on the platforms (Wee, 2023; Igloo, 2023a). As well as designing new products, existing solutions could be enhanced, for example complementing personal accident cover with rentable scooters so that drivers can keep operating even if their scooter is damaged.

Enhancing MSME resilience will be a team effort. Actors across Malaysia and Thailand, as well as the region as a whole, will be required to step up their existing efforts to build MSME resilience to ensure that MSMEs reach their full potential and contribute to national strategic objectives such as growth and development. These actors include:

- The public sector (policymakers and regulators). The public sector is primarily responsible for creating an enabling environment for innovation by adopting a flexible and accommodating approach to promote responsible innovation. Key actions for policymakers and regulators include setting the tone for innovation, signalling opportunities to the market, supporting systemic risk management and mitigation and monitoring the risk of new partners and types of actors in the insurance value chain.

- The private sector (insurers, aggregators, etc). Within the space created by the public sector, the private sector needs to provide appropriate, affordable and accessible risk solutions to MSMEs. This will involve better understanding and segmenting MSMEs, developing new solutions and leveraging alternative distribution partners, and taking advantage of trends.

- The development sector (development consultants, donors, etc). Lastly, the development sector is essential for incentivizing and de-risking investment into truly innovative solutions for MSMEs. This could include conducting research to allow private and public sector players to draw on a solid evidence base, enabling collaboration within and between actors, and driving the development of a common innovation agenda directed at increasing the resilience of MSMEs.

10 Appendices

10.1.1. **Appendix A:** Summary of risks faced in each selected value chain

Table 28: Summary of risks faced by each prioritized value chain

VALUE CHAIN	RISK
MALAYSIA	
Wholesale and retail	• Supply chain disruptions (impact of climate risk) • Cash flow and liquidity management • Health risks • Access to finance • Damage to stock
Food and beverage	• Food security (impact of climate risk) • Food soilage • Cash flow and liquidity management • Damage to equipment • Health risks • Access to markets
Electrical and electronics	• Damage to goods • Floods (impact of climate risk) and fires (specifically electrical fires) • Health risks • Cash and liquidity management • Infrastructure, demand volatility and supply chain interruptions
THAILAND	
Natural rubber	• Impact of climate risk • Pests and diseases • Floods (and other climate-related risks) • Disintermediation and price control policies • Health risks
Food and accommodation	• Low predictability and high exposure to adverse events (impact of climate risk) • Access to markets • Food spoilage • Property damage • Health risks
Wholesale and retail	• Supply chain issues/business interruptions (impact of climate risk) • Cash flow and liquidity management • Access to finance • Damage to and loss of stock

10.1.2. **Appendix B:** List of stakeholders interviewed

STAKEHOLDER	STAKEHOLDER TYPE	COUNTRY
Bank Negara Malaysia	Regulator	Malaysia
Generali	Insurer	Malaysia
Generali	Insurer	Thailand
Lonpac	Insurer	Malaysia
SME Corporation Malaysia	Government institution	Malaysia
Igloo	Insurtech	Indonesia, Malaysia, Thailand, the Philippines, Singapore, Viet Nam
Borong	Aggregator	Indonesia, Malaysia, Singapore
Italian Trade Agency	Industry player	Thailand

References

Adyen (2019). GrabPay enabling smoother, safer payments in Southeast Asia, 18 September. Available at https://www.adyen.com/knowledge-hub/grabpay-enabling-smoother-safer-payments-in-southeast-asia.

___________(2022). The Adyen Malaysia Retail Report 2022. Amsterdam. Available at https://adyen.getbynder.com/m/59c5f963684ef781/original/Adyen_Retail_Report_2022_MY.pdf

___________ (2023). The Adyen Malaysia Retail Report 2023. Amsterdam. Available at https://go.adyen.com/rs/222-DNK-376/images/Adyen Retail Report 2—23 — Malaysia.pdf.

Agriac (2023). Empowering farmer-driven sustainability in agriculture. Available at https://www.agriac.com/.

Agridence Rubber (2021). HeveaConnect, Digital Marketplace for Sustainable Natural Rubber welcomes investment from Singapore Exchange, 3 March. Available at https://rubber.agridence.com/heveaconnect-digital-marketplace-for-sustainable-natural-rubber-welcomes-investment-from-singapore-exchange/.

AgroSpectrum Asia (2023). RAOT launches digital platform to strengthen coordination among Thailand's rubber plantations, 2 August. Available at https://agrospectrumasia.com/2023/08/02/raot-launches-digital-platform-to-strengthen-coordination-among-thailands-rubber-plantations.html.

AHA Centre (2022). ASEAN Risk Monitor and Disaster Management Review (ARMOR) 3rd edition. Jakarta. Available at https://ahacentre.org/wp-content/uploads/2022/07/ARMOR-3rd-Ed.pdf.

Ajanapanya, Nongluck (2023). Thailand's digital tourism platform racks up 100,000 businesses in first year. The Nation, 26 October. Available at https://www.nationthailand.com/thailand/tourism/40032260.

APS Fulfillment (2022). What are inventory risks and how to avoid them?, 9 August. Available at https://www.apsfulfillment.com/inventory-management/major-inventory-risks.

Araullo, Kenneth (2023a). Durian and agriculture insurance a focus for Thailand. Insurance Business, 28 March. Available at https://www.insurancebusinessmag.com/asia/news/breaking-news/durian-and-agriculture-insurance-a-focus-for-thailand-440855.aspx.

___________ (2023b). Tokio Marine to offer cheap insurance for gig workers in Malaysia. Insurance Business, 19 April. Available at https://www.insurancebusinessmag.com/asia/news/life-insurance/tokio-marine-to-offer-cheap-insurance-for-gig-workers-in-malaysia-443122.aspx.

ARC Group (2022). Rubber manufacturing in Southeast Asia, an introduction. Part 1: Thailand and Indonesia, 1 June. Available at https://arc-group.com/rubber-manufacturing-thailand-indonesia/.

ASEAN (2022). The ASEAN Magazine, No. 21. Available at https://asean.org/wp-content/uploads/2022/05/The-ASEAN-Magazine-Issue-21-2022-Informal-Economy.pdf.

___________ (2023a). Development of Micro, Small, and Medium Enterprises in ASEAN (MSME). Available at https://asean.org/our-communities/economic-community/resilient-and-inclusive-asean/development-of-micro-small-and-medium-enterprises-in-asean-msme/.

___________ (2023b). Digitalisation of MSMEs in ASEAN and Russia: Trends and opportunities. Jakarta. Available at https://asean.org/wp-content/uploads/2023/07/Digitalization-of-MSMEs-in-ASEAN-and-Russia-Trends-Opportunities.pdf.

___________ (2024). Definitions of MSME in ASEAN Member States. Available at https://asean.org/wp-content/uploads/2023/11/Definition-of-MSME-in-ASEAN-Member-States.pdf.

ASEAN Coordinating Committee on Micro, Small and Medium Enterprises (ACCMSME) (2022). Enhancing the Resilience of MSMEs to Crises and Disasters: Regional Guidelines for ASEAN Governments. Jakarta. Available at https://asean.org/wp-content/uploads/2022/07/Enhancing-the-resilience-of-MSMEs_final_13June2022.pdf.

Asian Development Bank (2021). Asia Small and Medium-Sized Enterprise Monitor 2021: Volume II – How Asia's Small Businesses Survived a Year into the COVID-19 Pandemic: Survey Evidence. Manila. Available at https://www.adb.org/sites/default/files/publication/792336/asia-sme-monitor-volume-2.pdf.

___________ (2022). Asia Small and Medium-Sized Enterprise Monitor 2022: Volume 1: Country and Regional Reviews. Manila. Available at https://data.adb.org/dataset/2022-adb-asia-small-and-medium-sized-enterprise-monitor-volume-1-country-and-regional.

ATA Services (2023). ATA Services website. Available at https://www.ata-services.com/.

Averest (2023). About us. Available at https://www.averest.com.my/about-us.

Azizan, F. A., I. S. Astuti, A. Young and A. Abdul Aziz (2023). Rubber leaf fall phenomenon linked to increased temperature, Agriculture, Ecosystems & Environment, vol. 352 (August). Available at https://www.sciencedirect.com/science/article/abs/pii/

S0167880923001901.

Bangkok Post (2019). Fungal disease damaging southern rubber plantations, 13 November. Available at https://www.bangkokpost.com/business/general/1793424/fungal-disease-damaging-southern-rubber-plantations.

Baskett, Nick (2021). Malaysia's cocoa production and distribution ambition. Bar Talks. Available at https://bartalks.net/malaysias-cocoa-production-and-distribution-ambition/.

Biswas, Rajiv (2022). Thailand's tourism sector drives economic recovery. S&P Global Market Intelligence, 28 March. Available at https://www.spglobal.com/marketintelligence/en/mi/research-analysis/thailands-tourism-sector-drives-economic-recovery-mar23.html.

Borong (2023). About us. Available at https://www.borong.com/about-us.

Bridgestone Thailand (2023). Bridgestone Thailand website. Available at https://www.bridgestone.co.th/en.

BusinessWire (2023). Alipay extends foodpanda partnership to Malaysia where customer can enjoy more convenient food and grocery deliveries by paying through the Touch 'n Go eWallet, 31 January. Available at https://www.businesswire.com/news/home/20230131005758/en/Alipay-extends-foodpanda-partnership-to-Malaysia-where-customers-can-enjoy-more-convenient-food-and-grocery-deliveries-by-paying-through-the-Touch-%E2%80%99n-Go-eWallet.

Campbell, Stefan (2023). How many Grab drivers are there in 2023. Small Business Blog, 1 October. Available at https://thesmallbusinessblog.net/grab-drivers/.

Cenfri (2019). Insurance innovation spotlight: Insurtech in emerging markets. Bellville. Available at https://cenfri.org/wp-content/uploads/FSDA-and-Cenfri-insurtech-infographic.pdf.

__________ (2021). Regulating for innovation toolkit. Bellville. Available at https://cenfri.org/wp-content/uploads/Regulating-for-innovation-toolkit.pdf.

Charoenrat, Teerawat and Charles Harvie (2021). Analysis of the impact of COVID-19 on micro, small and medium-sized enterprises (MSMEs) in Thailand from competition policy and market access perspectives. Geneva: UNCTAD. Available at https://msme-resurgence.unctad.org/sites/smesurge/files/documents/Thai Study–SME - FINAL.1.pdf.

Chua, Samuel. (2022). Taking online shopping to the village. Free Malaysia Today, 19 December. Available at https://www.freemalaysiatoday.com/category/highlight/2022/12/19/taking-online-shopping-to-the-village/.

Condor Ferries (2023). Explore the online travel market, including growth, technology & the future of online travel bookings. Available at https://www.condorferries.co.uk/online-travel-booking-statistics.

CP All (2023). About us. Available at https://www.cpall.co.th/en/about-us.

Daniels, Gary (2023). Gigging in the fast lane – Malaysia's food delivery riders navigate a risky road. The Edge Malaysia, 18 September. Available at https://theedgemalaysia.com/content/advertise/gigging-in-the-fast-lane-malaysias-food-delivery-riders-navigate-a-risky-road.

DHL (2023). How to export electronics products from Malaysia, 21 March. Available at https://www.dhl.com/discover/en-my/logistics-advice/import-export-advice/exporting-electronics-product-from-malaysia.

Du-it (2023). It's your choice. Available at https://du-it.my/index.html.

Durai, Abirami (2021). Floods: F&B operators say damage and losses have been devastating. The Star, 22 December. Available at https://www.thestar.com.my/lifestyle/living/2021/12/22/floods-fb-operators-say-damage-and-losses-have-been-devastating.

Electrical and Electronics Marketplace Malaysia (EEMM) (2023). About us. Available at https://eemm.com.my/about-us.

Eltgen, Maximilian Philip, Yan Liu and Yew Keat Chong (2021). Malaysia – Attracting superstar firms in the electrical and electronics industry through investment promotion. In Christine Zhenwei Qiang, Yan Liu and Victor Steenbergen, eds, An Investment Perspective on Global Value Chains. Washington, D.C.: World Bank. Available at https://thedocs.worldbank.org/en/doc/c9af0143184de77cb58ddd5adf024508-0350012021/related/9781464816833-ch8-1.pdf.

European Bank for Reconstruction and Development (EBRD) (2014). Sub-sectoral environmental and social guideline: Manufacture of rubber products. London. Available at https://www.ebrd.com/downloads/policies/environmental/chemical/rubber-products.pdf.

FinMark Trust (2013). Survey Highlights: FinScope Thailand 2013. Johannesburg. Available at https://finmark.org.za/system/documents/files/000/000/438/original/BKLT_FS_Thailand_2013.pdf?1614937052.

__________ (2014). FinScope Laos. Available at https://finmark.org.za/data-portal/LAO.

__________ (2015). FinScope Cambodia Available at https://finmark.org.za/data-portal/KHM.

__________ (2018). FinScope Myanmar. Available at https://finmark.org.za/data-portal/MMR.

Flanders Investment & Trade (2020). Food and beverage industry report: Malaysia 2020. Kuala Lumpur. Available at https://www.flandersinvestmentandtrade.com/export/sites/trade/files/market_studies/FB Industry Report.pdf.

foodpanda (2023). About foodpanda. Available at https://www.foodpanda.my/contents/about.htm.

Frost & Sullivan (2016). ASEAN Retail: Overview, Trends, and Outlook, with a focus on SGX-listed Companies. Singapore. Available at https://www.iberglobal.com/files/2017/asean_retail.pdf.

Funding Societies (2023a). Challenges for Small Businesses in 2023, 24 March. Available at https://blog.fundingsocieties.com.my/challenges-for-small-businesses-2023.

__________ (2023b). SME Micro-financing. Available at https://fundingsocieties.com.my/sme-micro-financing.

Gesellschaft für Internationale Zusammenarbeit (GIZ) (2016). Promoting Food Security and Safety via Cold Chains. Bonn. Available at https://www.giz.de/en/downloads/giz_2016_Food_Security_Cold_Chains.pdf.

__________ (2019). Thailand gears up to protect its tourism sector from climate change, 4 June. Available at https://www.thai-german-cooperation.info/en_US/thailand-gears-up-to-protect-its-tourism-sector-from-climate-change/.

Ghulam Kadir, Ahmad Parveez (2022). Addressing labour shortage in the oil palm planation sector. New Straits Times, 27 October. Available at https://www.nst.com.my/business/2022/10/844021/addressing-labour-shortage-oil-palm-plantation-sector.

Gimino, Gerard, Rahimy Rahim, Ragananthini Vethasalamthed Teh Athira Yusof (2023). Floods in 2021, 2022 caused RM138.6 mil to agriculture, fisheries, livestock sectors. The Star, 13 June. Available at https://www.thestar.com.my/news/nation/2023/06/13/floods-in-2021-2022-caused-rm1386mil-to-agriculture-fisheries-livestock-sectors.

Global Platform for Sustainable Natural Rubber (2023). Transforming the rubber industry from within. Available at https://sustainablenaturalrubber.org/.

Google, Temasek and Bain & Co. (2021). e-Conomy Report SEA 2021. Singapore. Available at https://www.bain.com/insights/e-conomy-sea-2021/.

Grab (2023). GrabFinance: Easy loans for confident growth. Available at https://www.grab.com/sg/merchant/lending/easy-loans/.

Gray, Jeremy, Michaella Allen, Vera Neugebauer, Nomahlubi Mavikela and Nothando Mtshali (2022). Holistic resilience solutions for Egyptian MSMEs: Focus note. Bellville: Cenfri. Available at https://cenfri.org/wp-content/uploads/MSME-Holistic-Resilience-in-Egypt_FSD-Africa-and-Cenfri_July-2022.pdf.

Gray, Jeremy and Matthew Dunn (2020). Building MSME resilience: A guidebook for GIZ to consider a holistic approach to building MSME resilience in Asia. Bellville: Cenfri. Available at https://cenfri.org/wp-content/uploads/Building-MSME-resilience-A-guidebook-for-GIZ_May-2021.pdf.

Gray, Jeremy and Christine Hougaard (2021). From product provider to trusted risk advisor. Cenfri, 29 March. Available at https://cenfri.org/articles/from-product-provider-to-trusted-risk-advisor/.

GSM Association (2022). Digitalising Rural MSMEs: Thailand's agriculture and tourism sectors. Bangkok. Available at https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2022/06/GSMA_CIU_Thailand-MSME-Digitalisation_Jun2022.pdf.

Hameed, A. Abdel and F. M. Arshad (2014). Future trends of the export demand for selected Malaysian cocoa products. Trends in Applied Sciences Research, vol. 9, No. 1 (March). Available at https://scialert.net/fulltext/?doi=tasr.2014.1.17.

Hassan, Hazlin (2023). Malaysia turns to smart farming to boost food security. Straits Times, 21 March. Available at https://www.straitstimes.com/asia/se-asia/malaysia-turns-to-smart-farming-to-boost-food-security.

HSBC (2023). Malaysia Budget 2024 Summary: MSME Digital Grant MADANI and Other Subsidies, 20 December. Available at https://www.businessgo.hsbc.com/en/article/malaysia-budget-2023-summary-sme-digitalisation-grant-and-other-subsidies.

Igadwah, Lynet (2020). Britam, Twiga to cover traders who fall sick. Business Daily, 16 December. Available at https://www.businessdailyafrica.com/bd/corporate/companies/britam-twiga-to-cover-traders-who-fall-sick-3230182.

Igloo (2023a). PandaCare – Takaful motorcycle coverage. Available at https://iglooinsure.com/campaigns/pandacare/.

__________ (2023b). Weather index insurance. Available at https://iglooinsure.com/products/weather-index-insurance/.

Insurance Information Institute (2023). Background on: buying insurance, 6 April. Available at https://www.iii.org/article/background-on-buying-insurance.

International Association of Insurance Supervisors (2015). Issues Paper on Conduct of Business in Inclusive Insurance. IAIS Issues Papers. Basel. Available at q.

International Labour Organization (ILO) (2011). Hotels and Restaurants. In Encyclopedia of Occupational Health and Safety. Geneva. Available at https://www.iloencyclopaedia.org/part-xvii-65263/hotels-and-restaurants.

__________ (2020). Sector Skills Strategy: Tourism and Hospitality Sector. Geneva. Available at https://www.ilo.org/wcmsp5/groups/public/---ed_emp/---ifp_skills/documents/publication/wcms_754218.pdf.

iptiQ (2023). Welcome to iptiQ. Available at https://www.iptiq.com/.

Islamic Development Bank and UNDP (2022). Effective Solutions for Supporting MSMEs Recovery and Resilience: The Experience of Malaysia. Kuala Lumpur and New York. Available at https://www.isdb.org/sites/default/files/media/documents/2022-08/IsDB_Booklet%20MSMEs.pdf.

Jacob, Kiran (2023). Supply chain: Servicing mom-and-pop shops. The Edge Malaysia, 27 February. Available at https://theedgemalaysia.com/node/656493.

Jenkins, Abby (2022). What is value chain? An expert guide. Oracle NetSuite, 22 December. Available at https://www.netsuite.com/portal/resource/articles/erp/value-chain.shtml.

Kandasamy, Karunajothi, Samuel Lee and Ng Shyue Jer (2018). Understanding financing through the lens of small and medium enterprises (SMEs). In Malaysia, Bank Negara Malaysia, Financial Stability and Payments Report 2018. Kuala Lumpur. Available at https://www.bnm.gov.my/documents/20124/856365/cp02_001_box.pdf.

Koven, Richard, Barbara Magnoni, Emily Zimmerman, Danielle Sobol and Laura Budzuna (2014). Balancing client value and business case in Kenyan health microinsurance. Johannesburg: Microinsurance Centre. Available at https://www.findevgateway.org/sites/default/files/publications/files/balancing_client_value_and_business_case_in_kenyan_health_microinsurance.pdf.

Lazada (2023). Lazada website. Available at https://www.lazada.co.th/.

Lumkam, Puttachard (2022). Industry Outlook 2022-2024: Hotel Business. Krungsri, 28 November. Available at https://www.krungsri.com/en/research/industry/industry-outlook/services/hotels/io/hotel-2022-2024.

Lumkani (2023). Fire protection. Available at https://lumkani.com/fire-protection/.

Malaysia, Bank Negara Malaysia (2022). Financial Stability Review 2nd Half 2021. Kuala Lumpur. Available at https://www.bnm.gov.my/documents/20124/6459002/fsr21h2_en_wb2.pdf.

__________ (2023a). BNM's Fund for SMEs. Available at https://www.bnm.gov.my/funds4sme.

__________ (2023b). Financial Inclusion Framework (2023–2026): Strategy paper. Kuala Lumpur. Available at https://www.bnm.gov.my/documents/20124/55792/SP-2nd-fin-incl-framework.pdf

Malaysia, Department of Statistics (DOSM) (2016a). Economic Census – Food and beverage services. Available at https://newss.statistics.gov.my/newss-portalx/ep/epLogin.seam.

__________ (2016b). Profile of Small and Medium Enterprises. Available at https://newss.statistics.gov.my/newss-portalx/ep/epLogin.seam.

__________ (2019a). Wholesale and Retail Trade Census. Available at https://newss.statistics.gov.my/newss-portalx/ep/epLogin.seam.

__________ (2019b). Interactive Distributive Trade (i-DT). Available at https://v1.dosm.gov.my/v1/index.php?r=column/cthree&menu_id=RGx6eTRqdEtENW00YzNuNWRtM2RxQT09#.

__________ (2020). Usage of ICT & E-commerce by establishment. Available at https://newss.statistics.gov.my/newss-portalx/ep/epLogin.seam.

__________ (2022). Informal Sector and Informal Employment Survey Report, Malaysia 2021. Putrajaya. Available at https://v1.dosm.gov.my/v1/index.php?r=column/cthemeByCat&cat=158&bul_id=NUhQNy9Eb1YxYkxxMVhFU0tIb0dQdz09&menu_id=Tm8zcnRjdVRNWWlpWjRlbmtlaDk1UT09.

__________ (2023a). Annual National Accounts Gross Domestic Product (GDP), 2—15 — 2022. Available at https://newss.statistics.gov.my/newss-portalx/ep/epLogin.seam.

__________ (2023b). Micro, Small & Medium Enterprises (MSMEs) performance 2022, 27 July. Available at https://www.

dosm.gov.my/portal-main/release-content/micro-s—ll—medium-enterprises-msmes-performance-2022.

__________ (2023c). Quarterly Employment Statistics 3rd quarter. Available at https://newss.statistics.gov.my/newss-portalx/ep/epLogin.seam.

__________ (2023d). Malaysia's Exports by SITC 3 Digits. Available at https://www.ekonomi.gov.my/en/socio-economic-statistics/economic-statistics/external-trade.

Malaysia, Department of Occupational Safety and Health (2023). Occupational accidents statistics by sector, January to May 2023. Putrajaya. Available at https://www.dosh.gov.my/index.php/statistic-v/occupational-accident-statistics/occupational-accident-statistic-2023/4450-occupational-accidents-statistics-by-sector-january-to-may-2023-investigated/file.

Malaysia, Economic Planning Unit, Prime Minister's Department (2020). Malaysian Productivity Blueprint: Driving Productivity of the Nation. Putrajaya. Available at https://www.ekonomi.gov.my/sites/default/files/2020-02/MPB_Full_0.pdf.

Malaysia, Malaysian Investment Development Authority (MIDA) (2022). Outlook for the E&E industry in Malaysia. Available at https://www.mida.gov.my/outlook-for-the-ee-industry-in-malaysia/.

__________ (2023). Keeping cool while transporting goods – Cold chain logistics gaining importance in Malaysia. Available at https://www.mida.gov.my/keeping-cool-while-transporting-goods/.

Malaysia, Ministry of Communications and Digital (2023). MyDIGITAL confident to achieve all 58 RTEDM initiatives by year-end, 8 March. Available at https://www.kkd.gov.my/en/public/news/21550-mydigital-confident-to-achieve-all-58-rtedm-initiatives-by-year-end.

Malaysia, Ministry of Finance (2023). Economic Performance and Outlook. In Updates on Economic & Fiscal Outlook and Revenue Estimates 2023. Putrajaya. Available at https://belanjawan.mof.gov.my/pdf/belanjawan2023/economy-fiscal/section1.pdf.

Malaysia, SME Corporation Malaysia (2021). Economic Performance Outlook 2021/22: MSMEs toward Sustainable Recovery. Kuala Lumpur. Available at https://www.smecorp.gov.my/images/Publication/MSME_Insights/ekonomi/Economic%20Performance%20Outlook%202021%20%20-%201%20English%20Full%20Version.pdf.

__________ (2022). MSME performance in 2022. Available at https://www.smecorp.gov.my/index.php/en/policies/2020-02-11-08-01-24/sme-statistics.

__________ (2024) Economic Performance Outlook 2022/23: Reset with New Perspectives. Kuala Lumpur. Available at https://www.smecorp.gov.my/images/Publication/MSME_Insights/2022_23/3Full%20Report.pdf.

Malaysia Semiconductor Industry Association (MSIA) (2022). MSIA 2022 E&E Survey. Penang. Available at https://msia.org.my/folder_upload/pdf_file/e-Booklet_MSIA 2022 E&E Survey.pdf.

Malaysian Palm Oil Certification Council (MPOCC) (2022). Oil palm smallholders in Sabah and Sarawak. Available at https://www.mpocc.org.my/mspo-blogs/oil-palm-smallholders-in-sabah-and-sarawak.

The Malaysian Reserve (2020). Penang hawkers go cashless with Touch 'n go eWallet, 7 January. Available at https://themalaysianreserve.com/2020/01/07/penang-hawkers-go-cashless-with-touch-n-go-ewallet/.

Marappen, Chandrasegaran (n.d.) Retail security and its challenges. Available at http://site.malaysiasecurity.com/Clients/malaysiasecurity/retail security & its challenges by chandrasegaren marappen.pdf.

Michelin (2023). Natural rubber at a glance. Available at https://natural-rubber.michelin.com/natural-rubber-by-michelin/natural-rubber-at-a-glance.

Microinsurance Network (2022). How can digital platforms support the distribution of MSME insurance? Luxembourg. Available at https://www.rfilc.org/wp-content/uploads/2022/05/How-can-digital-platforms-support-the-distribution-of-MSME-insurance.pdf.

Milliman (2023). Thailand in focus: Milliman Thailand general insurance newsletter, August edition. Bangkok. Available at https://www.milliman.com/-/media/milliman/pdfs/2023-articles/8-29-23_thailand-general-insurance-newsletter_july-2023_20230825.ashx.

New Straits Times (2023). Food Market Hub, Supplybunny launch the country's first B2B embedded financing programme, 25 April. Available at https://www.nst.com.my/business/2023/04/902781/food-market-hub-supplybunny-launch%C2%A0-countrys-first-b2b-embedded-financing.

Organisation for Economic Co-operation and Development (2018). SME Policy Index: ASEAN. Available at https://www.oecd-ilibrary.org/development/sme-policy-index-asean-2018/economic-context-and-role-of-smes-in-asean_9789264305328-5-en.

__________ (2020). Formalisation of Micro enterprises in ASEAN. https://asean.org/wp-content/uploads/2012/05/Formalisation-of-Micro-Enterprises-in-ASEAN-POLICY-INSIGHT-2020-final-3.pdf.

__________ (2022). ASEAN SMEs' integration in Global Value Chains (GVCs) Opportunities and challenges in response to COVID-19. Paris. Available at https://www.oecd.org/southeast-asia/ASEAN%20SMEs%20Integration%20in%20GVCs_F.pdf.

Oy Cheng, Phang (2020). Managing Climate Risk in Malaysia – Implications for SMEs. KPMG. Available at https://kpmg.com/my/en/home/insights/2020/06/kpmg-impact/managing-climax-risk-in-malaysia-implications-for-smes.html.

Parks, Thomas (2020). Enduring the Pandemic: Impact of COVID-19 on Tourism MSMEs. Paper presented at the Asia Foundation, 27 October. Available at https://thedocs.worldbank.org/en/doc/697671604027531598-0070022020/render/ParksEnduringthePandemicEndPoverty2020EventOct27FINAL.pdf.

Parsyl (2023). We are Parsyl. Available at https://www.parsyl.com/about.

Pathak, Vivek (2019). Women entrepreneurs key to Thai growth story. Bangkok Post, 16 October. Available at https://www.bangkokpost.com/opinion/opinion/1772999/women-entrepreneurs-key-to-thai-growth-story.

PayPal (2022). Accelerating SME digitalisation in Malaysia. Singapore. Available at https://publicpolicy.paypal-corp.com/sites/default/files/2022-09/paypal-accelerating-digital-readiness-malaysia-infographic-2022.pdf.

Penang Automation Cluster (2023). About Penang Automation Cluster. Available at https://pa-cluster.com/.

Perkins, Dwight (2021). Understanding political influences on Southeast Asia's development experience. Fulbright Review of Economics and Policy, vol. 1, No. 1 (August). Available at https://www.emerald.com/insight/content/doi/10.1108/FREP-03-2021-0021/full/html.

Phoonphongphiphat, Apornrath (2022). Thailand Q2 GDP growth slows to 1.8% despite tourism recovery. NikkeiAsia, 21 August. Available at https://asia.nikkei.com/Economy/Thailand-Q2-GDP-growth-slows-to-1.8-despite-tourism-recovery.

Poapongsakorn, Nipon, Phunjasit Chokesomritpol, and Kamphol Pantakua (2019). Development of Food Value Chains in Thailand. In Eiichi Kusano, ed., Food Value Chain in ASEAN: Case Studies Focusing on Local Producers. ERIA Research Project Report FY2018 No. 5. Jakarta: Economic Research Institute for ASEAN and East Asia. Available at https://www.eria.org/uploads/media/7.RPR_FY2018_05_Chapter_2.pdf.

Poo, Cheryl (2022). Shortage of skilled and TVET talents hampering pandemic recovery. The Edge Malaysia, 3 August. Available at https://theedgemalaysia.com/article/shortage-skilled-and-tvet-talents-hampering-pandemic-recovery.

Powers, Claire and Heather P. Lampel (2015). The rubber manufacturing industry: a case report and review of cutaneous exposure and sequelae. Journal of Occupational Medicine and Toxicology, vol. 10, No. 33 (September). Available at https://occup-med.biomedcentral.com/articles/10.1186/s12995-015-0075-4.

PWC (2023). Revolutionising financial inclusion through digital insurance and takaful. Kuala Lumpur. Available at https://www.pwc.com/my/en/assets/publications/2023/20230416-revolutionising-financial-inclusion-through-digital-insurance-and-takaful.pdf.

Ramendran, Charles (2023). Economy rice no more – Malaysia restaurant owners looking to raise prices amid increasing costs. Asia News Network, 4 September. Available at https://asianews.network/economy-rice-no-more-malaysia-restaurant-owners-looking-to-raise-prices-amid-increasing-costs/.

Reuters (2022). Malaysia floods caused nearly $1.5 billion in losses, government report says, 28 January 2022. Available at https://www.reuters.com/world/asia-pacific/malaysia-floods-caused-nearly-15-bln-losses-govt-report-2022-01-28/.

Rubber World (2023). Thailand approves $218 million to guarantee rubber farmer prices, 3 March. Available at https://rubberworld.com/thailand-approves-218-million-to-guarantee-rubber-farmer-prices/.

Saksorngmuang, Pimpisa, Orawan Kaewboonchoo, Ratchneewan Ross and Plernpit Boonyamalik (2019). Working hazards and health problems among rubber farmers in Thailand. Walailak Journal of Science and Technology, vol. 17, No. 3 (July). Available at https://www.researchgate.net/publication/346685326_Working_Hazards_and_Health_Problems_among_Rubber_Farmers_in_Thailand.

Santhika, Eka (2023). Enhancing Thailand's tourism with digital transformation. Open Gov Asia, 26 April. Available at https://opengovasia.com/enhancing-thailands-tourism-with-digital-transformation.

Sarkar, Alisha Rahaman (2023). Malaysia hawker dies after falling face first into wok of boiling oil. The Independent, 21 September. Available at https://www.independent.co.uk/asia/southeast-asia/malaysia-hawker-falls-oil-death-b2415809.html.

Sdoodee, Sayan and Sopon Rongsawat (2012). Impact of Climate Change on Smallholders' Rubber Production in Songkhla Province, Southern Thailand. Paper presented at the 2012 International and National Conference for the Sustainable Community Development of "Local Community: The Foundation of Development in the ASEAN Economic Community (AEC)". 16–19 February. Available at https://cscd.kku.ac.th/uploads/proceeding/060912_145930.pdf.

Shafie, Norhafiza and Yin Wei Chong (2021). Lessons learnt from Micro, Small, and Medium Enterprises (MSMEs) Day

2021. UNDP Malaysia, Singapore and Brunei Darussalam, 5 August. Available at https://www.undp.org/malaysia/blog/lessons-learnt-micro-small-and-medium-enterprises-msmes-day-2021.

Shahila Aman, Azanis (2021). Shopee helps digitalise over 100,000 micro SMEs, contributing RM1bil to Malaysian economy. New Straits Times, 12 July. Available at https://www.nst.com.my/business/2021/07/707638/shopee-helps-digitalise-over-100000-micro-smes-contributing-rm1bil-malaysian.

Sharp, Neil (2019). The 5 biggest threats to the electronics manufacturing supply chain. ESCATEC, 31 October. Available at https://www.escatec.com/blog/what-are-5-of-the-biggest-threats-to-the-electronics-manufacturing-supply-chain.

Siam Commercial Bank (2018). Online loans to SMEs through AI-powered platform. Available at https://www.scb.co.th/en/about-us/news/jun-2018/nws-lazada.html.

Small and Medium Enterprises Association (SAMENTA) (2023). About. Available at https://samenta.org.my/about/.

SME Magazine Asia (2021). The economy of Malaysia: Middle-income trapped?, 27 May. Available at https://sme.asia/the-economy-of-malaysia-middle-income-trapped/.

Sowcharoensuk, Chaiwat (2022). Industry Outlook 2022-2024: Natural Rubber. Krungsri, 20 September. Available at https://www.Krungsri.com/en/research/industry/industry-outlook/agriculture/rubber/io/rubber-2022.

Standard Bank (2023). Malaysia: Buying and Selling – The distribution network in Malaysia. Available at https://www.tradeclub.standardbank.com/portal/en/market-potential/malaysia/distribution .

Tan, Ming (2022). Realizing the potential of over 71 million MSMEs in Southeast Asia. ADB Southeast Asia Development Solutions, 14 March. Available at https://seads.adb.org/solutions/realizing-potential-over-71-million-msmes-southeast-asia.

Tang, Siew Mun, Hoang Thi Ha, Anuthida Saelaow Qian, Glenn Ong and Pham Thi Phuong Thao (2020). The State of Southeast Asia: 2020. Singapore: ISEAS-Yusof Ishak Institute. Available at https://www.iseas.edu.sg/centres/asean-studies-centre/state-of-southeast-asia-survey/the-state-of-southeast-asia-2020-survey-report-2/.

Tanielian (2018). Sustainability and Competitiveness in Thai Rubber Industries. Available to download: https://core.ac.uk/download/pdf/230364822.pdf.

Tech Wire Asia (2019). Malaysia scales up strategies to help SMEs go digital by 2022, 25 November. Available at https://techwireasia.com/2019/11/malaysia-scales-up-strategies-to-help-smes-go-digital-by-2022/.

__________ (2022). Digital transforming Malaysian Businesses to deliver on consumer expectations . Available at https://techwireasia.com/2022/06/digital-transformation-is-malaysian-businesses-to-deliver-on-consumer-expectations/.

Thai PBS World (2021). Government urged to revive 'Shop Dee Mee Kuen" stimulus in run up to New Year, 10 November. Available at https://www.thaipbsworld.com/government-urged-to-revive-shop-dee-mee-kuen-stimulus-in-run-up-to-new-year/.

__________ (2023). Cabinet approves phase 5 of the "We Travel Together" program, 24 January. Available at https://www.thaipbsworld.com/cabinet-approves-phase-5-of-the-we-travel-together-program/.

Thai Rubber Association (TRA) (2023). Thai Rubber Association website. Available at https://www.thainr.com/en/.

Thailand, Bank of Thailand (2023a). The state of the Thai economy. Bangkok. Available at https://www.bot.or.th/content/dam/bot/documents/en/thai-economy/the-state-of-thai-economy/monthly-2023/slide-en-2023-01.pdf.

__________ (2023b). Business Outlook Report Quarter 1/2023. Bangkok. Available at https://www.bot.or.th/content/dam/bot/documents/en/thai-economy/econ-publication/business-liaison-program/BLP-EN-2023-Q1.pdf.

Thailand, National Statistical Office (THNSO) (2012). Industrial census. Available at https://doc.nso.go.th/en/census/indus/data/Census_full.PDF.

Thailand, Office of the Board of Investment (BOI) (2016). Thailand's rubber industry. Bangkok. Available at https://www.boi.go.th/upload/content/Rubber_5a3b80bcc4882.pdf.

Thailand, Office of the National Economic and Social Development Council (NESDC) (2023). NESDC Economic report: Thai Economic Performance in Q4 and 2022 and Outlook for 2023. Bangkok. Available at https://www.nesdc.go.th/nesdb_en/article_attach/02%20Economic%20Report%202022-Q4.pdf.

Thailand, Office of Small and Medium Enterprise Promotion (OSMEP) (2020). White paper on MSMEs: 2020. Bangkok. Available at https://www.sme.go.th/upload/mod_download/download-20201005123037.pdf.

__________ (2021). White paper on MSMEs: 2021. Bangkok. Available at https://sme.go.th/upload/mod_download/download-20210908115949.pdf.

__________ (2022). White paper on MSMEs: 2022. Bangkok. Available at https://sme.go.th/upload/mod_download/download-20220930104411.pdf.

Thailand, Rubber Authority of Thailand (RAOT) (2023). Daily rubber price of Thailand. Available at https://www.raot.co.th/raot_en/main.php?filename=index.

ThailandCONNEX (2023). Thailand Connex website. Available at https://www.thailandconnex.com/en/home/.

Thaitex (2023). Thaitex website. Available at https://www.thaitex.com/en/home#intro.

TM One (2022). Advancing Malaysia's manufacturing industry with digitalization. Press release, 30 December. Available at https://www.tmone.com.my/press-release/advancing-malaysias-manufacturing-industry-with-digitalisation/.

Tourism Authority of Thailand (TAT) (2023). TAT announces 2024 strategic direction towards high value and sustainability. Press release, 18 July. Available at https://www.tatnews.org/2023/07/tat-announces-2024-strategic-direction-towards-high-value-and-sustainability/.

Tune Protect (2023). Industry. Available at https://sme.tuneprotect.com/industry/.

Tunpaiboon, Narin (2021). Industry Outlook 2021-2023 Modern Trade. Krungsri, 29 January. Available at https://www.krungsri.com/en/research/industry/industry-outlook/wholesale-retail/modern-trade/io/io-modern-trade-21.

UN Comtrade (2021). UN Comtrade Database. Available at https://comtradeplus.un.org/.

UN Women (2023). Multi-country study on women-led MSMEs with a focus on microenterprises in China, Indonesia, Thailand, Rwanda and Uganda. Beijing. Available at https://asiapacific.unwomen.org/sites/default/files/2023-06/cn-MCS-Full-Report-and-Annexes_Jun15.pdf.

UNDP (2020). Mapping the Palm Oil Value Chain. Beijing. Available at https://www.undp.org/sites/g/files/zskgke326/files/migration/cn/Palm_oil_report_EN.pdf.

__________ (2021). The role of public procurement in achieving the SDGs: Regional dialogue. New York. Available at https://www.undp.org/sites/g/files/zskgke326/files/migration/asia_pacific_fairbiz/Public-Procurement-Dialogue-Report.pdf.

__________ (2022). Thailand SDG Investor Map. Available at https://www.undp.org/sites/g/files/zskgke326/files/2022-08/UNDP TH_SDG Investor Map Thailand 2022_ENG.pdf.

__________ (2023a). Country Diagnostic on Inclusive Insurance and Risk Finance for Thailand. Bangkok. Available at https://www.undp.org/thailand/publications/country-diagnostic-inclusive-insurance-and-risk-finance-thailand.

__________ (2023b). Malaysia SDG Investor Map. Putrajaya. Available at https://www.undp.org/malaysia/publications/malaysia-sdg-investor-map-report.

UNDP and Islamic Development Bank (2023). Ecosystem for Effective Solutions for Supporting MSMEs Recovery and Resilience: The Malaysian Experience. New York and Kuala Lumpur. Available at https://www.undp.org/malaysia/publications/ecosystem-effective-solutions-support-msmes-covid-19-recovery-resilience-malaysian-experience.

UNFCCC (2023). Mapping study on capacity-building needs of MSMEs to engage in climate action in the Southeast Asia region. Bangkok. Available at https://unfccc.int/sites/default/files/resource/SME%20report_ASIA.pdf.

Wee, Jared (2023). Grab protects its drivers and delivery-partners with insurance. Malay Mail, 6 November. Available at https://www.malaymail.com/news/life/2023/11/06/grab-protects-its-drivers-and-delivery-partners-with-insurance/100504.

Weerathamrongsak, Pornthep and Winai Wongsurawat (2013). The rubber industry of Thailand: A review of past achievements and future prospects. Journal of Agribusiness in Developing and Emerging Economies, vol. 3, No. 1 (May). Available at https://www.researchgate.net/publication/275314329_The_rubber_industry_of_Thailand_A_review_of_past_achievements_and_future_prospects.

Wongtada, Nittaya and Donyapreuth Krairit (2017). Survival of a market leader in a regional integration of emerging economies: A case study of the tourism industry in Thailand. Journal of the International Academy for Case Studies, vol. 23, No. 2. Available at https://www.abacademies.org/articles/survival-of-a-market-leader-in-a-regional-integration-of-emerging-economies-a-case-study-of-the-tourism-industry-in-thailand-6619.html.

World Bank (n.d.) Small and Medium Enterprises (SME) finance. Available at https://www.worldbank.org/en/topic/smefinance.

__________ (2012). Bancassurance: A Valuable Tool for Developing Insurance in Emerging Markets. Washington, D.C. Available at https://openknowledge.worldbank.org/server/api/core/bitstreams/0b3c7e3b-1f91-55d1-99d9-54aef187bedb/content.

__________ (2016a). "Small is the new big": Malaysian SMEs help energize, drive economy, 5 July. Available at https://www.worldbank.org/en/news/feature/2016/07/05/small-is-the-new-big---malaysian-smes-help-energize-drive-economy.

__________ (2016b). World Bank Enterprise Surveys. Available at https://www.enterprisesurveys.org/en/enterprisesurveys.

__________ (2021a). Climate risk country profile: Malaysia. Washington, D.C. Available at https://www.adb.org/sites/default/files/publication/723571/climate-risk-country-profile-malaysia.pdf.

__________ (2021b). Climate risk country profile: Thailand. Washington, D.C. Available at https://climateknowledgeportal.worldbank.org/sites/default/files/2021-08/15853-WB_Thailand%20Country%20Profile-WEB_0.pdf.

__________ (2022a). Digitalizing SMEs to boost competitiveness. Washington, D.C. Available at https://documents1.worldbank.org/curated/en/099515009292224182/pdf/P17608901a9db608909f5b02980d48c4e28.pdf.

__________ (2022b). Malaysian SME Program Efficiency Review. Washington, D.C. Available at https://documents1.worldbank.org/curated/en/099255003152238688/pdf/P17014606709a70f50856d0799328fb7040.pdf.

__________ (2022c). World Development Indicators. Available at https://databank.worldbank.org/reports.aspx?source=2&series=NV.IND.TOTL.ZS.

__________ (2023). Thailand Economic Monitor June 2023: Building a More Resilient Future: Coping with Droughts and Floods. Washington, D.C. Available at https://www.worldbank.org/en/country/thailand/publication/thailand-economic-monitor-june-2023-coping-with-floods-and-droughts.

World Economic Forum (2023). Data Unleashed: Empowering Small and Medium Enterprises (SMEs) for Innovation and Success. Geneva. Available at https://www3.weforum.org/docs/WEF_Data_Unleashed_Empowering_Small_and_Medium_Enterprises_(SMEs)_for_Innovation_and_Success_2023.pdf.

Yee, Elizabeth (2022). 2 million local sellers drive made-in-Malaysia products: Shopee. Business Today, 16 March. Available at https://www.businesstoday.com.my/2022/03/16/2-million-local-sellers-drive-made-in-malaysia-products-shopee/.

Yee Hoong, Chai (2022). Lower operating costs of cloud kitchens a boon for F&B operators. The Edge Malaysia, 4 April. Available at https://theedgemalaysia.com/article/cover-story-lower-operating-costs-cloud-kitchens-boon-fb-operators.

Yee Mun, Chui (2021). E-commerce: easing the F&B sector into digitalisation. The Edge Malaysia, 19 April. Available at https://theedgemalaysia.com/article/ecommerce-easing-fb-sector-digitalisation.

Yuvejwattana, Suttinee (2021). Pandemic pushes millions of small Thai companies into crisis. Bloomberg, 5 July. Available at https://www.bloomberg.com/news/articles/2021-07-05/pandemic-pushes-millions-of-small-thai-businesses-into-crisis.

Yokohama Rubber Group (2023). Actions in Surat Thani, Southern Thailand. Available at https://www.y-yokohama.com/global/sustainability/rubber/action/.

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