Opportunities and barriers to the access and use of climate information for small and medium enterprises (SMEs) in Uganda and Kenya

SME consultations synthesis report

Red Cross Red Crescent Climate Centre

Climate-KIC is supported by the EIT, a body of the European Union

Climate-KIC

Climate Centre

Global Disaster Preparedness Center

Kenya Red Cross

ICHA International Center for Humanitarian Affairs

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List of abbreviations and acronyms

BCP	business continuity plan
Climate Centre	Red Cross Red Crescent Climate Centre
CRI	climate risk information
DRC	Democratic Republic of the Congo
EAC	East African Community
FGD	focus group discussion
GDPC	Global Disaster Preparedness Center
GDP	Gross Domestic Product
ICRC	International Committee of the Red Cross
KAM	Kenya Association of Manufacturers
KES	Kenyan shillings
KII	key informant interview
km	kilometres
KMD	Kenya Meteorological Department
KNCCI	Kenya National Chamber of Commerce and Industry
KRCS	Kenya Red Cross Society
MSMEs	Micro, Small and Medium Enterprises
SACCOs	Savings and Credit Cooperative Societies
SMEs	Small and Medium Enterprises
UBOS	Uganda Bureau of Statistics
UNMA	Uganda National Meteorological Authority
URCS	Uganda Red Cross Society
UGX	Ugandan shillings
UNFCCC	United Nations Framework Convention on Climate Change

Acknowledgements

We would like to extend our gratitude to the many people and institutions who contributed to this useful study. We wish to thank the consultant, Duncan Okowa, for leading the study and compiling this report. We wish to acknowledge Climate-KIC for funding the project Climate-Ready Enterprises, under which this study was conducted. Climate-KIC is supported by the European Institute of Innovation and Technology – an independent body of the European Union. We also wish to thank Partners for Resilience in Uganda and Kenya for their contributions to this research. Partners for Resilience is funded by the Dutch Ministry of Foreign Affairs. We would also like to say thank you to the Red Cross Red Crescent Climate Centre (Climate Centre), Uganda Red Cross Society (URCS), Kenya Red Cross Society (KRCS) and Global Disaster Preparedness Center (GDPC) for planning and coordinating this study. Special thanks go to the Climate Centre's Julie Arrighi, Urban Manager and ICRC Partnership Lead, who established the framework for the study, guided the development of the survey instruments and provided overall coordination of the study. Special thanks also go to the Climate Centre's Eddie Jjemba, Urban Resilience Advisor, who provided around-the-clock technical support in addition to planning and conducting all the fieldwork. We also wish to thank Laureen Wesonga, Policy and Advocacy Manager at the Kenya Red Cross Society for organizing the fieldwork in Kenya and participating in the SME consultations in Mombasa.

We wish to acknowledge the teams at URCS led by Brian Kanaahe, Community Resilience Manager, and at KRCS led by Idris Ahmed, Executive Director of the International Centre for Humanitarian Affairs, for supporting and creating an enabling environment for the study. We would also like to thank the following branch managers at URCS and KRCS who coordinated the SME consultations and hosted the consultants at their respective branches during the fieldwork: Joshua Ahumuza, Manager, URCS Mbarara branch; Rajab Mohamed, Coordinator, KRCS Mombasa Branch; Alex Mbogo, Coordinator, KRCS Kisumu Branch; Daniel Mutinda, Coordinator, KRCS Nairobi Branch; Emmanuel Okiror, Manager, URCS Katakwi branch; and, Vincent Odoch, Manager, URCS Mbale Branch. In addition, we are indebted to the volunteers at URCS and KRCS, who helped mobilize the SME owners and managers and participated in the consultations. Finally, we owe our gratitude to the SME owners, managers and staff from all the study sites who took part in the surveys and focus group discussions. Their comments, feedback, questions and critiques have greatly enriched this report.

Executive summary

This report highlights the outcomes of a study to assess the opportunities and barriers to the access and use of climate information for urban small and medium enterprises (SMEs) in Uganda and Kenya. While many multinational companies, along with much of the public and financial sectors, increasingly understand the physical risks of climate change, there is much less focus on these risks within SMEs; particularly those in the most vulnerable contexts. Yet SMEs not only play an important role as drivers of job creation and supply chains, they are also instrumental in restoring economic activity at community level following disasters. This makes understanding SMEs' needs regarding their access to, and use of, climate risk information (CRI) in their planning and operations a critical subject that has largely been ignored to date. It is against this background that the Red Cross Red Crescent Climate Centre, in collaboration with the Uganda Red Cross Society, Kenya Red Cross Society and the Global Disaster Preparedness Center commissioned this study, which seeks to assess the opportunities and barriers that SMEs in Kenya and Uganda face in integrating climate risks into their planning and operations.

The study involved quantitative methods, using a structured questionnaire, as well as qualitative methods, including a desktop review, focus group discussions (FGDs) and key informant interviews (KIIs). The study was conducted between July and December 2018 in five urban areas of Uganda – Adjumani, Kampala, Kasese, Katakwi, Mbale and Mbarara, as well as within three cities in Kenya – Kisumu, Mombasa and Nairobi. The study also included consultations with refugees in Adjumani, Uganda. The study targeted micro, small and medium enterprises (MSMEs) in these eight areas. A total of 258 (119 from Uganda and 139 from Kenya) MSMEs, supplying a wide range of goods and services, were surveyed. In addition, FGDs were held in each study site and KIIs were conducted across both countries. The study identified important opportunities to integrate CRI into SME planning and operations. Similarly, it identified critical gaps that must be surmounted for integration to occur.

The general availability of CRI, particularly from the two countries' meteorological agencies, stood out as a major opportunity. Two-thirds of study respondents indicated trust in information provided by their meteorological agencies; although roughly one-third of respondents reported that they did not trust this information.

Another important opportunity identified in the survey is that SMEs are generally aware of, and have many and diverse ideas on how to incorporate, climate information in their planning and operations. This means that with more sensitization, SMEs could easily review, prioritize and focus their actions based on available CRI. A number of challenges may, however, stand in their way. Firstly, businesses do not tend to view managing risks as a primary concern. According to the survey, important risk management strategies, such as

business continuity plans (BCPs), are not widely put into practice. This creates a barrier to CRI integration. Secondly, most SMEs do not have funds set aside for implementing disaster preparedness actions. This is exacerbated by the fact that many SMEs do not think that such investments contribute to their businesses' bottom lines, especially in the short term. Thirdly, while credit and insurance can be used to fill such financial gaps, about 40 per cent of respondents do not have insurance and roughly 50 per cent rely on credit.

Another important opportunity identified in the study is that an overwhelming majority of SMEs are aware of climate change and its diverse range of impacts on businesses. Such knowledge could be used to enhance SMEs' appreciation of CRI and its role in reducing the intensity and frequency of climate-change related impacts. The top challenges against climate change adaptation measures reported by SMEs included: a view that businesses would not be impacted by climate change; an absence of financial resources to adapt to climate risks; a lack of knowledge about which actions to take; and a belief that climate change is an act of God, hence there is nothing businesses can do about it. Lack of adequate data – particularly those quantifying losses to SMEs from climate-change related disasters – was also identified as a key challenge. In the absence of data, SMEs may not sufficiently appreciate the need for disaster preparedness and, therefore, may not take integration of CRI seriously.

The study also revealed a number of partnership and training opportunities for SMEs in connection with improved access to, and use of, CRI. These include the positive reception of BCPs by potential partners; existing work by some partners to promote BCPs to the SMEs they work with; and, a number of training opportunities (by business associations, micro-finance and banks) that could be adapted to fill some of the capacity gaps identified in this study.

Based on analysis of the survey results and outcomes of the field consultations, some possible steps for SMEs and their partners include:

- Partnering with business alliances to develop outreach and trainings materials for managing climate risk at low costs.

- Planning for business continuity to minimize climate-related disaster losses and speed recovery – 58 per cent of survey respondents indicated they do not have a BCP.

- Partnering with financial institutions to document the value of business continuity planning that is climate-smart and developing incentive schemes such as discounted loans – 48 per cent of respondents indicated that they had taken out a loan.

- Generally promoting insurance against climate impacts and partnering with insurance companies to incorporate the forecast-based financing model into preparedness – 39 per cent of respondents indicated they do not have insurance cover.

- Developing strategies to mitigate risks to, or fluctuations in, the transportation of goods, the price and supply or price of raw materials, and customer preferences.

1. Introduction

Physical climate risks – especially extreme events such as floods, droughts, rising sea levels, coastal erosion and heat waves – pose a significant threat to business the world over. The immediate effects of physical climate risks are already threatening the viability of existing business practices in sectors such as agriculture, construction, finance, infrastructure, insurance, manufacturing and trade. In the agriculture sector, for instance, there are widespread concerns that physical climate risks threaten the supply of key commodities such as cocoa, grain, fish and tea. And in the insurance industry, claims related to the impacts of climate extremes – such as the damage caused by storms, and fires resulting from heat waves – are on the rise. While physical climate risks affect businesses globally, these effects tend to be more profound in the world's most vulnerable regions.

Within major multinational companies and the public and financial sectors, there is increasing focus on understanding physical climate risks. However, these discussions often lack tangible connections to Small and Medium Enterprises (SMEs), particularly those in the most vulnerable contexts. SMEs play a critical role not only within their communities but also within global markets. They are the main drivers of job creation, supply chains, innovation, diversity and economic growth. In Africa, SMEs contribute more than 50 per cent of Gross Domestic Product (GDP) and, on average, 60 per cent of employment (Muriithi, 2017). They are particularly vital in sub-Saharan Africa because of the crucial role they play in reducing poverty, boosting countries' GDP and providing employment. SMEs are instrumental in restoring economic activity at the community level following disasters. The faster the business community recovers from a disaster, the faster the wider community will recover. This makes understanding SMEs' needs regarding their access to, and use of, climate risk information (CRI) in planning and operations a critical subject, but it is one that has largely been ignored to date.

It is against this background that the Red Cross Red Crescent Climate Centre (Climate Centre), in collaboration with the Uganda Red Cross Society (URCS), the International Center for Humanitarian Affairs and the Global Disaster Preparedness Center (GDPC), recently secured a grant from Climate-KIC to implement the Climate-Ready Enterprises project. Among other aims, the project sought to assess the opportunities and barriers that SMEs in Kenya and Uganda face in integrating climate risk information (CRI) into their planning and operations. In particular, it focused on the access to, and use of, climate information by SMEs to enhance their planning and adaptation to climate risks. The study involved focus group discussions (FGDs), surveys and key informant interviews (KIIs) across eight urban areas in Uganda and Kenya, as well as a literature review of SMEs and climate risks. This report summarizes the outcomes of this study. It highlights SMEs' understanding of climate risks; opportunities and barriers to increasing the integration of CRI in SME operations; and possible solutions to overcome key barriers.

2. Study methodology

2.1. Design

The study involved both quantitative and qualitative methods. The quantitative component involved structured surveys completed using the Kobo Collect mobile platform. It focused on SMEs' perceptions and practices regarding the integration of CRI in planning and operations, as well as the opportunities and barriers to integration. The qualitative component involved both desk and field research. Desktop research involved a review of relevant documents on the use of climate information by SMEs. Field research involved FGDs with SME owners and managers as well as KIIs with relevant corporate players, including insurance and financial institutions.

2.2. Site selection

The study was conducted in six urban areas in Uganda and three major cities in Kenya. In Uganda, the study focused on Adjumani, Kampala, Kasese, Katakwi, Mbale, and Mbarara. These areas range from small towns to the economic and political capital of the country. In Kenya, the assessment was conducted in Kisumu, Mombasa and Nairobi. These urban areas are home to a wide variety of SMEs, which provided useful data and lessons for the study. In addition, an FGD was held in a rural refugee community in Adjumani, Uganda. In Kasese, KIIs focused on the disaster preparedness of SMEs and an FGD was not conducted. The assessment in all other locations included FGDs and quantitative surveys, as well as KIIs in Nairobi and Kampala.

Below are detailed descriptions of the study sites:

- Kampala: Situated along the shores of Lake Victoria, Kampala is the largest urban area in Uganda and is the country's political and economic centre. The city has a population of about 1.75 million residents, and an estimated daily work force of 4.5 million. The annual demographic growth rate stands at 3.9 per cent. Kampala contributes approximately 60 per cent of Uganda's GDP and accounts for 80 per cent of the country's industrial sector. The city has a vibrant urban informal sector, which is by far the most important employer in Uganda. It is estimated that over 55 per cent of Uganda's 1.5 million micro enterprises are located in Kampala. (Kampala City Authority, 2014).

- Kasese: This District is located in western Uganda where it shares a border with the Democratic Republic of the Congo (DRC). The District has a population of 702,029 people and includes four conservation areas, including the Rwenzori Mountains. Kasese town is the capital of Kasese District and has a population of just over

100,000 people (2014). Another key town in Kasese District is Mpondwe, which is the largest cross-border trading point between Uganda and the DRC.

- Katakwi: This is a town located in the north-eastern region of Uganda, approximately 338 kilometres (km) north-east of Kampala. It is the headquarters and commercial centre of Katakwi District. As of 2011, the town had an estimated population of 8,400 people according to Uganda Bureau of Statistics (UBOS, 2010). The town is home to the busy Ochorimongin weekly market. The Soroti–Katakwi–Moroto–Lokitanyala Road passes through the middle of town and serves most of the town's transport needs. The main economic activities in and around the town are subsistence agriculture and livestock keeping. Popular crops grown in the area include cassava, groundnuts, millet and sorghum. The town also has a thriving timber business.

- Mbale: This Municipality is situated in the eastern region of Uganda and is approximately 245 km from Kampala. The Municipality has approximately 104,000 residents, based on the a national growth rate of 3 per cent, as defined by the Uganda Bureau of Statistics (The Republic of Uganda, 2017). Approximately 63 per cent of those of working age (16–64) are employed in both the formal and informal sectors (The Republic of Uganda, 2017). The Municipality has a thriving industrial sector focused on processing commercial and agricultural products, light engineering works, warehousing and tourism.

- Mbarara: This is the largest town in western Uganda and is the political, administrative and commercial capital of Mbarara District. It is located about 266 km west of Kampala and is a transit town between Rwanda and Uganda. The town's population stood at 219,832 in 2018, based on 2014 population projections by the Uganda Bureau of Statistics (The Republic of Uganda, 2017). Employment income constitutes the majority of residents' livelihoods at about 54 per cent, followed by business, farming and tourism activities (UN-Habitat, 2012).

- Nairobi: In 2018, Kenya's capital city had a population projection of 4,941,708, based on the 2009 Kenya Population and Housing Census (Nairobi City County, 2018). In terms of infrastructure, the city hosts three airports – Jomo Kenyatta International Airport, Wilson Airport and Eastleigh Airport. The city provides the largest share of formal sector employment in Kenya with a total of 453,000 people employed in the manufacturing, trade and hospitality industries. The county government recognizes micro, small and medium enterprises (MSMEs), mainly in the informal sector, as the employers of a large proportion of the city's labour force. This accounts for around 1,548,100 people who are largely self employed. The city is a major trading centre for both national and international communities. As of November 2017, the city had 32,129 registered businesses, comprising retail traders, supermarkets, wholesale traders, hawkers, hotels, petrol stations, liquor outlets and informal enterprises (Nairobi City County, 2018).

- Mombasa: Located in the south-eastern part of the coastal region of the country, Mombasa is the second largest city in Kenya. The city borders the Exclusive Economic Zone of the Indian Ocean to the east and is a major port city and gateway for the East-Central Africa region. The city's population is estimated to be 1,247,157 in 2018. The city has a very high population growth rate due to increasing numbers of people seeking employment in its diverse sectors.

- Kisumu: This is the third largest city in Kenya after Nairobi and Mombasa. Kisumu is a key commercial, trading, industrial, communication and administrative centre in the Lake Region Economic Bloc that comprises six counties in western Kenya that are located around Lake Victoria. According to Kisumu County's first Integrated Development Plan (The County Government of Kisumu, 2013), the city also aims to become a business hub and capital of the East African Community (EAC) owing to its central location among the EAC states. The city's population was projected to be 491,893 in 2017.

- Adjumani: This town is located in north-west Uganda. It has a population of 225,251 (in 2014) including 211,749 refugees and asylum seekers from South Sudan (as of 2017). Close to half of the population is involved in farming, retail business and casual labour, while the other half depends on humanitarian assistance.

2.3. Sampling

The study targeted SMEs from across Kenya and Uganda, inviting them to share their understanding, perceptions and strategies regarding access to, and use of, climate information in business planning and operations. respondents were drawn from owners, managers and senior staff of the SMEs, each knowledgeable in their business' planning and operations. The study sites were identified through purposive sampling (i.e. chosen by the judgement of the study team), after which SMEs were randomly selected using a multi-level criterion based on geographical diversity across each of the selected towns. The sample sizes are representative of the average numbers of SMEs in the respective surveyed towns.

2.4. Data collection

Four methods – a survey, FGDs, KIIs and a desktop literature review – were used in this study:

- FGDs with SME owners, managers and senior staff were conducted in each of the study sites between November and December 2018. Using open-ended questions, a moderator guided the process to ensure open interaction and active participation by all group members. The questions gauged how past hazards had impacted participants' businesses with regard to capital, logistics, raw materials, labour and customers. Other questions explored whether participants received climate information and, if so, how they used it, including whether they would invest money in reducing disaster impacts based on climate information.

- A survey was conducted among owners, managers and senior staff of SMEs in all the study sites, except Kasese and Adjumani. The survey questionnaire was administered using the Kobo Collect mobile data collection tool. The survey gauged awareness and knowledge of climate change, the impacts of climate change-related disasters on businesses, and climate change adaptation strategies as well as respondents' experiences in accessing and using climate information. A total of 258 respondents were surveyed between November and December 2018. The survey was administered by Climate Centre staff member and a consultant, they were, assisted by local teams of enumerators. The enumerators received training before the survey was conducted.

- Semi-structured KIIs were held with officials from banks, microfinance, and savings and credit co-operative societies (SACCOs), insurance companies and business associations. These interviews took place in the capital cities of Kampala and Nairobi as well as in Kasese, Uganda.

- A desktop review of relevant documents was carried out to understand the realized and potential use of climate information by SMEs.

2.5. Data analysis, interpretation and presentation

Depending on the type of data, both qualitative and quantitative data analysis techniques were used.

3. Conceptualizing SMEs and climate risks in vulnerable contexts

3.1. Key concepts

3.1.1. Climate change

Weather is the state of the atmosphere describing, for example, the degree to which it is hot or cold, wet or dry, calm or stormy, clear or cloudy in a period of several hours up to a few days. Climate, on the other hand, refers to the average weather conditions prevailing in a place as observed over at least three decades. For instance, a place might be mostly warm and dry during certain seasons of the year, and cool and wet at other times of the year. Climate change refers to a change in climate of a place persisting for an extended period. This could be a change in how much rain usually falls in a year, or a change in the usual temperature for a month or season. The United Nations Framework Convention on Climate Change (UNFCCC) defines climate change as "a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods" (UNFCCC, 1994).

3.1.2. Physical climate risks

Scientific evidence shows that the physical trends described above are expected to continue into the future. These physical changes are projected to intensify in many parts of the world, and to result in diverse and severe impacts to millions of people (UNFCCC, 2008). These impacts – also referred to as physical climate risks – are projected to affect water, ecosystems, food systems, coastal areas and health. The impacts of physical climate risks vary by the extent of adaptation, rate of temperature change and the socio-economic pathway (IPCC, 2007). As a result, developing countries are more vulnerable to physical climate risks owing to their low adaptive capacity, geographical location and high dependence on agriculture and other natural resource-based livelihoods (Dasgupta, et al., 2014). In Africa, climate risks are projected to severely disrupt water and food systems, public health and agricultural livelihoods. According to IPCC (2007), by the year 2020, between 75 and 250 million people in Africa will be exposed to increased water stress due to climate change. In some African countries, the projections indicate that yields from rain-fed agriculture could be reduced by up to 50 per cent. The IPCC also projects that by the end of the 21st century, sea level rise will affect low lying coastal areas of Africa, particularly those with large populations.

3.1.3. Climate risk information

Climate information is science-based climate projections that assist decision-making to enable people to adapt to climate variability and climate change. Such information includes seasonal forecasts, past trends, projected future change and warnings of extreme weather events.

3.1.4. Small and Medium Enterprises

There is no common accepted definition of SMEs. Different sectors in different parts of the world have different criteria for defining them. The definition of SMEs also varies by country, depending on its geographic location and the size and scope of its economy. Nonetheless, the criteria typically include the number of employees, total number of assets, annual turnover and capital investments (Gibson & H. J. van der Vaart, 2008), (Muriithi, 2017). This study restricts itself to the definitions of SMEs used in east Africa and, more specifically, the formal definitions adopted in the two study countries – Uganda and Kenya.

Uganda classifies SMEs as micro, small and medium enterprises (MSMEs). According to the Uganda Micro, Small and Medium Enterprise Sector Policy (The republic of Uganda, 2015), the definition of MSMEs includes all types of enterprises (formal and informal) whether they are family enterprises, sole proprietorships or cooperatives. The categorization of enterprises in Uganda is based on the fulfilment of any two of three criteria – number of employees, capital investment and annual sales turnover. Accordingly, 'micro enterprises' in Uganda are businesses employing no more than five people with total assets not exceeding 10 million Ugandan shillings (UGX) (2,700 US dollars); 'small enterprises' are businesses employing between 5 and 49 people with total assets above UGX 10 million but not exceeding UGX 100 million (27,000 US dollars); and 'medium enterprises' are businesses employing between 50 and 100 people with total assets above UGX 100 million but not exceeding UGX 360 million (97,000 US dollars) (Uganda Investment Authority, 2018).

In Kenya, the definition of micro and small enterprises is found in the Micro and Small Enterprises Act 2012 (Republic of Kenya, 2012). Like Uganda, Kenya uses the three criteria – number of employees, capital investment and annual sales turnover – as the basis for categorizing SMEs. But, in Kenya, enterprises must meet all three criteria. The country has also set higher thresholds for the number of employees, annual turnover and total assets for all types of enterprises, formal and informal. In Kenya, a 'micro enterprise' is defined as any firm, trade, service, industry or business activity employing between one and nine people that has an annual turnover not exceeding 500,000 Kenyan shillings (KES) (4,860 US dollars). In addition, micro enterprises in the manufacturing sector should not exceed KES 10 million (97,213 US dollars) in total assets and financial investment or registered capital. In the service and farming sectors, this figure is set at KES 5 million (48,606 US dollars). A 'small enterprise' is defined as any firm, trade, service, industry or business activity that posts an annual turnover of KES 500,000 to KES 5 million (48,606 US dollars) and has 10 to 50 people on its list of employees. In addition, investment in plant and machinery by small enterprises in the manufacturing sector should be between KES 10 million and KES 50 million (486,056 US dollars), while the registered capital of the enterprises in the service and farming sectors should be between KES 5 million and KES 25 million (243,028 USD) (Republic of Kenya, 2012). Finally, a 'medium enterprise' is defined as a

business with 51 to 100 employees and a capital investment of no more than KES 30 million (291,639USD) (UNDP, 2015). According to a 2016 survey, there were about 1.56 million licensed and 5.85 million unlicensed MSMEs in Kenya, both in the formal and informal sectors (Kenya National Bureau of Statistics, 2016).

Regardless of how they are defined or which part of the world they are in, SMEs play a critical role not only within their communities but also within global markets. They are the main drivers of job creation, supply chains, innovation, diversity and economic growth. According to Fjose et al (2010), 99 per cent of all firms in developing countries are SMEs. In Africa, SMEs not only contribute more than 50 per cent of GDP and an average of 60 per cent of employment, they also offer affordable goods and services (Muriithi, 2017). In sub-Saharan Africa, SMEs account for more than 95 per cent of all businesses and are particularly critical given their role in reducing poverty, boosting countries' GDP and providing employment. In Uganda, SMEs are spread across all sectors with 49 per cent in service sector, 33 per cent in commerce and trade, 10 per cent in manufacturing and 8 per cent in others. Over 2.5 million Ugandans are employed by SMEs, accounting for approximately 90 per cent of the country's employment and contributing 18 per cent of the country's GDP (The republic of Uganda, 2015). In Kenya, SMEs account for 40 to 45 per cent of GDP and 80 per cent of employment (Muriithi, 2017).

3.2. MSMEs and disasters in vulnerable contexts

Until roughly a decade ago, the impact of disasters on MSMEs was a largely unexplored area within disaster risk. A 2013 study by the United Nations Development programme for instance, explores the role of MSMEs in community disaster recovery and the vulnerability of MSMEs themselves to disasters (UNDP, 2013). According to the report, MSMEs are critical to the recovery of their communities from disasters as they help to restore both the economic and social fabric through the provision of employment, goods and services. Furthermore, by reopening after disasters, MSMEs often provide spaces for social bonding, and can motivate displaced populations to return home, as well as attract new investment to recovering areas. At the national level, the MSME sector is key to building resilience to disaster shocks by broadening and diversifying domestic economies. The sector also reduces the dependency on a few large firms or specific sectors, thus protecting a broad base of the labour force from sector-specific shocks and fluctuations in international markets.

Despite their important role in disaster recovery at community level, MSMEs are themselves vulnerable to disasters. In fact, MSMEs are more vulnerable to disasters than larger firms, owing to their relatively limited range of risk management abilities. For instance, MSMEs tend to have more limited access to insurance services and financial and political capital to implement disaster recovery programmes than larger enterprises. They also generally have less access to better contingency locations, capital and plans to ensure business continuity during and/or after disasters. As a result, without adequate coping strategies, the majority of MSMEs are worse off after disasters as a result of loss of assets, supplies, customers and staff (UNDP, 2013).

While the vulnerability of MSMEs to disasters is pervasive in many parts of the world, they are particularly vulnerable in developing countries. This is largely

because the majority of MSMEs in developing countries are informal. This informality keeps MSMEs out of the reach of government disaster risk management programmes and related strategies, such as insurance. Informality also constrains MSMEs' access to a more diverse supply and customer base. The majority of the informal MSMEs also lack social protection for their employees (UNDP, 2013).

Peter Musomba runs a warehouse in Kampala, Uganda. He is has been trained by the Uganda Red Cross Society in business preparedness concepts.

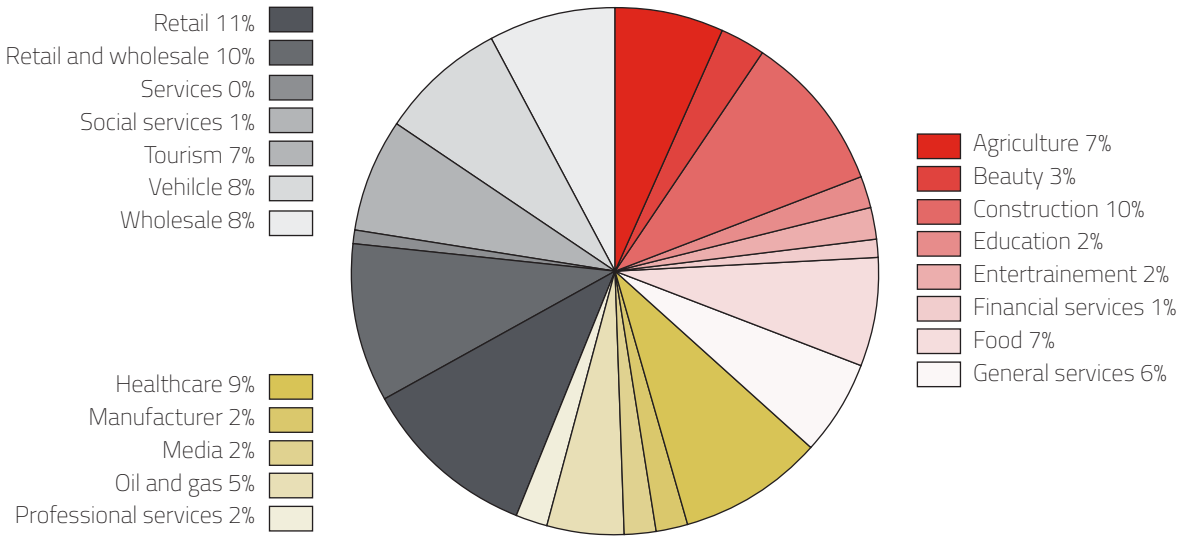
4. Opportunities and barriers to the access and use of climate information for business planning and operations: reflections from the SME consultations

4.1. Descriptive statistics of survey respondents

4.1.1. General SME characteristics

A total of 258 MSMEs dealing in a wide range of goods and services were surveyed. The pie chart below shows the numbers and proportions of the different types of business surveyed.

Chart 1: Types of business surveyed

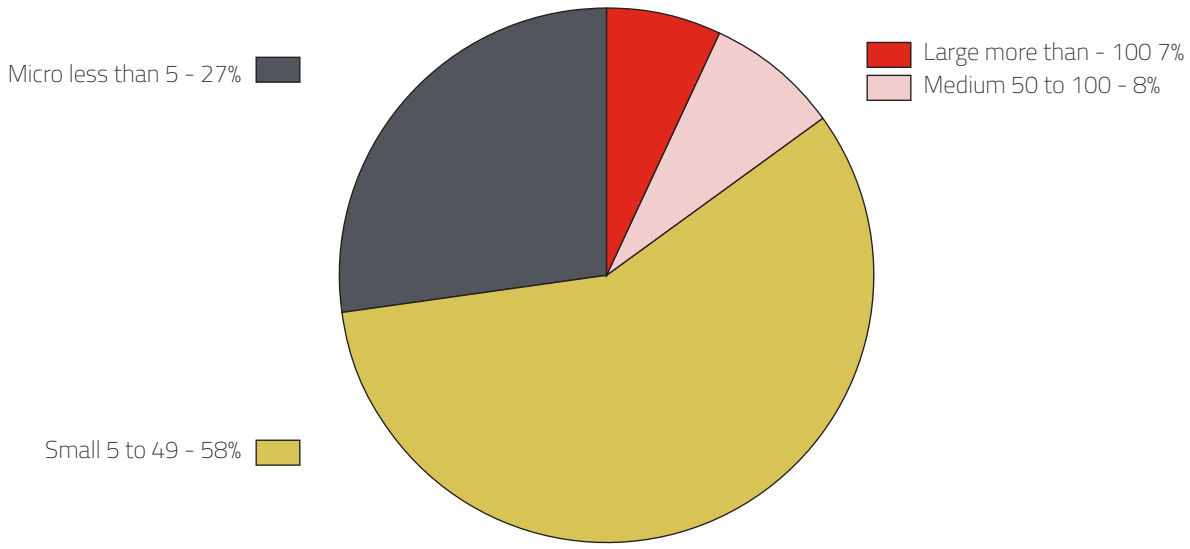


These comprised 119 businesses in Uganda and 139 in Kenya. About 59 per cent of these were small businesses employing 5 to 49 people, while about 27 per cent employed fewer than five people. About 8 per cent were medium enterprises employing 50 to 100 people, with the remaining 6 per cent comprising large enterprises with 100 or more employees. A breakdown of the SMEs surveyed by country, town and firm size is shown in Table 1.

Table 1: Breakdown of the number of SMEs surveyed by country, town and firm size

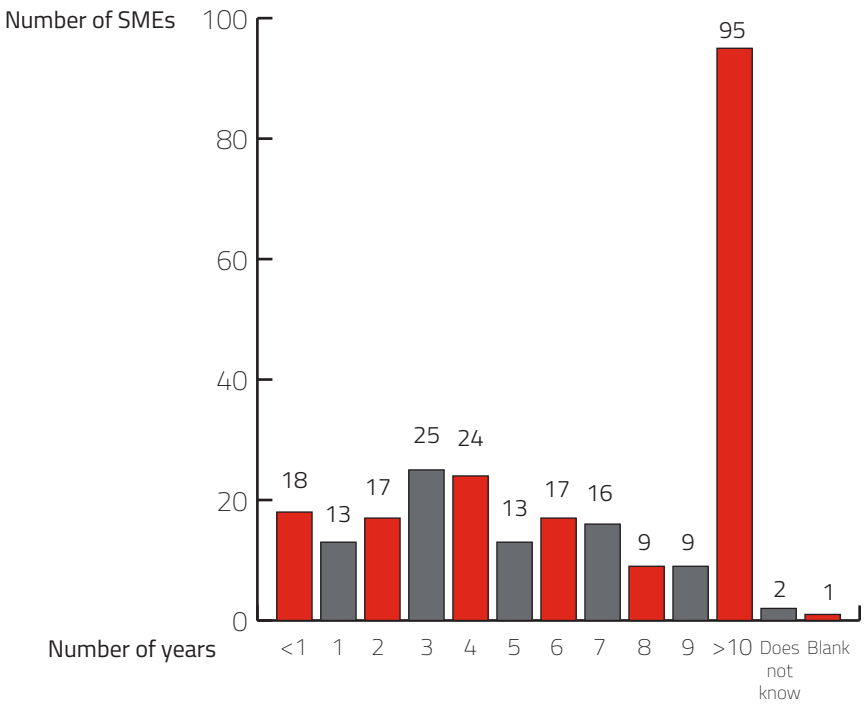
Town and Country	Number of surveyed SMEs by size (no. of employees)				
	Micro	Small	Medium	Large	Total
Uganda (Total 119)					
Kampala	1	27	2	1	31
Katakwi	10	5	0	0	15
Mbale	8	15	4	3	30
Mbarara	10	25	5	3	43
Kenya (Total 139)					
Kisumu	2	15	2	1	20
Mombasa	22	25	6	6	59
Nairobi	16	39	2	3	60
Total	69	151	21	17	258

Chart 2: Size of SMEs by staff



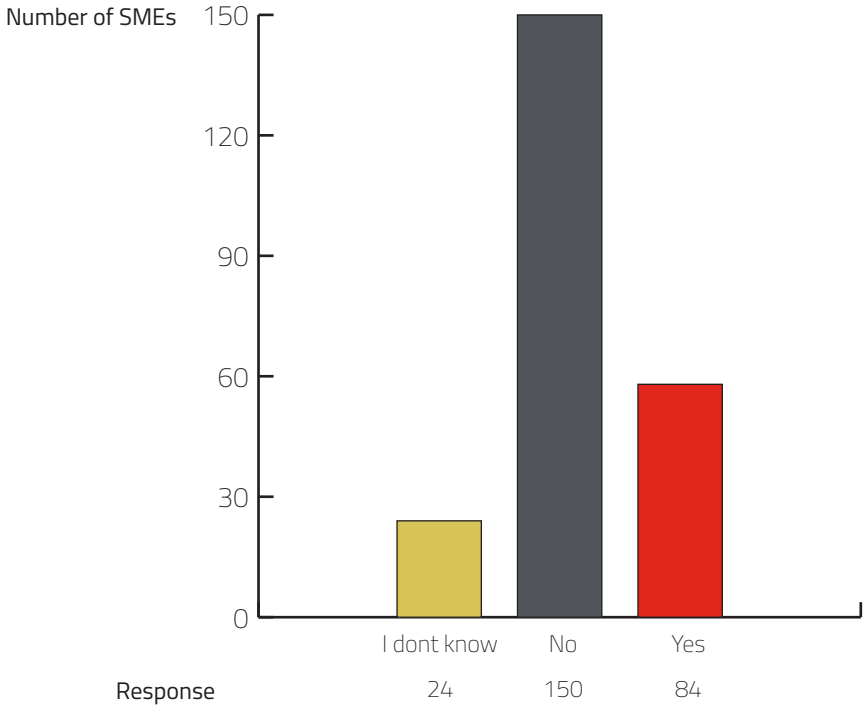
Eighteen of the surveyed businesses had been in operation for less than one year, while about 12 per cent had been in operation for two years or less. Close to half of the survey total – 111 businesses – had been in operation for six years or less, while 95 businesses (37 per cent) had been in existence for ten years or more.

Chart 3: Number of SMEs by years since inception



Asked whether their businesses had written business continuity plans (BCPs), only 33 per cent of respondents affirmed that they had, while over 58 per cent said their businesses did not have written BCPs. About 9 per cent of respondents were unsure whether the business they were involved in had a BCP or not. Most of the businesses with BCPs were from Nairobi, Mbarara and Mombasa, while businesses in Katakwi and Kisumu had the least BCPs. We, however, could not establish any statistical reasons for this variance.

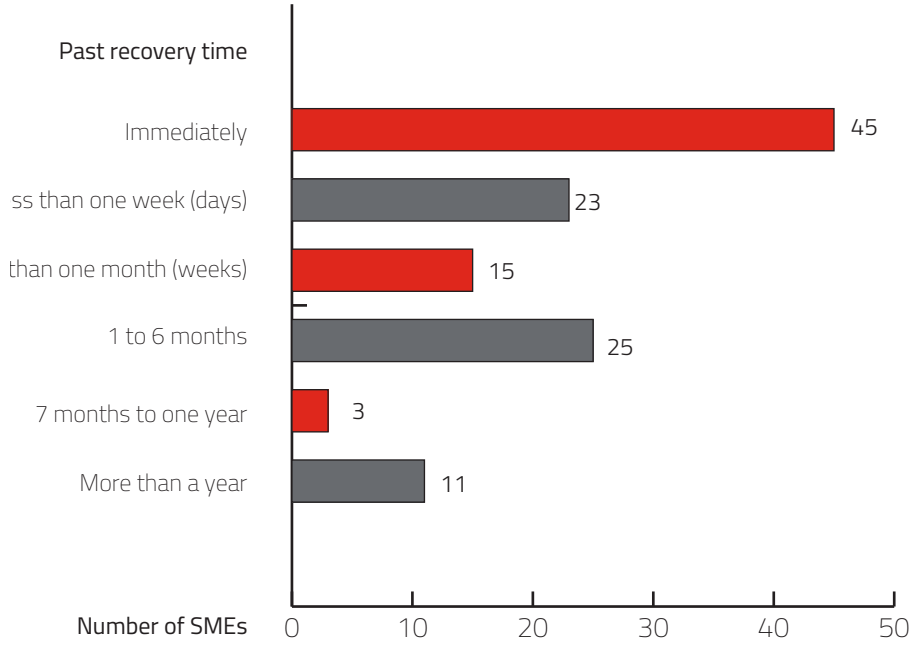
Chart 4: Business continuity plans by number of businesses



4.1.2. SMEs' disaster experiences and perceptions

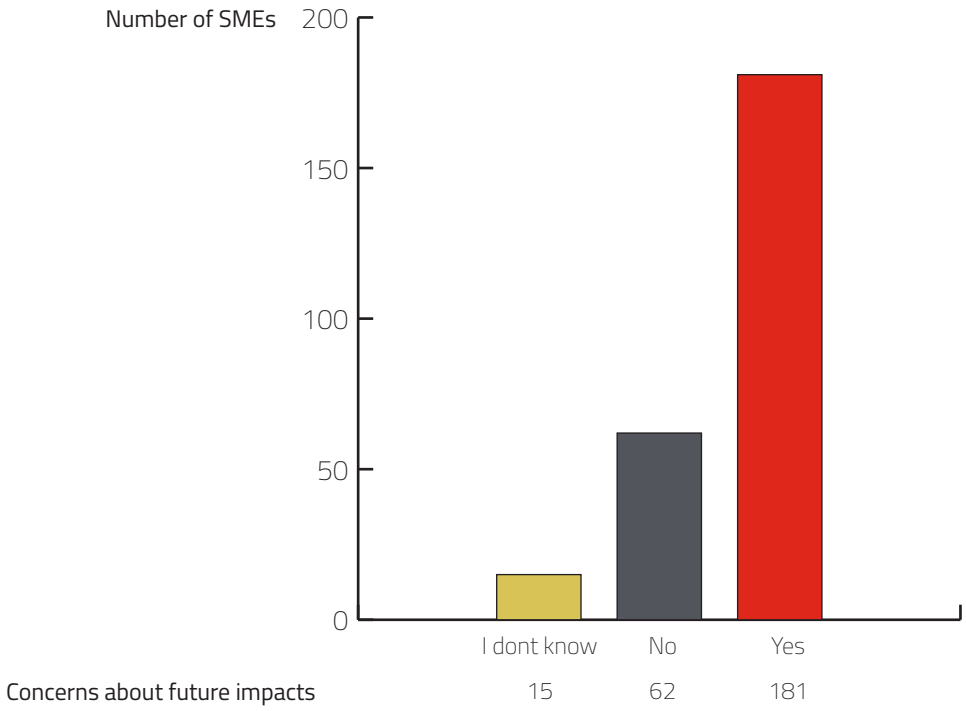
Of the 258 businesses surveyed, 122 reported that their business had been affected by a disaster at least once since its inception, while 134 had no disaster experience at all. Theft was the most cited disaster experienced by the respondents (13), followed by floods (11), fires (7), droughts (4) and political instability (4). Political instability and riots were the most cited combined disasters experienced by the respondents (8), followed by droughts and floods (5). Of the 122 people with past experience of disasters, 45 (37 per cent) reported that they recovered from the disasters immediately, while 23 (19 per cent) reported that it took them days (less than a week) to recover. For 15 respondents (12 per cent) recovery from the disasters took weeks (less than one month); while for 25 respondents (20 per cent) it took one to six months to recover. For 3 respondents (around 2 per cent) it took seven months to one year to recover; while 11 respondents (9 per cent) took more than one year to recover.

Chart 5: Time taken for SMEs to recover from previous disasters



Asked whether they were concerned about their businesses being impacted by disasters in the future, 181 respondents (more than 70 per cent) said that they were concerned. It is interesting to note that more respondents were concerned about future disasters than had past disaster experience. Sixty-two respondents (24 per cent) said they were not concerned, while 15 respondents (6 per cent) were not sure. Floods, fires, droughts, political instability, riots and theft were the most cited possible future disasters by respondents. 64 (35 per cent) of the 181 respondents who were concerned about future disasters cited either one, or a combination of two or more, of these disasters. Floods and fires topped the list of disasters cited individually by the respondents at 12 and 10 respondents respectively, followed by droughts and political instability with 6 and 5 respondents respectively. Twelve respondents cited a combination of fire and theft; and 6 respondents cited a combination of political instability and riots. A further 5 respondents cited a combination of fires, riots and theft; 4 respondents cited a combination of fires and floods; and another 4 cited a combination of droughts and floods.

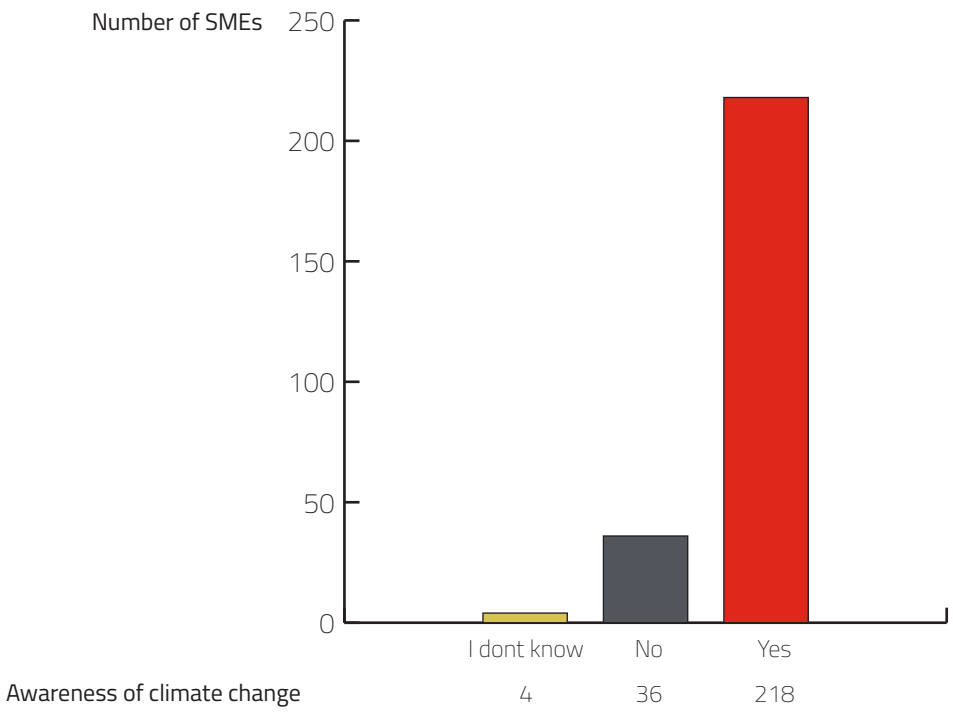
Chart 6: SMEs concern about future disasters



4.1.3. SMEs' understanding and perceptions of climate change

Most of the SMEs surveyed were aware of climate change. More than 84 per cent (218 respondents) said that they were aware of climate change, while only 36 respondents (14 per cent) said that they were unaware of climate change. Asked how they would describe climate change, over two-thirds of the respondents related climate change to changing seasons, increased disasters or a combination of both. Of these, 109 respondents (42 per cent) related climate change to changing seasons, while 19 respondents (7 per cent) related climate change to increased disasters. Another 43 respondents (17 per cent) related climate change to both changing seasons and increased disasters. Around 67 per cent (174 respondents) thought their businesses were currently being impacted by climate change, while 81 respondents (31 per cent) thought their businesses were not currently being impacted by climate change. Disruption of transport through compromised quality of roads was the most cited current disaster impact on businesses. In total, 68 out of the 174 respondents (39 per cent) who thought their businesses were being impacted by climate change cited disruption in transport either singly (9 per cent) or in combination with other disaster impacts (30 per cent). This was followed by change in customer demand as different products became less or more relevant under a changing climate – with 10 respondents (6 per cent); and customers' loss of income leading to decreased demand for products – with 9 respondents (5 per cent). Premises being affected by disasters was another impact that was commonly cited – with 4 respondents reporting that their premises were affected by disasters, and a further 31 respondents reporting a combination of effects on premises along with other impacts. In total, 35 respondents (20 per cent) reported disaster impacts on premises either singly or in combination with other disasters.

Chart 7: Climate change awareness



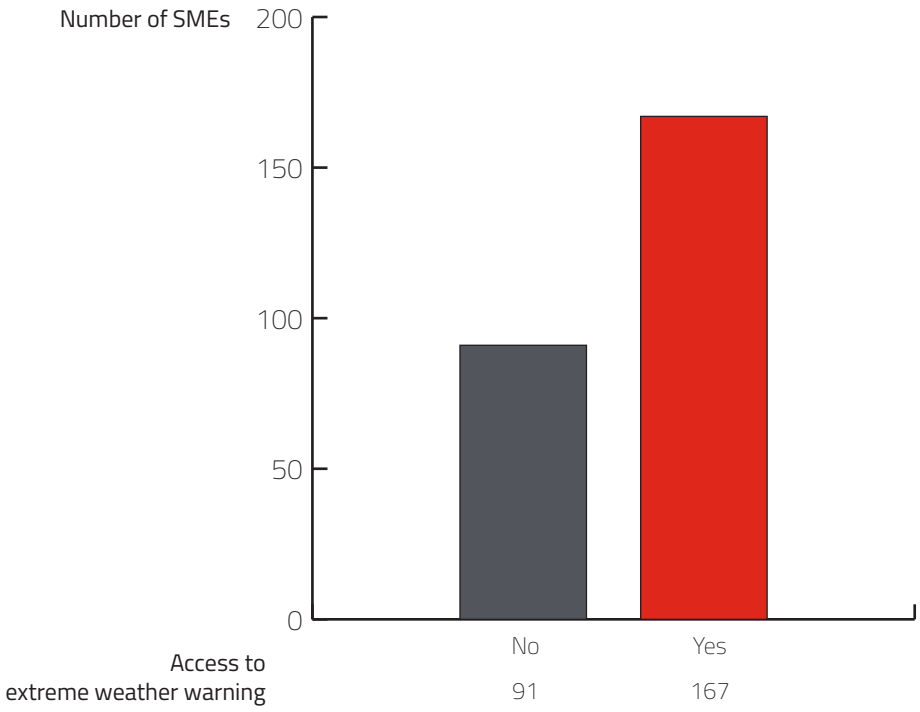
There was a close correlation between the number of respondents who believed their businesses were currently impacted by climate change and those who believed their businesses will be impacted in the future. In fact, 89 per cent of the 178 respondents who believed that climate change would impact their businesses in future, were those who believed their businesses were currently impacted by climate change. Slightly more than half of the respondents (52 per cent) who thought their businesses will be impacted by climate change said they were currently putting in place measures to reduce the impacts, while about 42 per cent said they were not doing anything. The remaining 6 per cent were not sure. Disaster preparedness at the location of the business was the most singly cited coping strategy, with a total of 16 respondents, followed by insurance with 6 respondents. Insurance, however, was the overall most cited coping strategy, with a total of 24 respondents citing it either singly (7 respondents) or in combination with other coping strategies (17 respondents). Less than 5 per cent of the 178 respondents who thought their businesses will be impacted by climate change in future cited developing BCPs as their coping strategy, either as a single measure or as part of a broader strategy.

The high cost of putting in place coping strategies was the reason most cited by the 75 respondents who said they didn't have a coping strategy. Seventeen respondents (23 per cent) cited the high cost of adaptation as their only reason for not putting in place any coping strategies, with another 6 citing the high cost alongside other reasons. A significant proportion (19 per cent) of these 75 respondents believed climate change is an act of God, hence there is nothing they can do about it. Ambivalence about climate change also featured strongly with 10 of the 75 respondents (13 per cent) citing it as a reason for not putting in place climate change coping strategies. Eleven respondents said that they would act but didn't know what to do; while 8 respondents said that they feared acting in vain because they were not sure if the predictions were true.

4.1.4. Access to and use of climate information by SMEs

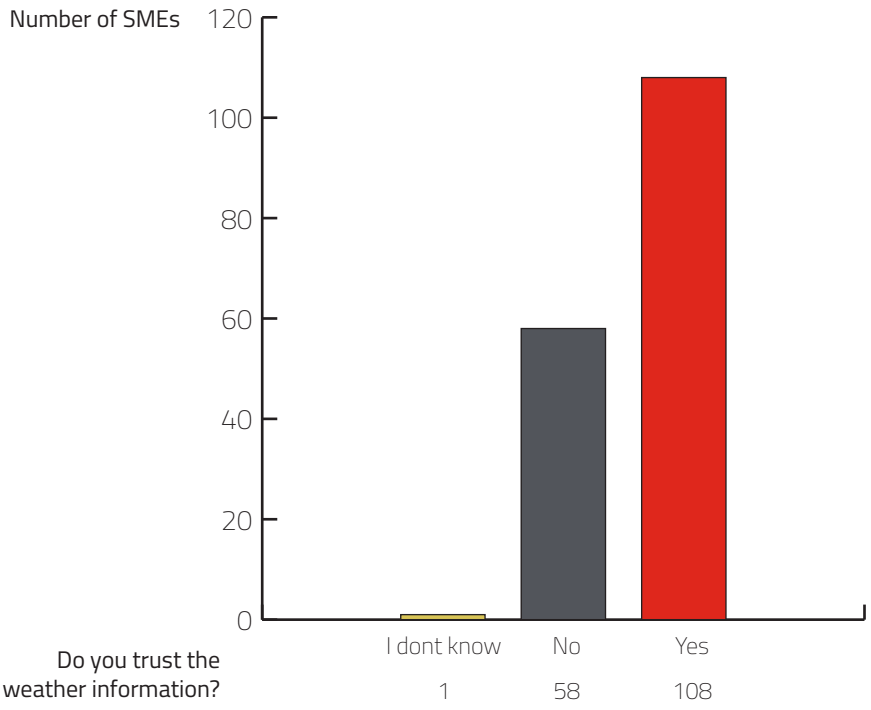
Most of the respondents (65 per cent) said they received information about extreme weather events, while 35 per cent said that they did not. From our conversations with respondents during the survey, TV, radio, newspapers, the internet, social media and security advisories were the common sources of weather information among the respondents. It should be noted, however, that this was not a formal survey question.

Chart 8: SME access to extreme weather warning



Trust in the CRI available from meteorological and other agencies stood out as a major issue. A significant proportion of the respondents (35 per cent) did not trust the extreme weather/climate risk information, despite receiving it. Out of the 167 respondents who said they received information on extreme weather events, only 108 said that they trusted this information.

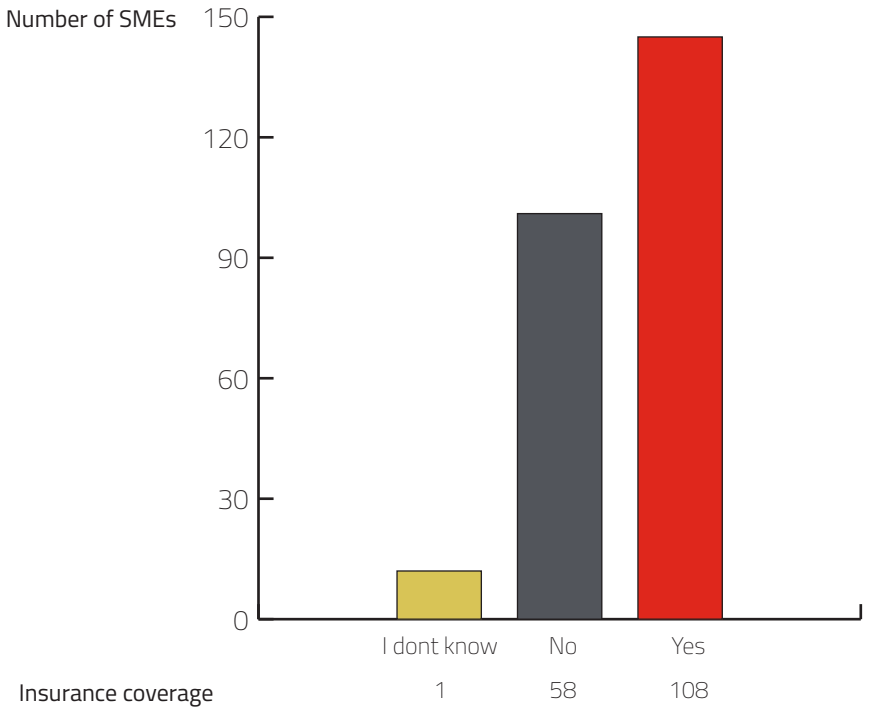
Chart 9: Number of SMEs trusting weather information



4.1.5. SMEs' access to insurance and credit

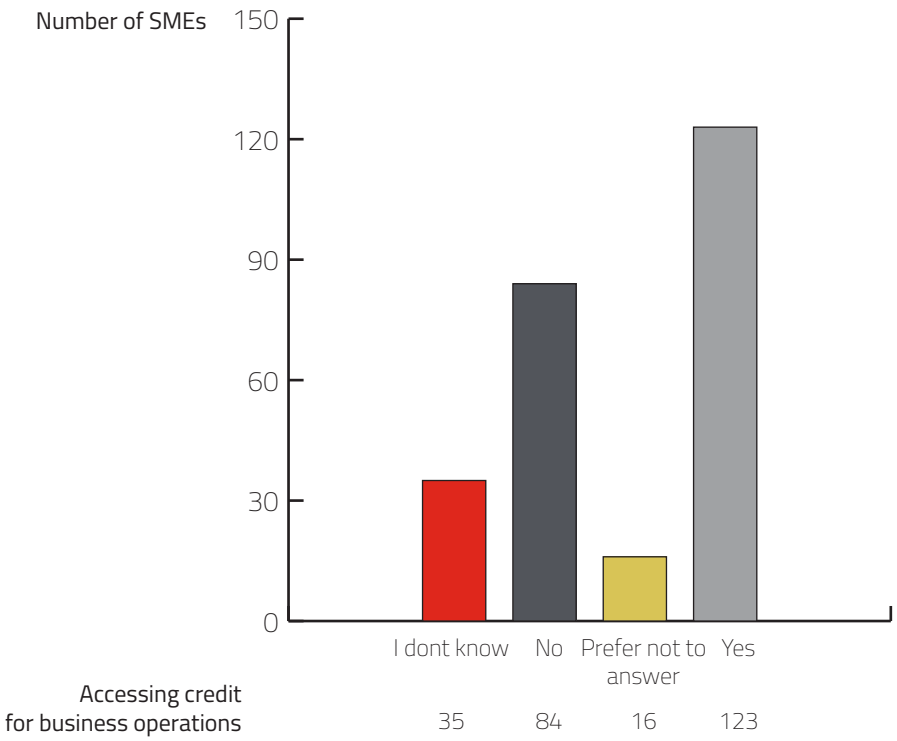
Of the 258 respondents, 145 (56 per cent) said they had at least some form of insurance for their businesses, while 101 respondents (39 per cent) said their businesses did not have any form of insurance cover. By business size, 94 per cent of large businesses, 81 per cent of medium businesses and 60 per cent of small businesses indicated that they had some form of insurance coverage. Only 30 per cent of micro businesses reported the same. A lack of trust in the insurance system, along with a lack of information about insurance options, topped the reasons cited by those who didn't have insurance, with 19 and 18 respondents respectively. These were followed by respondents who felt their businesses had no risk to insure (15 respondents) and the high cost of premiums (14 respondents). Mbarara, Mombasa and Nairobi had the most businesses that were insured, while Kampala, Katakwi and Kisumu had the least.

Chart 10: Number of SMEs with insurance coverage



With regard to credit, 123 of the respondents (47 per cent) said they had taken out a loan or other form of credit to support their businesses. Of the remaining respondents, 84 answered that they had not taken any form of credit; 35 respondents (14 per cent) were not sure; while 16 respondents (6 per cent) preferred not to answer the question. Banks were the most popular lender. The majority of respondents (67 per cent) who had taken out credit, cited banks as the source of their credit. Among these, over 80 per cent said banks were their only source of credit, while 20 per cent cited banks alongside other lenders like micro-finance, mobile money, SACCOs and friends/family. Other than banks, SACCOs were also cited by a significant number of respondents – 15 (12 per cent).

Chart 11: SME access to credit



'Not needed' topped the reasons among the respondents who had not taken credit, with half saying they had not taken any form of credit because they didn't need it. This was followed by religion, with 20 per cent saying they had not taken credit because their faith discourages it. Other significantly cited reasons were high interest rates and high risk, with 26 per cent of the respondents who had not taken credit citing these among their reasons.

4.2. Opportunities for integrating climate risk information in SME planning and operations

Availability of CRI

A key starting point for integrating CRI in SME planning and operations is the availability of CRI itself. As indicated in the survey results, the majority of respondents (65 per cent) reported that they received information about extreme weather events. This general availability of CRI was corroborated by our field consultations. Most of the participants at the FGDs and respondents to the KIIs confirmed that CRI was generally available, particularly from meteorological agencies such as the Kenya Meteorological Department (KMD) and Uganda National Meteorological Authority (UNMA). According to information available on the kmD website, the agency releases daily regional forecasts and rainfall reports as well as five-day, seven-day and monthly forecasts. It also releases daily and seven-day marine forecasts in addition to seasonal forecasts covering about three months. The website also contains agrometeorological bulletins (KMD, 2018). The UNMA also has a range of forecast products on its website. These include weather products such as daily, ten-day, city and terminal aerodrome forecasts; climate information including monthly and seasonal forecasts; and monthly disaster warnings. The field consultations also revealed that, while meteorological agencies were the primary sources of CRI, respondents also consulted other 'secondary' sources, including

government security agencies. For instance, Kenya's Ministry of Environment and Forestry as well as the Kenya Ports Authority along with the Ministry of Agriculture, Animal Industry and Fisheries in Uganda were cited by respondents as sources of weather and climate information. The main channels through which SMEs/individuals receive CRI are TV, radio, newspapers, the internet, social media and security advisories.

General awareness of possibilities for CRI integration

Most business owners and managers across the study sites had many diverse ideas on how to make use of CRI. From the surveys, the climate change coping strategies most widely cited by SMEs included disaster preparedness measures, insurance and diversifying suppliers. The field consultations also revealed that SMEs in Kenya and Uganda had diverse ideas on the actions they could take, based on CRI. Depending on the nature of the forecasts (e.g. daily, monthly or seasonal forecasts), the SMEs gave different examples of what they might do with that information. Common ideas included stocking-up in anticipation of shortages, sensitizing business partners about climate change impacts, training employees, joining cooperatives and taking loans. Other suggested actions included diversifying suppliers, taking up insurance, forming/joining business associations to lobby governments for appropriate policies to protect SMEs, and relocating businesses to safer areas. The installation of alternative energy sources (e.g. solar and biogas) were also cited.

Awareness of climate change and its impacts on SMEs

To integrate CRI into SMEs' planning and operations, it is crucial that SME owners and managers appreciate the reality of climate change and its impacts on their businesses. It is, therefore, interesting to note that an overwhelming majority (84 per cent) of the SMEs surveyed were aware of climate change, with two-thirds of the respondents easily relating climate change to changing seasons and the increased incidence of natural disasters. The survey also showed that SMEs in Kenya and Uganda were generally aware of the impacts of climate change on their businesses. The majority of respondents indicated that they think climate change is already impacting their businesses in diverse ways, including through the disruption of transport, change in customer demand, loss of customers' income and the impacts of disasters on business premises. Our consultations, through FGDs and KIIs, with businesses and business associations also revealed that SMEs generally have an idea of what climate change is. Specifically, most business owners and managers we interviewed related climate change to long-term changes in seasons; unpredictability of weather events, such as rains and droughts; and increased the incidence, extent and frequency of climate-related disasters like floods, droughts and extreme heat.

The FGDs and KIIs also revealed that SMEs were generally aware of climate change-related impacts. Across the study sites, respondents cited a diverse range of climate change impacts on their businesses. The most notable included prolonged droughts; increased flooding; the greater likelihood and spread of human and livestock diseases; and decreasing water levels in dams leading to disruption in power supply in some areas. respondents also cited secondary climate change impacts such as the reduced supply of raw materials, disruption and delays in transport, and low customer income.

Partnership and training opportunities for SMEs on use of CRI

The study identified a number of gaps with regards to the access to, and use of, CRI (see section 4.2, below). Some of these gaps could, however, be easily filled through targeted partnerships, sensitization and training. The study revealed a number of partnership and training opportunities for SMEs in different areas that could contribute to improved access to, and use of, climate information. For instance, while the survey revealed the low popularity of BCPs among SMEs in Uganda and Kenya, the concept of BCPs was, in general, well received, not only by SME owners and managers but also by representatives of business associations, insurance and micro finance institutions. In fact, some partners such as the Kenya National Chamber of Commerce and Industry (KNCCI) have gone beyond understanding the importance of BCPs to sensitizing its members on the benefits of having BCPs. This presents a great opportunity for the Red Cross to partner with KNCCI and other relevant partners specially to popularize BCPs as a tool for disaster preparedness and resilience. This can, in turn, enhance the integration of CRI – an important tool in the development of BCPs.

The study also identified a number of capacity building opportunities. For instance, in Kenya, the umbrella business associations that we interviewed were running programmes targeting SMEs' capacity building. The Kenya Association of Manufacturers (KAM), for example, has a consulting and policy advocacy programme that includes SME capacity building activities such as mapping out risks. In Uganda, Pride Microfinance Limited along with the Kampala City Traders Association also offer a variety of capacity building training for SMEs. PostBank Uganda, in partnership with the World Savings and Retail Banking Institute, offers regular financial literacy training to their clients. Such training opportunities could be adjusted to fill some of the capacity gaps identified in the study. Training could be targeted at, for example, enhancing SME owners', managers' and/or employees' understanding of the importance of CRI; how to access it; and how to use it.

4.2. Barriers to the integration of CRI in SME planning and operations

Inability to interpret climate information

Sixty-five percent of participants accessed and trusted climate information – mainly seasonal forecasts and warnings about extreme weather events. However, the FGDs revealed that only a few SMEs implemented disaster preparedness measures based on climate information – due, primarily, to an inability to interpret climate information, including forecasts. Institutions such as business associations, banks, and organizations like Red Cross should partner with forecasters to help translate this critical information for SMEs, in order to enable SMEs to take preparedness actions that reduce possible impacts of extreme weather on their businesses.

Lack of and low access to financial resources

Most of the actions required to integrate CRI into business planning and operations require substantial financial resources. This means that, while SMEs may receive CRI and even have the willingness to act on it, some fail to do so because they lack the necessary finances. Indeed, many business owners we talked to during the FGDs and KIIs noted that financial resources were not

always readily available to implement actions based on forecasts. Indeed, the high cost of putting in place coping strategies was the most common reason cited by those respondents who did not have a strategy to adapt to climate change. While credit could be an option according to the FGDs and KIIs, most SMEs in Uganda and Kenya regard credit as a risk rather than a resource. This lack of popularity for credit among SMEs was confirmed by the survey results, which showed that only 47 per cent of respondents had taken out a loan or other form of credit to support their businesses.

Low appreciation of risk management as a business strategy

If well planned and implemented, a good risk management strategy provides a safe workplace and reduces the chances of negative impacts on a business. In the long-term, risk management strategies may even increase profitability through enhanced business resilience, reduced intensity and frequency of impacts, and less disruption. While a lack of financial resources was highlighted in the study as a barrier to businesses taking action based on CRI, many participants did not view managing risks as a primary requirement in the first place. For instance, some participants did not view risk management as a growth strategy or a key concern for their businesses, which were more concerned with immediate and direct impacts such as reducing costs, increasing profits and enhancing access to markets. Therefore, businesses may be less willing to invest limited financial resources on action informed by climate information if it is not linked directly to business growth. This finding reflects the need to increase businesses' understanding of the value of BCPs in avoiding setbacks to growth and progress.

The low appreciation of risk management as a business strategy may, in part, explain why a significant proportion of the respondents (42 per cent) did not have any climate change coping strategies in place, and only 33 per cent had written BCPs for their businesses. The low popularity of BCPs was also apparent in the FGDs and KIIs. For example, the KNCCI told us that only five to ten per cent of its members have BCPs. From the KIIs undertaken in Kampala and Kasese, BCP coverage was found to be even lower in Uganda. Insurance cover is another important risk management strategy, yet 39 per cent of SMEs surveyed did not have any form of insurance. A lack of trust in the insurance system and lack of information about insurance options topped the list of reasons for the low uptake of insurance. According to KAM, SMEs are generally aware of insurance but do not appreciate the need for it. In its view, many SMEs who have insurance only take it as a legal requirement and often go for the least costly offer, even when comprehensive cover is available. Such low appreciation of risk management strategies may make it difficult to integrate CRI in business planning and operations.

Religion

From both the survey and field consultations (FGDs and KIIs), religion also featured as a limiting factor to the development of climate change coping strategies. For instance, the survey showed a significant proportion of respondents (19 per cent) believed that climate change is an act of God, hence there was nothing they could do about it. The survey also showed that religion is a significant contributor to the reduced use of credit for business development. In fact, after not needing credit, religion was the second most cited reason given by respondents who said their businesses had not taken any

form of credit. A good proportion (20 per cent) said they had not taken credit because their faith discourages it. The link between the uptake of credit and integration of CRI into SMEs' planning and operations is clear. Credit can bridge one of the key CRI integration gaps – the lack of adequate financial resources to develop and implement climate change coping strategies. This makes any factor impeding the uptake of credit or other financial resources a barrier to using CRI.

Doreen Akeeh runs a bakery in Kampala. She fears a fire outbreak might happen at anytime. This is why she is part of Uganda Red Cross' efforts to work with small and medium enterprises to prepare for disasters.

5. Conclusion and recommendations

5.1. Conclusion

This analysis has identified a number of opportunities and gaps with regards to integrating CRI into the planning and operations of SMEs in Uganda and Kenya. There are, indeed, important opportunities that could be exploited to integrate CRI into SME planning and operations. But a number of gaps must also be surmounted for such integration to succeed.

The first opportunity is the general availability of CRI, particularly from the two countries' meteorological agencies. These agencies provide extreme weather/climate risk information in the form of daily regional forecasts, rainfall reports, monthly forecasts, daily and seven-day marine forecasts, seasonal forecasts and disaster warnings. Other government agencies, such as port and security services, act as secondary sources of CRI. The general availability of climate information is supported by the easy accessibility of this information by the majority of SMEs in our study.

Another important opportunity is SMEs' general awareness of climate information and their diverse ideas on how to incorporate it into their planning and operations. Depending on the nature of the forecasts (e.g. daily, monthly or seasonal), the SMEs gave different examples of what they could do with the information. This means that with more sensitization, SMEs could easily review, prioritize and focus their actions based on available CRI. But this poses a number of challenges:

Firstly, implementing these ideas may be hindered by the limited risk management strategies implemented by businesses. Business risk management strategies proved to be of low popularity in our survey, especially BCPs. Such a low appreciation of risk management strategies is a potential barrier to CRI integration.

Secondly, most SMEs felt that their businesses could not afford to set aside budgets for implementing climate adaptation actions. This is exacerbated by the fact that many of them did not think such an investment would directly contribute to their businesses' bottom lines, especially in the short term.

Thirdly, while credit and insurance could be used to fill such financial gaps, the study revealed a general low level of credit usage; primarily because credit is seen as high risk. This limits SMEs' access to funds with which to implement action based on CRI.

Another important opportunity is that an overwhelming majority of SMEs are aware of climate change and its diverse range of impacts on businesses. This is important because it could enhance SMEs' appreciation of CRI and its use

in reducing the intensity and frequency of climate-change related impacts. However, the study identified four reasons why SMEs have not acted to adapt to climate change:

- they do not think they will be impacted by climate change
- they do not have the financial resources to adapt
- climate change is viewed as an act of God
- they do not know what to do in order to adapt.

Lack of adequate data, particularly those quantifying losses to SMEs from climate change-related and other disasters, was also identified as a key challenge. In the absence of this data, SMEs may not appreciate fully the need for disaster preparedness; and, therefore, may not take the integration of CRI seriously.

The study also revealed partnership and training opportunities for SMEs that could lead to improved access to, and use of, climate information. These include the positive reception of BCPs by potential partners; the efforts of some partners to promote BCPs to the SMEs they work with; and existing training opportunities (delivered by business associations, micro-finance and banks) that could be adapted to fill some of the capacity gaps identified in this study.

5.2. Recommendations

Based on an analysis of the survey results and the outcomes of field consultations, some possible steps for SMEs and their partners include:

- Partnering with business alliances to develop training for managing climate risk and outreach materials at low cost.
- Planning for business continuity to minimize climate-related disaster losses and speed recovery – 58 per cent of survey respondents indicated they do not have a BCP.
- Partnering with financial institutions to document the value of business continuity planning that is climate-smart and developing incentive schemes such as discounted loans – 48 per cent of respondents indicated that they had taken out a loan.
- Generally promoting insurance against climate impacts and partnering with insurance companies to incorporate the forecast-based financing model into preparedness – 39 per cent of respondents indicated they do not have insurance cover.
- Developing strategies to mitigate risks to, or fluctuations in, the transportation of goods, the price and supply of raw materials, and customer preferences.

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